Asset Management Plan 2025

Township of West Lincoln

July 2026

Table of Contents

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 Township's proposed Level of Service (LOS) over a ten-year period and estimates the associated costs and risks of delivery. The Township's projected sustainable funding and funding shortfalls to meet the proposed LOS are identified. Strategies for addressing the funding gap are included. These projections are based on the Township's 2025-year end asset inventory and associated asset replacement cost, condition, lifecycle management strategies, and forecasted capital requirements. This plan outlines the process for selecting three proposed LOS options, and the Township's selected option considering risk, affordability and achievability.

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

This AMP includes the following asset categories:

Table 1: Asset Categories in Scope

Core Assets	Non-Core Assets
Roads Network	Buildings
Bridges & Culverts	Land Improvements
Stormwater Network	Rolling Stock
Water Network	Machinery & Equipment
Sanitary Network	

1.2 Compliance

With the development of this AMP the Township of West Lincoln has achieved compliance with July 1, 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 $489.5 million, the largest proportion of which is associated with the road network followed by bridges and culverts. Most (87%) assets analyzed in this AMP are in fair or better condition, with assessed condition data being available for 70% of assets. For the remaining 30% of assets age was used to approximate condition – this is most prevalent within the water and stormwater networks.

To determine suitable proposed LOS options, internal Administration and resident surveys were conducted. The resident survey provided insights into satisfaction levels with existing service delivery and priorities for investment and indicated:

- Most residents are satisfied or neutral about the services delivered by the Township's assets; the exception is the stormwater network where only about a third of respondents expressed satisfaction.
- The road network was most often identified as a priority while parks and recreation were most often identified as *not* a priority.

Additionally, the Township surveyed 13 key staff involved in operating and planning for the Township's assets. Key insights included:

- Budgets are not going as far, forcing "band-aid fixes" on bridges due to financial pressure.
- Capital funding demands for proactive upgrades (asbestos cement water main replacements) outpace available budgets.
- Staffing is generally sufficient for daily operations but missing key inspection staff for contract compliance and development oversight.

Considering all the above, the following three proposed LOS options were selected, modelled, and evaluated:

Table 2: Proposed LOS Options

Scenario	Description
1	Maintain Existing Spending Levels
2	Achieve 100% of Requirements, phased in over 20 years
3	Achieve 75% of Requirements, phased in over 20 years

Considering the risks, achievability, and affordability of each of these options, the Township selected scenario 3 as their proposed LOS. In the long term, priority asset categories are projected to see improvements to asset conditions and reductions in asset risk.

A financial strategy to meet the required investment is detailed in Section 6. The key findings indicate capital investment must increase. Considering affordability constraints of the increase required alongside infrastructure risks of delayed investment, it is recommended to phase in cost increases. A phase-in strategy allows for incremental increases in capital investment, aiming to balance the need to increase investment alongside the cost constraints of doing so. Debt reallocation is a strategy explored and considerations of existing reserve levels are noted.

1.4 Recommendations

A financial strategy was developed to meet the Township's desired levels of service. The following graphic shows annual tax/rate change required to eliminate the Township's infrastructure deficit and facilitate growth based on a 20-year plan for tax funded assets and a 10-year plan for rate funded assets:

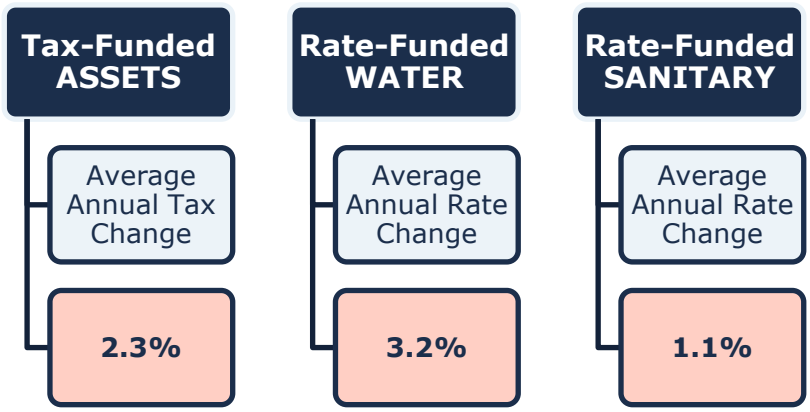


Figure 1 Proposed Tax/Rate Changes

2. Introduction & Context

2.1 Community Profile

Census Characteristic	Township of West Lincoln	Ontario
Population 2021	15,454	14,223,942
Population Change 2016-2021	6.6%	5.8%
Total Private Dwellings	5,422	5,929,250
Population Density	39.9/km^2	15.9/km^2
Land Area	387.02 km^2	892,411.76 km^2

Table 3 Township of West Lincoln Community Profile

The Township of West Lincoln is a vibrant rural community located within the Niagara Region, strategically situated between the cities of Hamilton and St. Catharines. Characterized by its prime agricultural lands and beautiful natural heritage areas, the Township offers an enjoyable small-town environment while steadily expanding its economic and residential footprint.

The Township's population and commercial activities are anchored by Smithville, the sole urban settlement area and the primary center for residential, business, and industrial growth. Beyond Smithville, West Lincoln is defined by its rural charm and a collection of smaller hamlet communities that provide a mix of residential housing and essential services to the surrounding agricultural areas.

West Lincoln has experienced steady historic population growth and is planning for continued expansion over the next decade. In 2006, the Township's population stood at 13,170. By the 2021 Census, the population had grown to 15,454 residents, which represented a 6.6% increase from the previous 2016 Census. Looking to the future, West Lincoln's population is projected to reach 16,990 persons by the year 2031. To accommodate this growth efficiently and preserve agricultural lands, most of the new residential development will be directed toward Smithville, where municipal services are available.

While agriculture and agriculturally related activities remain a primary economic driver, West Lincoln's local labor market is highly diversified. The local economy is heavily supported by a growing Smithville Industrial Park and a competitive business environment. The top employment industries in the Township include manufacturing, construction, and retail trade.

2.2 Climate Change

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

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this time period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average.

According to *Canada's Changing Climate Report* and projections from ClimateData.ca, average annual temperatures in southern Ontario are expected to continue increasing throughout the century. Under high greenhouse gas emission scenarios, average temperatures could rise by approximately 4–6°C by the end of the century compared with the historical baseline. Winters are projected to warm the most, resulting in fewer extremely cold days, shorter periods of snow cover, and more frequent freeze-thaw cycles. Summers will also become hotter, with a substantial increase in the number and duration of extreme heat events.

Annual precipitation in West Lincoln is projected to increase overall, particularly during the winter and spring months. However, rainfall is expected to become more variable, with longer dry periods interrupted by heavier downpours. This raises the risk of summer droughts and water shortages despite higher annual rainfall totals. More winter precipitation is expected to fall as rain rather than snow, reducing snowpack and altering seasonal runoff patterns.

Climate change is also expected to increase the frequency and intensity of extreme weather events. Extreme weather like heavy rainfall events and heat waves are expected to occur more frequently, posing risks to public health, agriculture, and energy systems. These projected changes highlight the importance of climate adaptation planning to improve the resilience of infrastructure, natural ecosystems, and agricultural operations within the Township of West Lincoln.

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.

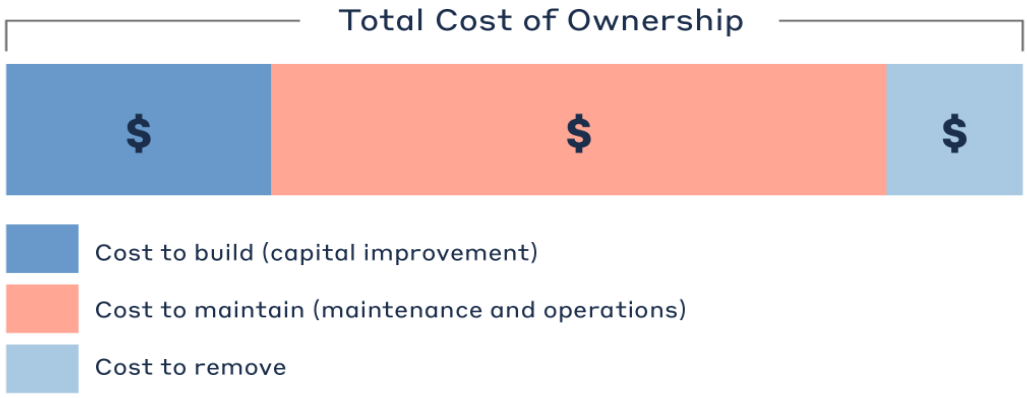


Figure 2 Total Cost of Asset Ownership

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.

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.

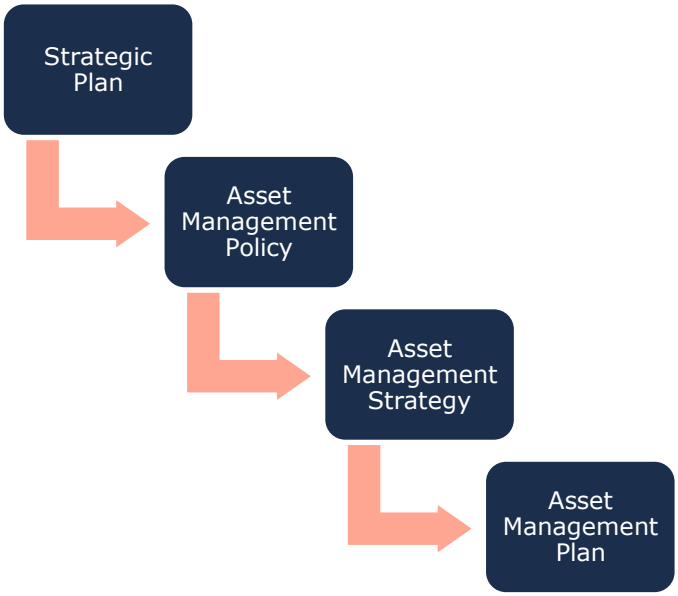


Figure 3 Foundational Asset Management Documents

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 Township's approach to asset management activities. It aligns with the organizational strategic plan and provides clear direction to Administration on their roles and responsibilities as part of the asset management program.

The Township of West Lincoln adopted their Strategic Asset Management Policy on April 9, 2019, in accordance with Ontario Regulation 588/17. The policy is intended to guide the consistent use of asset management practices across the organization. It also aims to facilitate logical and evidence-based decision-making for the management of municipal infrastructure assets and to support the delivery of sustainable community services now and in the future.

Asset Management Strategy

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

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

Asset Management Plan

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

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

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

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 Administration 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	**$$$**	♦ Useful life may not be extended as expected; ♦ May be costlier in the long run when assessed against full reconstruction or replacement; ♦ Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction Asset end-of-life activities that often involve the complete replacement of assets	**$$$$$**	♦ Incorrect or unsafe disposal of existing asset; ♦ Costs associated with asset retirement obligations; ♦ Substantial exposure to high inflation and cost overruns; ♦ Replacements may not meet capacity needs for a larger population; ♦ Loss or disruption of service, particularly for underground assets;

Table 4 Lifecycle Management: Typical Lifecycle Interventions

The Township's approach to lifecycle management is described within each asset category outlined in this AMP. Administration 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.

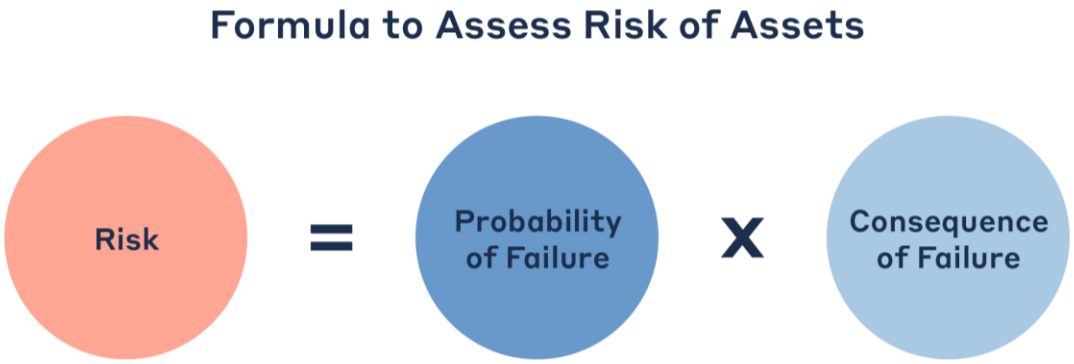


Figure 4 Risk Equations

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 5 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 5 Risk Analysis: Types of Consequences of Failure

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

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

Levels of Service

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

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

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, Bridges & Culverts, Water, Wastewater, Stormwater) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP.

Technical Levels of Service

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

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

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 municipalities 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 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 Data Effective Date

It is important to note that this plan is based on data as of **December 2025**; therefore, it represents a snapshot in time using the best available processes, data, and information at the Township. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.4.2 Deriving Replacement Costs

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

User-Defined Cost and Cost Per Unit

Based on costs provided by internal staff which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience.

Cost Inflation / CPI Tables

Historical costs of the assets are inflated based on Consumer Price Index or Non-Residential Building Construction Price Index.

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

2.4.3 Estimated Service Life & Service Life Remaining

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

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

Figure 5 Service Life Remaining Calculation

2.4.4 Reinvestment Rate

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

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

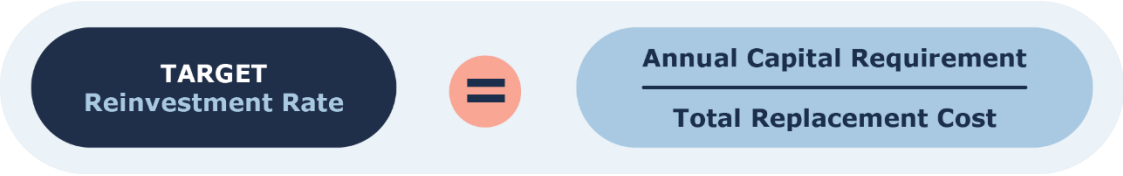


Figure 6 Target Reinvestment Rate Calculation

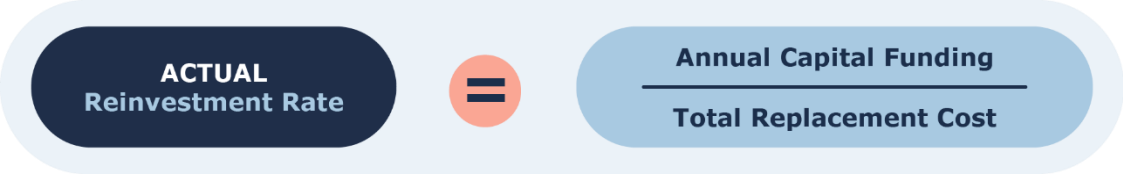


Figure 7 Actual Reinvestment Rate Calculation

2.4.5 Deriving Asset Condition

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

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

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

Table 6 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)[1]. 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 8 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines. This plan is compliant with Phase III.

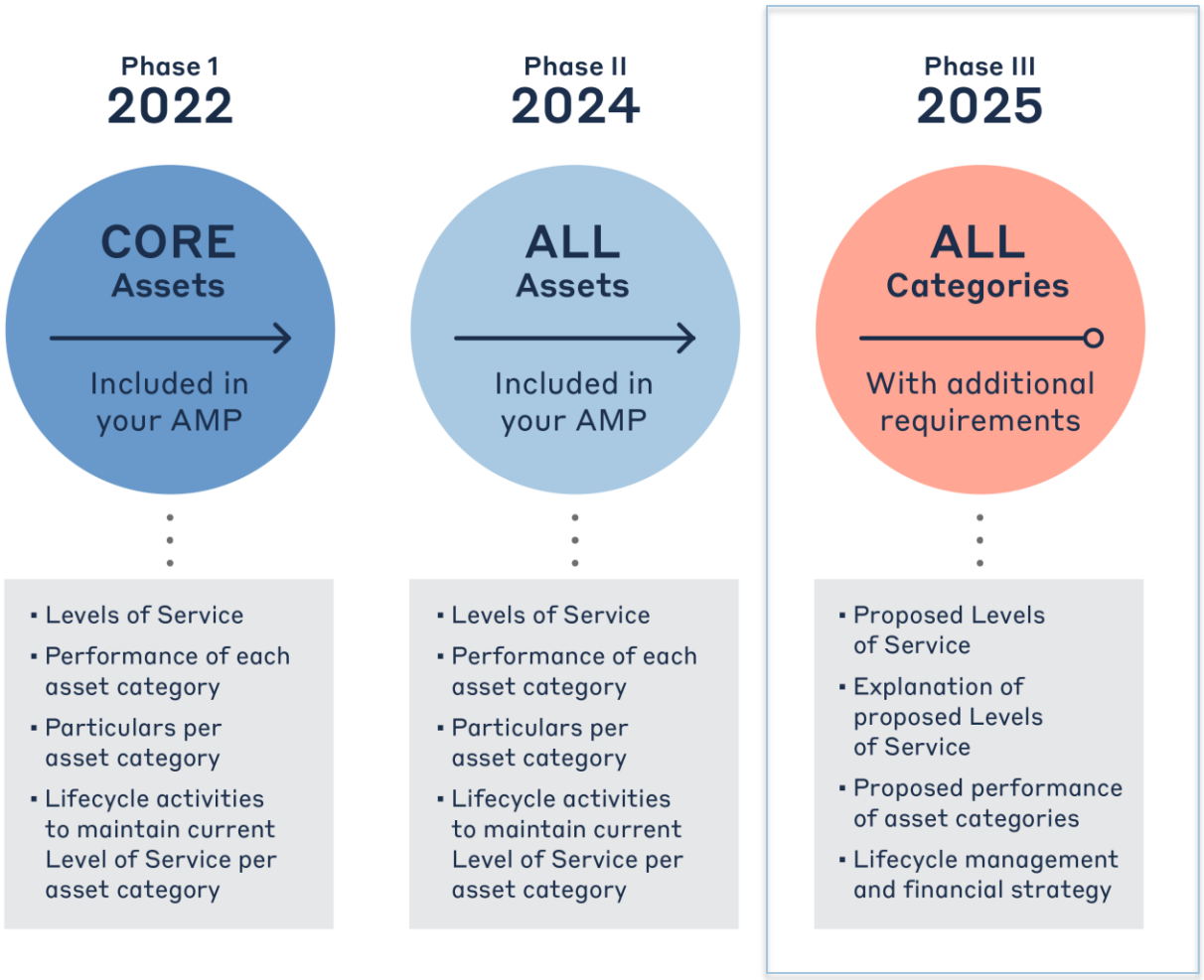


Figure 8 O. Reg. 588/17 Requirements and Reporting Deadlines

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

Table 7 below highlights compliance requirements and where within this AMP those requirements are met.

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Growth assumptions and their considerations for proposed LOS	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	4.0	Complete
Proposed LOS over 10 years for each asset category	6 (1) 1	5.2.2	Complete
Why proposed LOS are Appropriate	6 (1) 2 (i., ii,iii,iv)	5.4	Complete
Proposed LOS Risk Management	6 (1), (B)	5.5.1	Complete
Proposed LOS Lifecycle Management	6 (1) 4 (i., A,B, C, D)	5.5.2	Complete
Proposed LOS Financial Strategy	6 (1) 4 (i., D,ii.,iii.,iv.)	6.0	Complete

Table 7 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 Township'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.

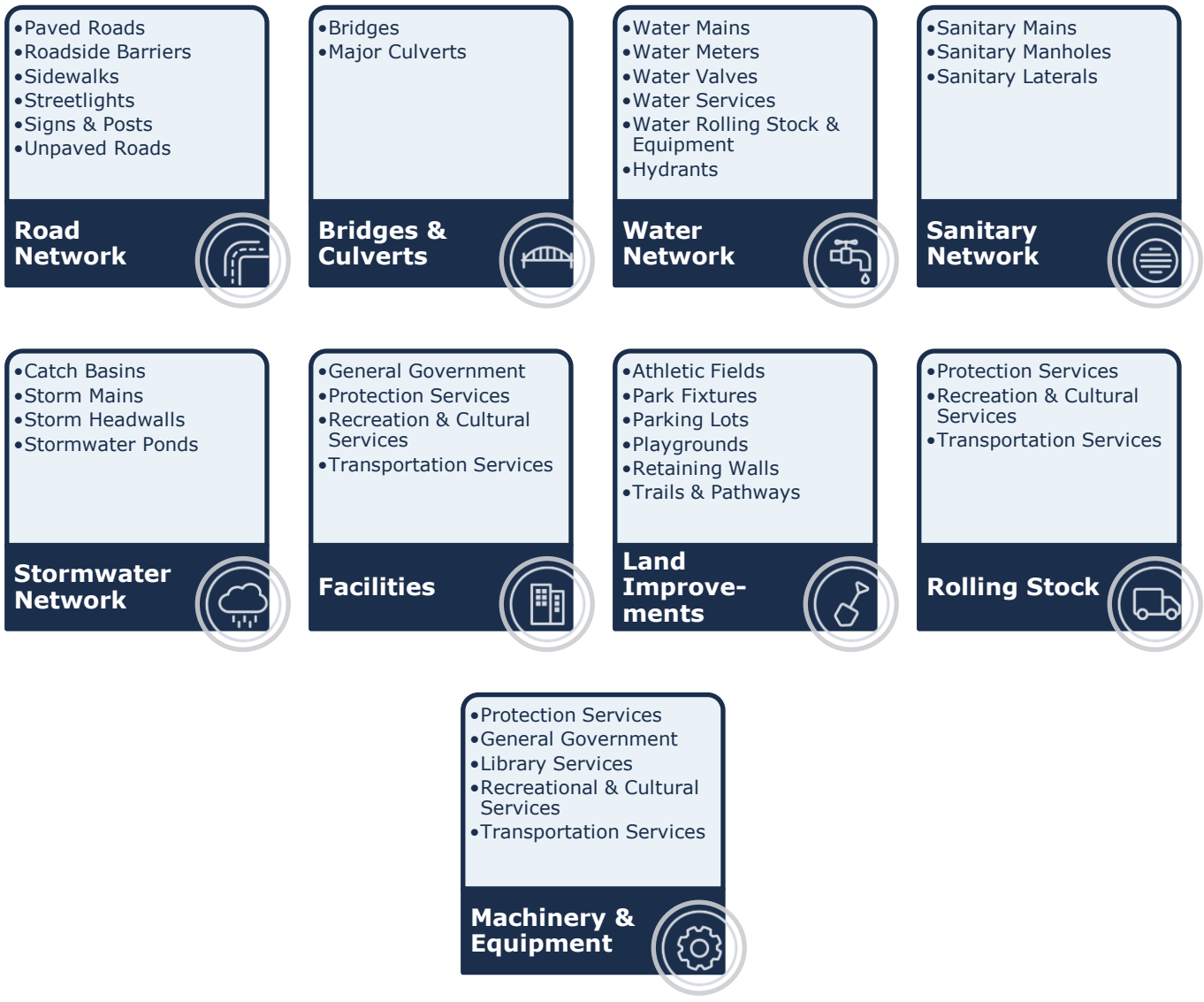


Figure 9 Asset Hierarchy and Data Classification

3.2 Portfolio Overview

3.2.1 Total Replacement Cost of Asset Portfolio

The nine asset categories analyzed in this Asset Management Plan have a total current replacement cost of $489.57 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 10 illustrates the replacement cost of each asset category; at 32% of the total portfolio, roads form the largest share of the Township's asset portfolio, followed by bridges and culverts at 21%.

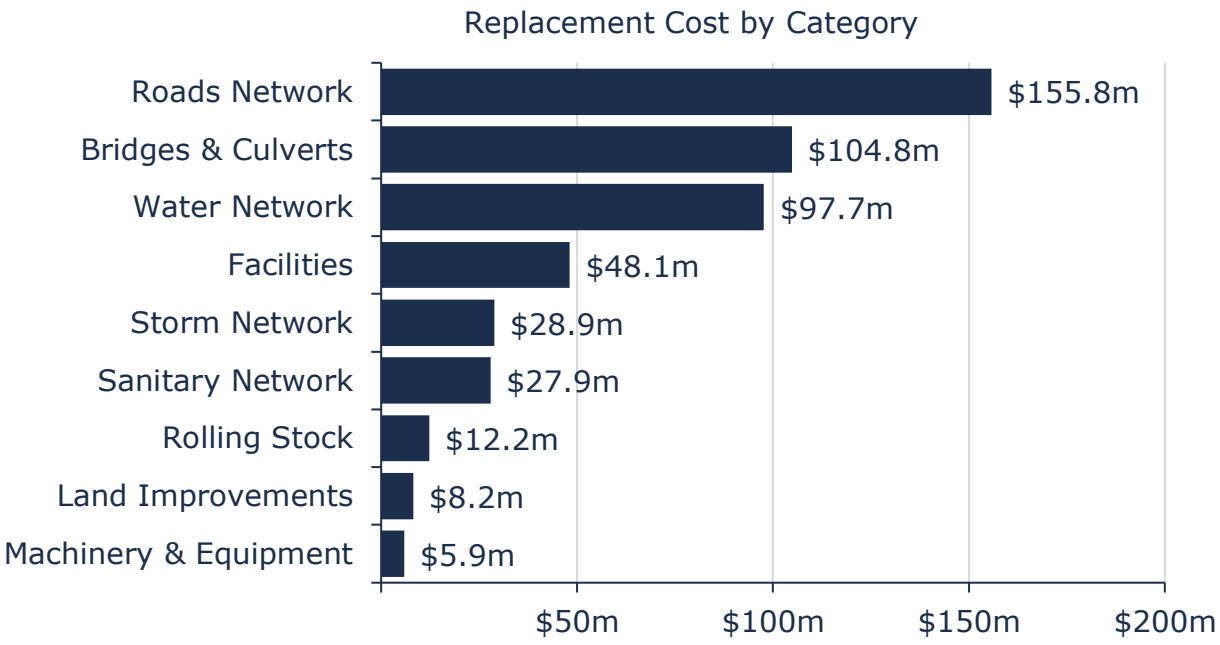


Figure 10 Current Replacement Cost by Asset Category

3.2.2 Condition of Asset Portfolio

Figure 11 and Figure 12 summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition and age-based analysis, 87% of the Township's infrastructure portfolio is in fair or better condition, with the remaining 13% in poor or worse condition. Typically, assets in poor or worse conditions may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

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

Condition data was available for most asset categories; however, the water network does not currently have any assessed condition, the stormwater network has about a third of its assets assessed for condition and machinery and equipment have about half. This is further summarized in *Source of Condition Data*, below.

Further, when assessed condition data was available, it was projected to current year-end (2025), unless otherwise noted. This 'projected condition' can generate lower condition ratings than those established at the time of the condition assessment. The rate of this deterioration will also depend on lifecycle curves used to project conditions over time.

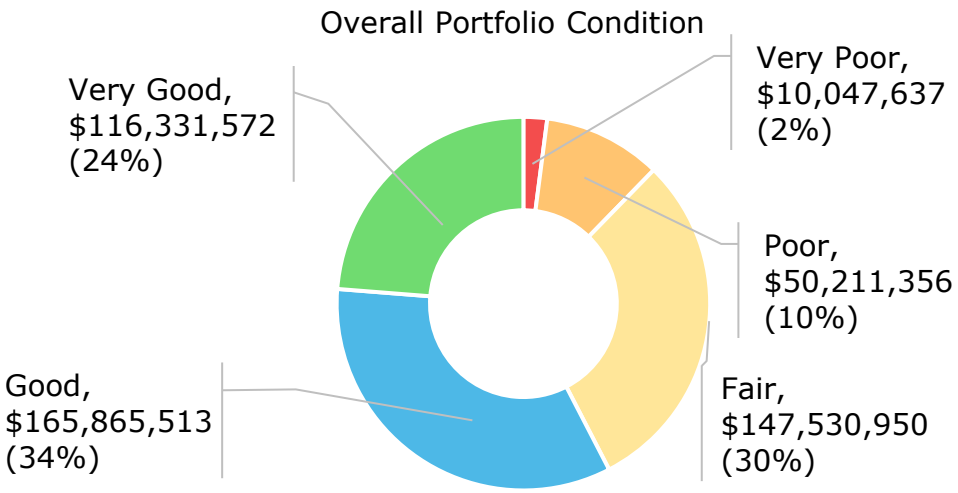


Figure 11 Asset Condition: Portfolio Overview

As further illustrated in Figure 12 at the category level, most assets are in fair or better condition. A small exception is the machinery and equipment and land improvement assets where a larger proportion of assets are in poor or very poor condition. This does not mean that these assets are necessarily in disrepair, but that their age suggests that they are nearing or passed their expected useful lives. Table 8 below provides further details on how condition data was derived for each asset segment.

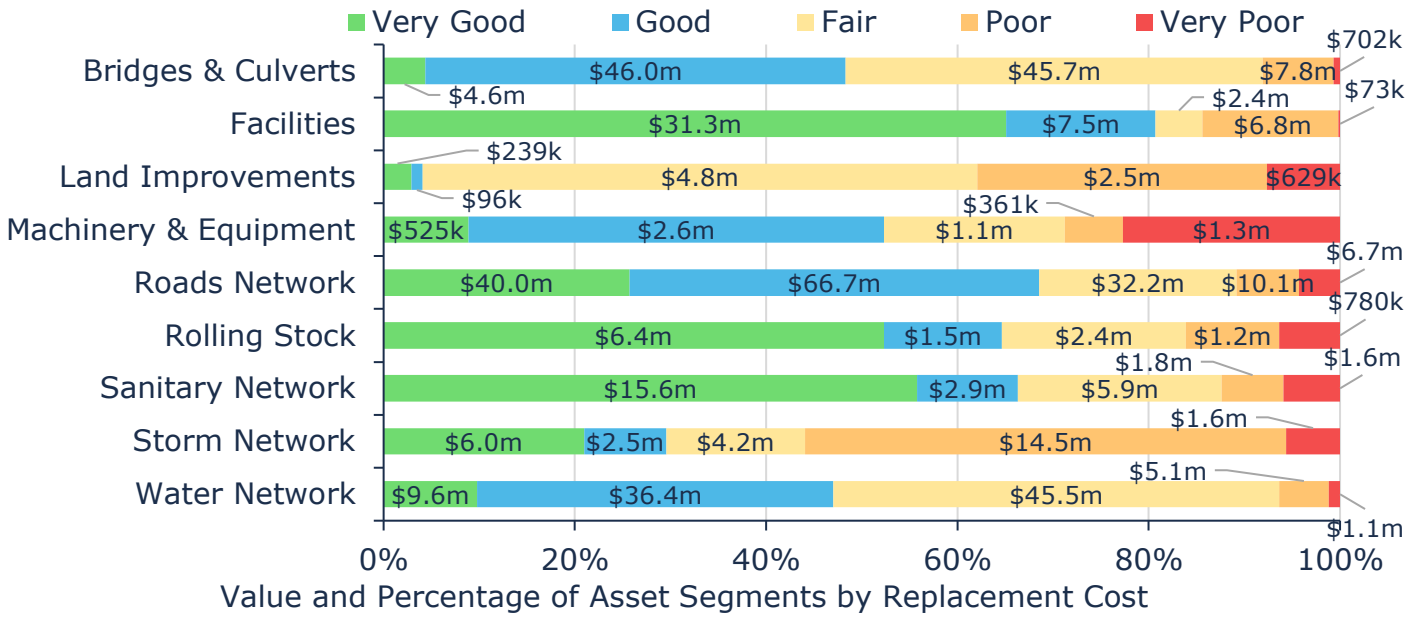


Figure 12 Asset Condition by Asset Category

Source of Condition Data

This AMP relies on assessed condition for 70% 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 8 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
Roads Network	All excluding signs & posts, streetlights.	92	Applied Research Associates, Staff Assessments
Bridges & Culverts	Bridges Structural Culverts	100	2025 OSIM Report
Water Network	All	0	N/A
Sanitary Network	All excluding laterals	72	2021 Civica Infrastructure Inc.
Storm Network	All excluding headwalls and catch basins	28	2021 Civica Infrastructure Inc. & Staff Assessments
Facilities	All	99	Staff Assessments

Land Improvements	All	94	Staff Assessments
Rolling Stock	All	70	Staff Assessments
Machinery & Equipment	All	49	Staff Assessments

Table 8 Source of Condition Data

3.2.3 Risk Matrix

Using the risk equation and preliminary risk models, Figure 13 shows how assets across the different asset categories are stratified within a risk matrix.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$32,965,746 (40%)	$19,511,366 (24%)	$5,839,847 (7%)	$14,718,538 (18%)	$9,608,383 (12%)

Figure 13 Risk Matrix: All Assets

The analysis shows that based on current risk models, approximately 12% of the Township's assets, with a current replacement cost of approximately $9.6 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates and were considered to be most essential to the Township.

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

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

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

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 Township have been developed through comprehensive engagement with Township Administration, and input from residents. To achieve any target LOS goal, careful consideration should be given to the following:

Financial Impact Assessments

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

Infrastructure Condition Assessments

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

Service Metrics

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

Service Impact Assessments

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

Key Lifecycle Activities

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

Risk Management

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

Infrastructure Condition Enhancements

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

Timelines

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

Stakeholder Engagement

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

Flexibility

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

4.2 Stakeholder Engagement

To better understand resident sentiment about municipal assets and service delivery, the Township of West Lincoln issued a resident engagement survey. The survey was made available to the public from April 23rd, 2026, to May 7th, 2026. The Township issued a new release on their website, notified email subscribers, posted on their social media pages, and held a website popup. Additionally, the Township posted notices of the survey on paper at public facing facilities. In total, 67 responses were received, representing a 0.4% response rate per capita or a 1.2% response rate per household. Most respondents were 30 years or older (27% aged 30-44; 29% 45-64; 37% 65+). Given the modest response rate, the Township considered the information as a general guide and supplemented it with knowledge of resident values otherwise.

Survey results indicated that most residents were satisfied or neutral about the services delivered by the Township's assets. Facilities assets had the highest satisfaction levels while stormwater management assets had the lowest.

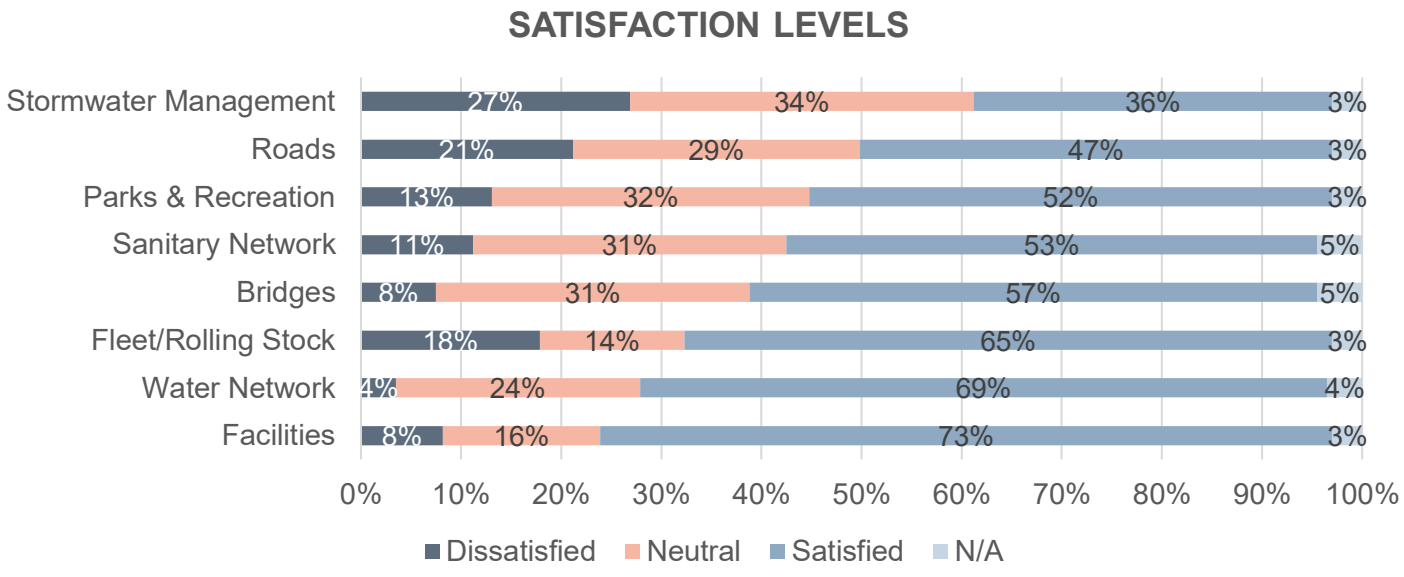


Figure 14: Satisfaction Levels by Asset Category

When asked to identify priority asset categories, the road network was most often identified as a priority across all asset categories. A high proportion of respondents identified neutral priority towards sanitary, water, bridges, and stormwater assets. A high proportion of respondents identified fleet, facilities, and parks & recreation assets as not a priority.

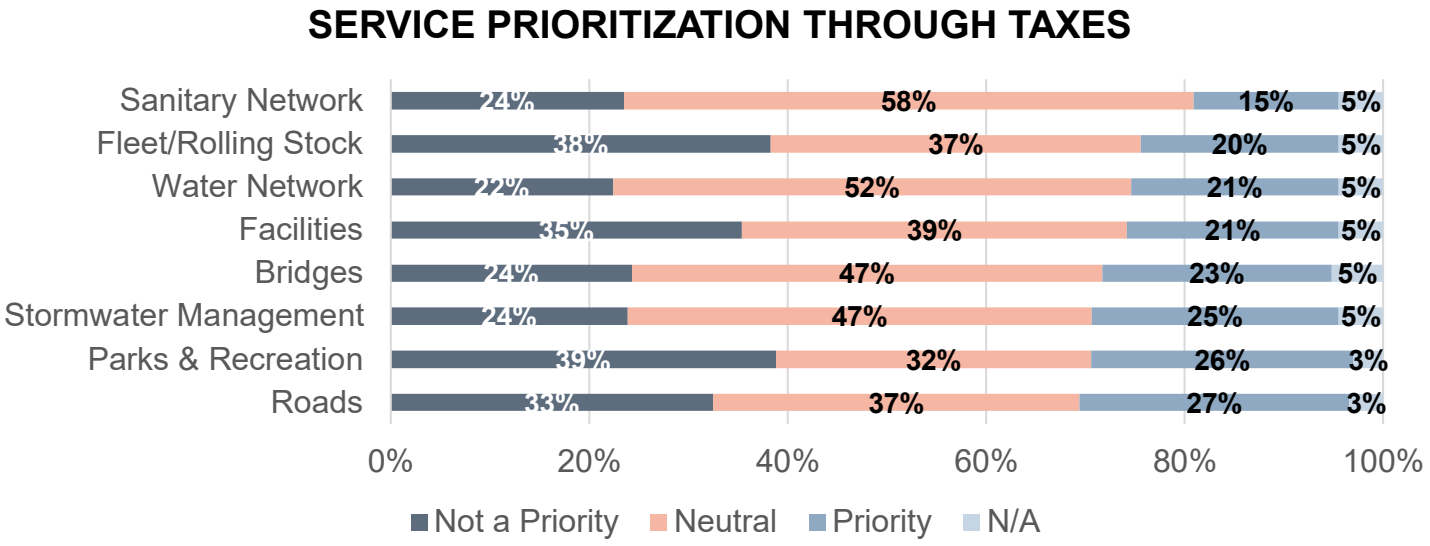


Figure 15: Asset Priorities as Identified in the Resident Survey

Additionally, the Township surveyed key staff involved in the daily operations, long-term capital planning, and lifecycle management of the Township's assets. A total of 13 staff were surveyed, providing an essential perspective on the current state of municipal assets. The following is a high-level summary of the feedback received from Administration:

- Staffing is generally sufficient for daily operations but missing key inspection staff for contract compliance and development oversight.
- Budgets are not going as far, forcing "band-aid fixes" on bridges due to financial pressure.
- Capital funding demands for proactive upgrades (asbestos cement water main replacements) outpace available budgets.
- Most utility and infrastructure assets were rated satisfactory, maintaining low disruption rates and highly responsive operations.

Administration also noted the following details specific to asset categories:

- **Roads:** Community demands gravel road paving, but proper engineering requires full reconstruction rather than just hard-surfacing. Lifecycles, road condition and traffic data need to be at the forefront of lifecycle activity decisions.
- **Bridges & Culverts:** Funding model is failing; tight budgets force short-term fixes instead of proper capital rehabilitation.

- **Water Network:** High operational satisfaction with minimal annual disruptions; recommend continuing GIS asset tracking and prioritizing proactive replacements of A/C mains.
- **Sanitary Network:** System reliability is high with low backups; recommend tracking advanced performance metrics like peak vs. dry flow baselines (I&I) and customer response times.
- **Machinery & Equipment:** Current 10-year maintenance lifecycle approach works well and successfully minimizes public service downtime.

4.2.1 Key Overarching Priorities

The feedback from Administration provided a clear, consistent, and practical perspective on the Township's asset portfolio. Three overarching themes were identified:

- **Financial Gap:** A significant challenge highlighted across multiple categories is the growing gap between asset needs and available funding. Rising costs for maintenance, construction, and replacement are conflicting with current budget levels and creating financial pressure.
- **Proactive Capital Planning:** Administration recognized that capital planning will be of increasing importance as major assets require major capital rehabilitation and replacement. Considering this, alongside the existing financial pressures, a middle ground scenario was deemed valuable to evaluate.
- **Political Pressures:** Administration acknowledged that raising taxes and rates is never popular, but almost always necessary. Considering this, they felt understanding the long-term ramifications of continuing with current capital investment levels could serve valuable in encouraging more sustainable long-term decisions.

4.3 Proposed Levels of Service Scenarios & Analysis

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.

Scenario 1	Scenario 2	Scenario 3
• Maintain Existing Capital Spending Levels	• Achieve 100% of requirement funding, phase increased over 20 years • Include costs of BTE in funding analysis	• Achieve 75% requirment funding in 20 years • Include costs of BTE in funding analysis

Figure 16 PLOS Scenario Overview

Risks

Table 9 below identifies, defines, and ranks qualitative risks for each proposed LOS option.

Table 9:Risks Associated with Proposed LOS Options

Risk Identified	Risk Defined	Relative Severity	Scenario
Reliance on Grants	The larger the gap between capital funding requirements and available capital funding, the more severe this risk is. While grants and senior government funding reduce the burden on ratepayers, they are considered an unsustainable revenue source. The Township will be more vulnerable to changes in provincial and federal policy and funding programs. Investment in assets may be limited by availability of grants and consequently investment may not occur when optimal and/or to the most critical assets.	High	1
		Low	2
		Moderate	3
Increased Infrastructure Backlog	The Township's current average annual capital investment is much less than the average annual capital requirement. Therefore, every year assets are underfunded, and lifecycle management is not optimal. Reduced and/or deferred lifecycle activities threaten reliability and increase the potential for costly (and unbudgeted) repairs to maintain service. This risk is most severe under scenario 1 where the funding gap persists, while it is least severe under scenario 2 where the funding gap is eliminated in year 20 and moderately severe in scenario 3 as its reduced substantially by year 20.	High	1
		Low	2
		Moderate	3
Increased Rate of Asset Failure	Underinvestment in assets will result in a lower average condition and an increased rate of asset failure. This will affect the reliability of infrastructure, and the quality of service provided. Conditions are projected to decline most severely under scenario 1; therefore, rates of failure are anticipated to be highest.	High	1
		Moderate	2
		Low	3
Increased Severity of Asset Failure	Underinvestment in assets is correlated to an increased severity of asset failure. This may mean that assets are beyond the point of repair and require premature replacement. In some instances, this may result in a period where the Township does not have functional assets that are critical to their operations. Conditions are projected to decline most severely under scenario 1; therefore, rates and chances of severe failure are anticipated to be highest. In contrast, higher investment reduces the severity of this risk.	High	1
		Moderate	2
		Low	3

In addition to the above noted qualitative risks, there are measurable risks held by each asset. Risks are quantified based on the respective probability and consequence of asset failure models outlined in Appendix E: Risk Rating Criteria. Risk scores are measured out of 25, with a higher number representing more severe risk. Table 10 below summarizes the weighted average start, average, and end risk values by scenario. Please note risk start represents the risk score at the end of year one, and risk end represents the risk score at the end of the last year of analysis (typically 2100 or 2125). This extended period of analysis is used to ensure each asset completes at least one iteration of replacement.

Table 10: Quantitative Risk Scores by Proposed LOS Option

Scenario Name	Average Risk	Risk Start	Risk End
1. Current Funding	13.97	7.41	14.38
2. 100% Requirements	10.32	7.41	9.31
3. 75% of Requirements	11.33	7.41	11.04

This table indicates that across all periods, scenario 2 (100% Requirements) holds the lowest weighted average and end risk scores and scenario 1 (Current Funding) holds the highest weighted average and end risk values. Scenario 3 (75% of requirements) shows mid-performance outcomes.

Risk overtime has been modelled for each asset category and scenario. Summary graphs for each asset category are provided in Appendix C: PLOS Scenario Comparisons. Summary graphs for the road network are provided below for illustration and commentary purposes. Typically, risk changes over time for each scenario as follows:

Scenario 1 (Current Funding): Condition and risk projections are the lowest performing of all three scenarios. The lower the percentage of the average annual requirement (AAR) funded and the shorter the average estimated useful life (EUL) of the group of assets, the more quickly conditions fall and risk rises.

Scenario 2 (100% Requirements): Comparing all scenarios, condition and risk projections are best. Under this scenario, risks are lowest across time (with brief exception). Risks gradually rise in the first 10 or so years due to the phase in approach where funding levels are increased each year until the target (100% of requirements) is achieved in year 20.

Scenario 3 (75% Requirements): Both condition and risk outcomes for scenario 3 (75% requirements) show mid-ranking outcomes, however generally performance is closer to scenario 2(100% requirements) than scenario 1 (current funding). Risks gradually rise and conditions generally fall in the first 10 or so years due to the phase in approach where funding levels are increased each year until the target (75% of requirements) is achieved in year 20.

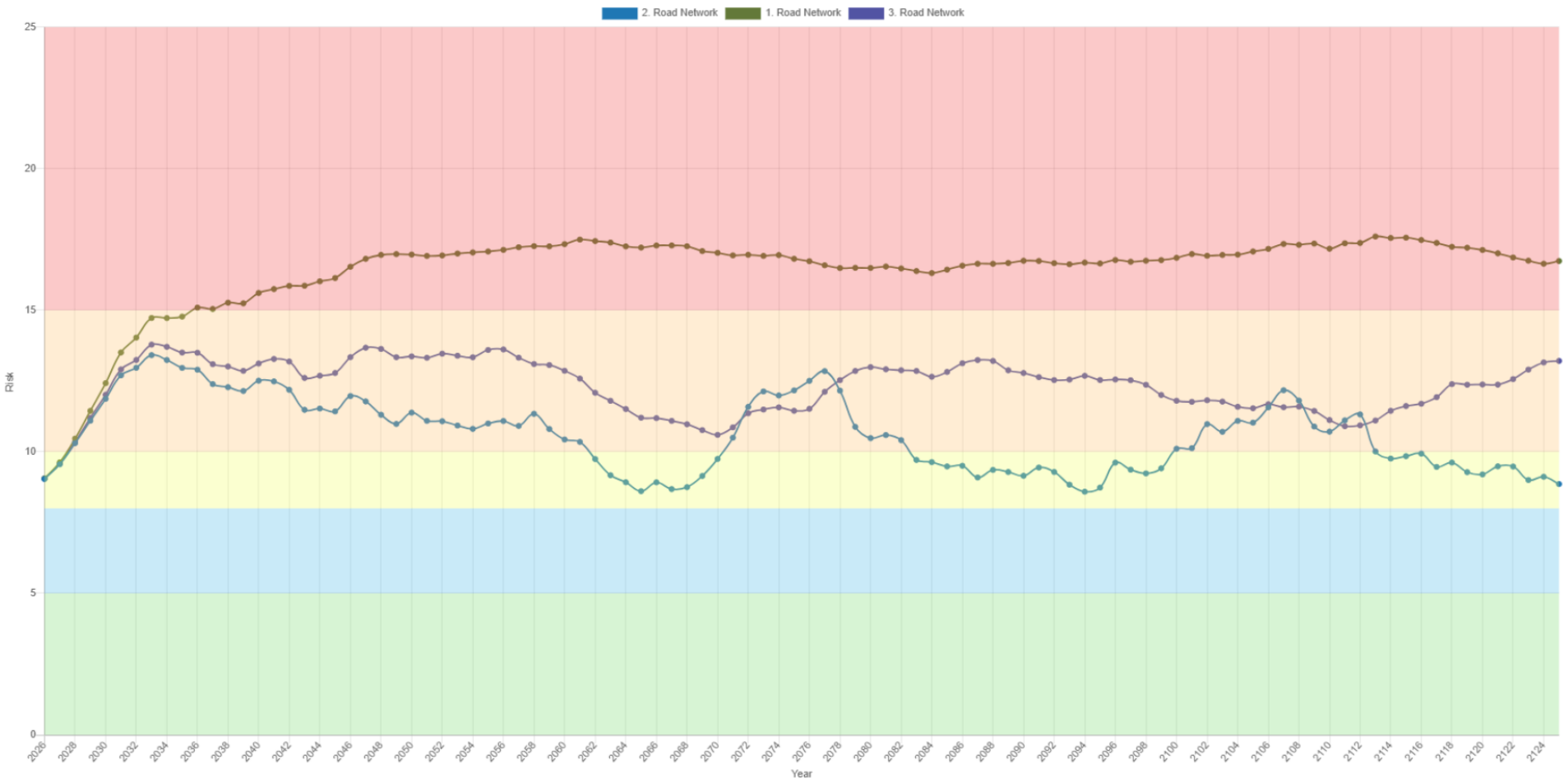


Figure 17: Roads Risk Projections by Scenario

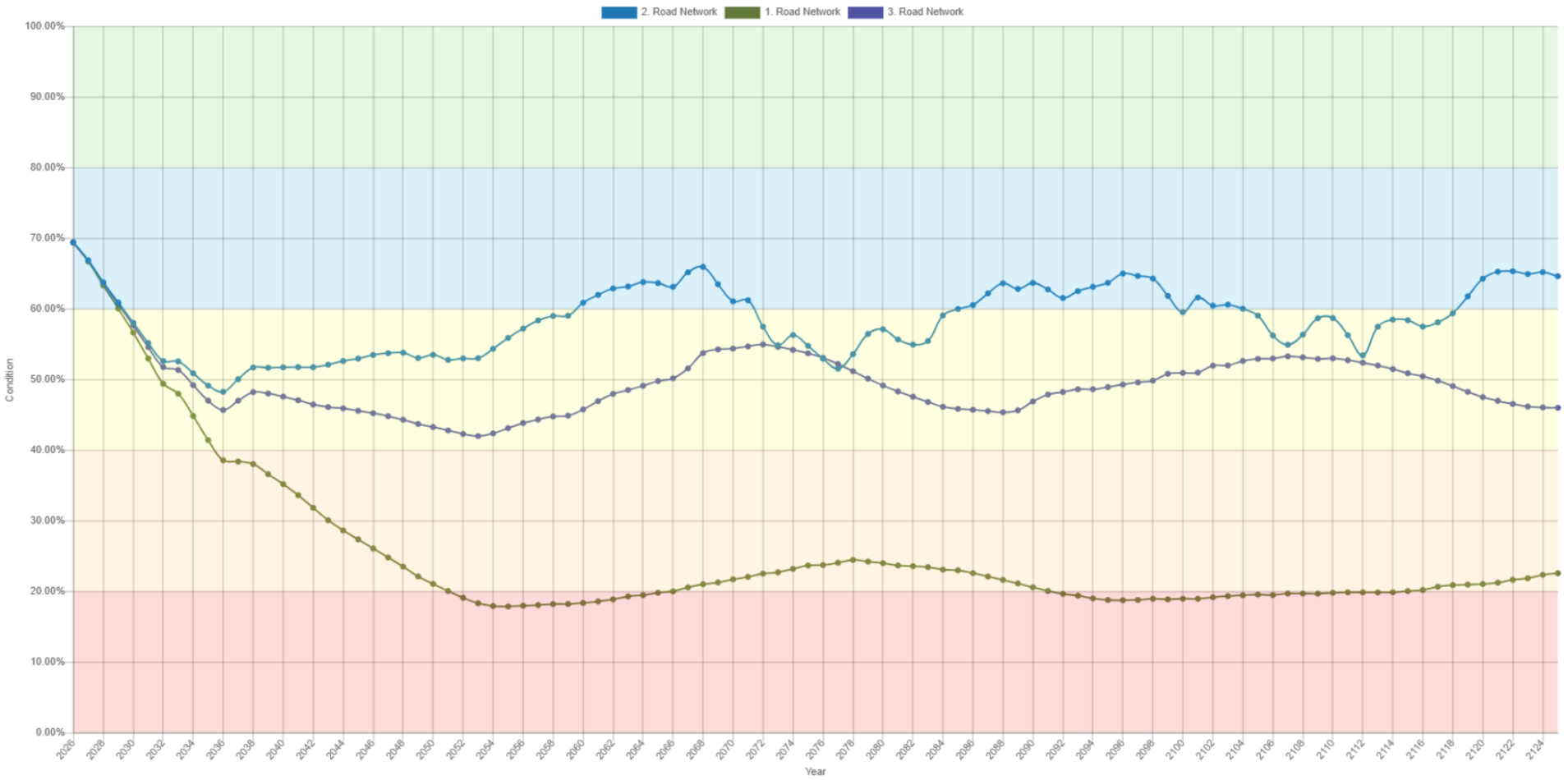


Figure 18: Roads Condition Projections by Scenario

Affordability

The overall increases required from current funding levels vary by scenario. Table 11 below summarizes the capital funding increases required by scenario and indicates that increases are lowest for scenario 1 (maintain investment), second highest for scenario 3 (75% Requirements) and highest for scenario 2 (100% of requirements).

Table 11: Scenario Affordability Comparison

Scenario	Annual Service Level Deficit: Tax	Tax Impact[2]	Annual Service Level Deficit: Rate	Rate Impact[3]	Affordability Rank
1: Maintain Investment	$0		$0		1 (most)
2: 100% Requirements	$9,589,000	3.2%	*Water* $1,324,000	4.0%	3 (least)
			Sanitary $454,000	1.6%	
3: 75% Requirements	$6,353,000	2.3%	*Water* $921,000	2.9%	2
			Sanitary $319,000	1.1 %	

Please Note: The above table does not include Benefit to Existing (BTE) costs, and so does not align to the impacts outlined in the Financial Strategy section. It also does not include inflationary costs adjustments which are required under any scenario.

Some key considerations when reviewing affordability information for all proposed LOS options are:

- Like all municipalities, the Township's reliance on a limited set of revenue tools (taxes, user rates, OCIF, and CCBF) constrains its financial flexibility. As a result, significant increases in funding requirements must be addressed primarily through local revenue generation, placing pressure on taxpayers and ratepayers. The revenue sources available to the Township are not expected to change in the future.
- The Township recognizes that due to affordability constraints under any scenario, tax and/or rate increases would require some level of funding phase-in. This means that rather than a one-time increase in taxes or rates, increases would occur each year for several years. Phase-in funding timelines of 5,10,15, and 20 years are explored for the selected proposed LOS in Section 6: Financial Strategy.

[2] This is based on the reported increase occurring each year for 20 years. Inflationary adjustments are not reflected in the reported value.
[3] This is based on the reported increase occurring each year for 10 years. Inflationary adjustments are not reflected in the reported value.

The Financial Strategy (Section 6) provides financial details including a strategy to collect the investment required to support the proposed LOS option selected.

Achievability

The ability to execute on any of the proposed LOS options is constrained by several factors at varying degrees of impact. These constraints are identified and defined below:

1. **Public and Political Acceptability**: While strong justifications may demonstrate the need and value of increasing capital investment to support proposed LOS, adoption often faces significant resistance due to the tax/rate impacts, construction disruptions, and changing priorities across election cycles. At the time of this reports publication a municipal election was upcoming, making it a particularly relevant constraint.
2. **Procurement & Approval Timelines:** Municipal processes such as council approval, public consultation, and procurement rules can slow delivery of capital investment in the Township's assets. This may negatively impact investment timelines required under scenarios 2 or 3.
3. **Inflation and Cost Escalations:** construction inflation has been particularly volatile over the last several years. This has caused rapid increases in material costs associated with many infrastructure assets in addition to labor cost escalations and bids significantly greater than estimates. Even if funding increases are secured with inflationary adjustments included, the inflationary estimates may be less than actual inflation levels. This may affect the scope of work that can be completed.
4. **Staff and Technical Capacity:** The ability to execute additional projects beyond current levels requires staff such as engineers, project managers, procurement and legal staff. While this impact can be reduced by external consultants, there remains a need for internal project oversight and management, and this may become a limiting factor.
5. **Consultant and Contractor Market Constraints:** The availability of consultants, construction contractors and specialized trades to complete infrastructure projects may be less than the demand. This imbalance of supply and demand may lead to higher bid prices, fewer bids, and/or project delays due to scheduling backlogs that can inhibit the ability to execute the number and/or scale of projects required.

Each of the above factors are relevant to each proposed LOS option at varying degrees. As summarized in Table 12 below, these constraints are most acute for scenario 2 (100% requirements) but present for all scenarios, including scenario 1 (current funding). The ranking in Table 12 is based on the following definitions:

Low: The factor is anticipated to be an impediment; however, adoption and implementation is expected to be achievable without serious limitations.

Moderate: The factor is anticipated to be an impediment to the execution of project scale and/or timeline required by the scenario. Some adjustments (i.e. staff assignment) to internal operations or strategies (i.e. procurement) may be required to support.

High: The factor is anticipated to require changes to the Township's operation, processes, and/or standards to support implementation of the scenario. For example, procurement policy changes may be required to mitigate any existing limitations the policy may pose.

Very High: The factor will require multiple (and most likely significant) changes to operations, processes, and standards to support.

Table 12: Achievability Factors

Factor	1: Maintain Current Investment	2: 100% Requirements	3: 75% Requirements
Public and Political Acceptability	Low	High	Moderate-High
Procurement & Approval Timelines	Low	Moderate-High	Moderate-High
Inflation and Cost Escalations	Moderate	Very High	High
Staff and Technical Capacity	Low	Moderate	Low - Moderate
Consultant and Contractor Market Constraints	Low	Moderate	Low- Moderate

4.4 Selected Proposed LOS

The three above noted scenarios were analyzed and the results were reviewed with Administration. Administration considered several key factors in their selection, chiefly:

- Scenario 1 (current Investment) clearly demonstrated that the Township cannot continue with current funding levels due to the severe decline in condition and increases in risks that are projected and the associated risks these carry.
- Scenario 2 (100% Requirements) offers the best outcomes in condition and risk and thereby the lowest liabilities to the Township, however, they come at the highest costs. Administration did not believe that sustained council support over the 20-year phase in timeline would be realistically obtained.
- Scenario 3 (75% Requirements) provides for significant improvements from current funding levels that in the long-term project improvements in condition and reductions in risk relative to the current funding model. Further, Administration felt that the additional risks and liabilities associated with Scenario 3 (75% Requirements) in comparison to Scenario 2 (100% Requirements) have opportunity for mitigation. Notably:
    - **Improved & Updated Condition Assessment Information:** Regular assessments of assets improve the Township's extent and accuracy of knowledge about condition and recommended interventions. This generally leads to more effective risk-based decisions, more optimized investment (i.e. avoid unnecessary investments), and reduced rates of asset failure. For core assets, the Township should focus on their storm and sanitary networks where the percentage assessed is lowest. Additionally, the Township should focus on updates to less recent assessments.
    - **Rehabilitation Strategies:** Rehabilitation is often a more cost-effective approach to replacement, while still offering notable condition improvements. The Township believes there are opportunities to implement rehabilitation strategies specifically

for bridges and structural culverts (identified through OSIMs), roads (identified through the Township's Roads Strategy), and sanitary and storm mains (via pipe relining also called trenchless rehabilitation). Further exploration of these opportunities may offer capital cost savings that would mitigate the 25% funding deficit under this scenario.

- **Ongoing Report Integration:** The Township regularly commissions asset studies to better understand and validate the current state of the portfolio and investment requirements. The Township will continue integrating this information into their asset management system. This allows for more dynamic decisions, predicated on the best information and expert recommendations.
- **Financial Strategies:** Recognizing that the selected scenario may result in increased rates of unexpected failure the Township will explore financial strategies to reduce risks by having funds available to resolve unexpected failures. These include long-term capital planning to identify cash-flow challenges and build capital reserves to supplement, and ongoing investment strategies of reserve funds as a strong fiscal management practice. Further, the Township will continue pursuit of grant funding opportunities wherever possible.

Based on the information presented, and considering the following additional factors, Administration recommends the following proposed LOS option:

Scenario 3 (75% Requirements)

4.5 Proposed Levels of Service

The following tables reflect current LOS performance for the year 2025 and proposed LOS for a 10-year period thereafter. Comparing these LOS values over time will enable the Township to assess whether service performance and asset conditions are improving, stabilizing, or declining year-over-year.

4.5.1 Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by each asset category.

The Township anticipates that qualitative community LOS will change in this period in parallel with technical LOS. For example, if the average condition of assets declines the community LOS, which describes condition, will reflect a lower average condition. All asset categories will see adjustments to their technical LOS over time, with most changes due to natural degradation of assets and the level of investment they receive.

Table 13 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2025)
	Road Network	
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity.	Please refer to Appendix D for a map of the road network.
Quality	Description or images that illustrate the different levels of road class pavement condition.	Every road section receives a Pavement Condition Index (PCI) rating (0-100). The rating incorporates pavement roughness measurements and surface distress (type, quantity, severity). Ratings are categorized into 5 general qualitative descriptors as detailed below. • Very Good- 75 PCI and greater • Good- 61 PCI and greater

Service Attribute	Qualitative Description	Current LOS (2025)
		• Fair- 51 PCI and greater • Poor -40-50 PCI • Very Poor <40 PCI
Bridges & Culverts		
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport rolling stock, motor rolling stock, emergency rolling stock, pedestrians, cyclists).	Most of the Township's structures do not have loading or dimensional restrictions meaning that most traffic, including heavy transport, motor rolling stock, emergency rolling stock and cyclists can be supported.
Quality	Description or images of the condition of bridges and culverts and how this would affect use of the bridges.	Please refer to Appendix D for photos of bridges in various conditions.
Water Network		
Accessible & Reliable	Description, which may include maps of the user groups or areas of the municipality that are connected to the municipal water system.	Please refer to Appendix D for a map of the water network.
	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	Please refer to Appendix D for a map of the water network. All properties with municipal water service have fire flow.
Reliability	Description of boil water advisories and service interruptions.	During the reporting period, service interruptions due to watermain breaks result in approximately 20 homes being affected for one day for a total of 20 connection days. There were no boil water advisories in 2025.
Sustainable	Description of the current condition of the water network and the plans that are in	Except for some rolling stock and equipment, the condition of the water network is age-based and ranges by

Service Attribute	Qualitative Description	Current LOS (2025)
	place to maintain or improve the provided level of service	segment; and all segments an average condition rating of fair or good. Water network assets are replaced in coordination with other projects (i.e., roads) with additional considerations for affordability and health and safety impacts.
Sanitary Network		
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system.	Please refer to Appendix D for a map of the wastewater network.
Sustainable	Description of the current condition of the wastewater network and the plans that are in place to maintain or improve the provided level of service	The condition of the sanitary network is in good overall. Where possible, trenchless relining is performed, and assets are replaced as required to maintain the quality and performance of the system.
Safe & Regulatory	Description of how stormwater can get into sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes.	Stormwater can enter the sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g., weeping tiles). In the case of heavy rainfall events, sanitary 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 sanitary 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 municipality follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers. These standards have been determined with

Service Attribute	Qualitative Description	Current LOS (2025)
		consideration of the minimization of sewage overflows and backups.
Reliability	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes.	The Township does not own any combined sewers.
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches.	
Stormwater Network		
Scope	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	Please refer to Appendix D for a map of the stormwater network.
Sustainable	Description of the current condition of the stormwater network and the plans that are in place to maintain or improve the provided level of service	The Storm Network is in overall fair condition. Administration performs regular visual inspections to ensure that assets are performing optimally to maintain the desired level of service. When necessary, Administration employs appropriate lifecycle strategies (i.e., trenchless relining, maintenance, replacement) to assets. Currently about 30% of stormwater mains and 100% of stormwater ponds are assessed for condition.

Service Attribute	Qualitative Description	Current LOS (2025)
Buildings		
Accessible & Reliable	List of facilities that meet accessibility standards and any work that has been undertaken to achieve alignment.	All facilities currently meet AODA accessibility standards. The Township's facilities are audited by an accessibility professional. Any deviations from current standards are noted and action plans are taken to remedy the deficiencies. The Township is also part of an accessibility consortium of Niagara municipalities where legislative changes are reviewed and discussed.
Safe & Regulatory	Description of monthly facilities inspection process.	Inspections of major facility components (i.e. HVAC) and any legislative requirements (i.e. exit lighting, fire extinguishers) are inspected monthly. Any deficiencies in minor facility components are reported by the facility occupants to the facility's manager.
Affordable	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on municipal facilities.	Maintenance is performed on a regular basis while rehabilitation and replacement activities are contingent upon budget considerations.
Sustainable	Description of the current condition of municipal facilities and the plans that are in place to maintain or improve the provided level of service.	**Very Good & Good (60-100):** considered to be in good-excellent condition, and repair work is not required in the short term. **Fair (40-59):** considered to be in fair condition. Repair work is ideally scheduled to be completed within the next 5 years. **Poor and Very Poor (< 40):** considered to be in poor to very poor condition with lower numbers representing structures nearing the end of
Machinery & Equipment		

Service Attribute	Qualitative Description	Current LOS (2025)
Safe and Reliable	Description of equipment inspection process and any licensing requirements for operators	Administration performs visual inspections on a regular basis as the equipment is being utilized. General maintenance is performed as required. Rehabilitation and replacement are
Sustainable	Description of the current condition of municipal equipment and the plans that are in place to maintain or improve the provided level of service	**Very Good & Good (60-100):** considered to be in good to very good condition, and repair work is not required in the short term. **Fair (40-59):** considered to be in fair condition. Repair work is ideally scheduled to be completed within the next year. **Poor & Very Poor (< 40):** considered to be in poor to very poor condition with lower numbers representing equipment nearing the end of their service life. The repair of these structures is best scheduled as soon as possible. Most pieces of equipment have an average condition rating of fair.
Rolling Stock		
Safe and Reliable	Description of rolling stock inspection process and any licensing requirements for operators.	Operators perform visual inspection of all rolling stock prior to driving them. All rolling stock undergo a semi-annual inspection and maintenance. All CVOR regulations are adhered to. All operators carry at minimum a DZ license, while some operators have an AZ license.
Sustainable	Description of the current condition of municipal rolling stock and the plans that are in place to maintain or improve the provided level of service.	Overall, the Township's fleet has an average condition rating of fair: **Very Good and Good (60-100):** considered to be in good to very good condition, and repair work is not required in the short term. **Fair (40-59):** considered to be in fair condition. Repair work is ideally scheduled to be completed within a few days.

Service Attribute	Qualitative Description	Current LOS (2025)
		Poor and Very Poor (< 40): considered to be in poor to very poor condition with lower numbers
	Land Improvements	
Sustainable	Description of the current condition of land improvements and the plans that are in place to maintain or improve the provided level of service	Land Improvements are in overall good condition. Administration performs regular visual inspections to ensure the assets are performing optimally to maintain the desired level of service.

4.5.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the current technical level of service provided by the Township's assets. Proposed LOS are reported based on Scenario 3: Full Lifecycle Funding

Please Note: Some level of variation is expected between actual and below noted projected values due to potential differences in projected deterioration rates compared to actuals, unexpected natural events, and/or other factors (e.g. updated condition assessments). Further, the projections assume that the funding increases are successfully implemented throughout the period of analysis. If this does not occur, projected values are not expected to be realized.

Table 14 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2025)	Projected LOS (2025-2034)
	Road Network		
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area in the municipality (km/km2)	0.45 km/km^2	Current +/- 5%
	Lane-km of collector roads (MMS classes 3 and 4) per land area in the municipality (km/km2)	0.29 km/km^2	
	Lane-km of local roads (MMS classes 5 and 6) per land area in the municipality (km/km2)	0.25 km/km^2	
Quality	For paved roads in the municipality, the average pavement condition index value.	Good: 69%	Good: % (2025) to Good: 79% (2034)
	For unpaved roads in the municipality, the average surface condition (e.g. excellent, good, fair or poor).	Good: 61%	Fair 59% (2025) to Good: 36% (2034)
	Average condition of sidewalks in the Township	Good: 72%	
	Bridges & Culverts		
Scope	% of bridges in the municipality with loading or dimensional restrictions.	0%	Current +/- 5%
Quality	For bridges in the municipality, the average bridge condition index value.	Good: 70%	69% (2026) to 55% (2035)
	For structural culverts in the municipality, the average bridge condition index value.	Good: 68%	69% (2026) to 55% (2035)

Service Attribute	Technical Metric	Current LOS (2025)	Projected LOS (2025-2034)
Water Network			
Scope	Percentage of properties connected to the municipal water system	100%[4]	Current
	Percentage of properties where fire flow is available	100%	Current
Reliability	Number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system	20 vs. 2624	Current +/- 5%[5]
	Number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0 vs. 2624	Current +/- 5%
Sanitary Network			
Scope	% of properties connected to the municipal wastewater system	100%	Current up to + 5%
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	The Township does not own combined sewers.	N/A
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	9 vs. 2609	Current +/- 5%
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	N/A[6]	

[4] Reported values are based on urban areas only where municipal water services are available.
[5] The Township does not intend to have any adverse water or wastewater events, but it can be anticipated that some may occur. Future projections consider this possibility.
[6] The Township does not provide any wastewater or water treatment. This is instead completed by the Region of Niagara.

Service Attribute	Technical Metric	Current LOS (2025)	Projected LOS (2025-2034)
Stormwater Network			
Scope	% of properties in municipality resilient to a 100-year storm	TBD	Current up to + 5%
	% of the municipal stormwater management system resilient to a 5-year storm	100%	Current
Buildings			
Reliability	# of unplanned facility closures (days)	2-3[7]	Current +/- 50%
Safe & Regulatory	# of service requests about unsafe conditions	0	Current + up to 5
Affordable	Total equivalent kWh energy consumption / ft_2 of all buildings and facilities	1,618,578	Current +/- 10%
Sustainability	% of Facilities that are in good or very good condition	80%	85% (2026) to 22% (2035)
	% of Facilities that are in poor or very poor condition	14%	22% (2026) to 58% (2035
Machinery & Equipment			
Safe & Reliable	# of unscheduled downtime days	7	Current +/- 50%
Sustainability	% of rolling stock assets that are in good or very good condition	52%	30% (2026) to 31% (2035
	% of rolling stock assets that are in poor or very poor condition	26%	50% (2026) to 60% (2035
Rolling Stock			
Safe & Reliable	# of unscheduled downtime days	14	Current +/- 50%
Sustainability	% of rolling stock assets that are in good or very good condition	64%	42% (2026) to 32% (2035
	% of rolling stock assets that are in poor or very poor condition	16%	45% (2026) to 55% (2035
Land Improvements			

[7] Reported instances were due to power outages affecting ice surfaces. While the Township does have an emergency generator it does not support ice refrigeration.

Service Attribute	Technical Metric	Current LOS (2025)	Projected LOS (2025-2034)
Safe & Reliable	# of unscheduled downtime days	0	Current + up to 15
Sustainability	% of land improvement assets that are in good or very good condition	48%	63% (2026) to 6% (2035
	% of land improvement assets that are in poor or very poor condition	8%	7% (2026) to 79% (2035

Strategies

5. Growth

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

5.1 Growth Assumptions

Several plans and studies were reviewed to identify the long-term population growth projections for West Lincoln Township. The studies reviewed are as follows:

- West Lincoln's Official Plan
- Development Charges Background Study: West Lincoln Township

Key details and findings from the above-mentioned studies are as follows:

- The Development Charges Study forecasts a net population increase of 7,119 persons over the 10-year period (2024 to 2034) and an increase of 21,759 persons over the longer-term buildout period (2024 to 2051).
- To accommodate the projected growth, the Township requires an increase of 2,858 residential units over the 10-year period (2024–2034).
- Over the longer-term buildout period from 2024 to 2051, a total increase of 8,735 residential units is projected. Almost all residential (99%) and most non-residential development (93%) are projected to occur within the Township's Urban area, specifically the Smithville Urban Settlement Area.
- The Official Plan projects a total increase of 1,150 new jobs by 2031, and a total of 4,930 jobs Township-wide. Agriculture is projected to remain the primary economic activity in the Township, while the largest segment of the local labour force is involved in manufacturing.

5.2 Impact of Growth on Lifecycle Activities

O. Reg. 588/17 requires that municipality with a population of less than 25,000 or more as reported by Statistics Canada in the most recent census report on the following:

i. Assumptions regarding changes in future population and economic activity
ii. How those assumptions are considered in the lifecycle and financial management strategies of the plan

Key assumptions regarding future population and economic activity are described in section 5.1 above. These assumptions are considered in the financial strategy by including the estimated cost of growth that is to be funded by the existing tax and rate base. These costs are estimated based on the Township's most recent Development Charge Study, as required by the Development Charges Act (D.C.A), 1997.

Section 5(1) 6 of the D.C.A. provides that, "the increase in the need for service must be reduced by the extent to which an increase in service to meet the increased need would benefit existing development." Common examples of Benefits to Existing (BTE) include:

- Repair or unexpanded replacement of existing assets in need of repair
- Increase in average service level of quantity or quality
- Providing services where none previously existed
- The elimination of a chronic problem not created by growth

Based on these criteria, the Development Charges Background Study identified projects with BTE and determined their estimated associated cost share. As these costs cannot be recovered from Development Charges they are considered a cost of growth. The total average annual BTE costs over a 5-to-20-year period are summarized Table 15 below.

Table 15: BTE Costs over a 5-20 Year Period

	Average Annual Capital Cost ($)			
Funding Category	**5 Year (2026-2030)**	**10 Year (2026-2034)**	**15 Year (2026-2039)**	**20 Year (2026-2044)**
Tax Funded	585,788	292,894	194,756	146,067
Rate Funded: Water	112,040	56,020	128,167	96,125
Rate Funded: Sanitary	13,800	6,900	7,947	5,960

The acquisition cost of growth-related infrastructure is largely funded by development charges. Development charges are based on By-law 2024-70 and account for the identified infrastructure expansion requirements and associated costs which inform the established rates determined most recently as of October 29, 2024, through the Development Charges Background Study.

Lifecycle cost following asset acquisition are funded by the increased tax and user-fees collected from newly developed properties.

Please Note: At the time of publication, Bill 185, and potential changes in development revenue municipalities receive were not confirmed and therefore are not reflected in the figures referenced within this plan.

6. Financial Strategy

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Township of West Lincoln to identify the financial resources required to meet the selected LOS. As detailed in section 4.4 this is: Scenario 3 (75% 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. Proposed Levels of Service Targets
    d. Requirements of anticipated growth (please refer to Section 5)
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. 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.

6.1 Annual Requirements & Capital Funding

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

This plan identifies the financial requirements to meet the identified proposed LOS based on the financial requirements for existing assets. The financial plan considers and accounts for traditional and non-traditional sources of municipal funding.

6.1.1 Proposed LOS: Annual Requirements

The annual requirements represent the annual allocation required to meet the proposed LOS. For the West Lincoln Township, the proposed LOS provides for an annual capital investment of $9,708,000 for tax funded assets and $1,615,000 for rate funded assets. Generally, this means that under this proposed LOS assets are being replaced later than recommended[8]. However, it should be noted that this level of investment is a significant increase from the current level of investment ($3,355,000 tax funded assets and $375,000 rate funded assets) and therefore the proposed LOS is still higher than it would be if existing levels of capital funding continued.

For most non-core asset categories, the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset. However, for the Road Network lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of assets.

The annual requirements represent the amount the Township should allocate annually to each asset category to meet the proposed LOS. In total, the Township must allocate approximately $11.3 million annually to address capital requirements for the assets included in this AMP.

6.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $3.7 million towards capital projects per year. Given the annual capital requirement of $11.3 million, there is currently a funding gap of $7,592,000 annually.

6.2 Funding Objective

[8] Recommendations are informed by each assets Estimated Useful Life (EUL).

6.2.1 Existing Assets

We have developed a scenario that would enable Township of West Lincoln to achieve full funding within 5-20 years for the following assets:

1. **Tax Funded Assets:** Road Network, Stormwater Network, Bridges & Culverts, Facilities, Machinery & Equipment, Land Improvements, Rolling Stock

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

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

6.3 Financial Profile: Tax Funded Assets

6.3.1 Current Funding Position

The following tables show, by asset category, West Lincoln's average annual asset investment requirements, current funding positions, and funding increases required for the proposed LOS for tax funded assets.

Asset Category	Avg. Annual Require-ment ($)	Annual Funding Available ($)				Annual Deficit
		Capital Reserve	CCBF	OCIF	Total Available	
Bridges & Culverts	1,155,382	252,522	116,737	81,224	450,484	704,898
Facilities	875,429	191,335			191,335	684,094
Land Improvements	244,295	53,394			53,394	190,901
Machinery & Equipment	373,118	81,549			81,549	291,569
Roads Network	6,043,989	1,320,984	610,672	424,896	2,356,552	3,687,437
Rolling Stock	634,914	138,768			138,768	496,146
Storm Network	381,118	83,298			83,298	297,820
Total	**9,708,245**	**2,121,850**	**727,409**	**506,120**	**2,121,850**	**6,352,866**

Table 16 Annual Available Funding for Tax Funded Assets

The average annual investment requirement for the above categories is $9,708,000. Annual revenue currently allocated to these assets for capital purposes is $2,122,000 leaving an annual deficit of $6,352,000. Put differently, these infrastructure categories are currently funded at 34% of the requirements for the proposed LOS selected.

6.3.2 Proposed LOS Funding Requirements

In 2026, the Township of West Lincoln had budgeted annual tax revenues of approximately $11.5 million. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, to meet the selected proposed LOS the following one-time tax increase is required:

Asset Category	Tax Change Required for Proposed LOS
Bridges & Culverts	6.1%
Facilities	5.9%
Land Improvements	1.7%
Machinery & Equipment	2.5%
Roads Network	32.0%
Rolling Stock	4.3%
Storm Network	2.6%
Total Tax	**55.1%**

Table 17 Tax Increase Requirements to Meet Proposed LOS

Any changes in costs and/or revenues over the next number of years should also be considered in the financial strategy. Table 18 below summarizes the infrastructure deficit based on the selected proposed LOS, the costs associated with growth, the change in debt costs over the same period, and the resulting infrastructure deficit. Based on these values, the total increase required is reported over the noted implementation timeframe (i.e. 5, 10, 15, or 20 years).

Implementation Period	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	6,352,866	6,352,866	6,352,866	6,352,866
Annual Growth Costs (BTE)	585,788	292,894	194,756	146,067
Resulting Infrastructure Deficit:	**6,759,484**	**6,333,723**	**6,018,280**	**5,710,601**
Total Tax Increase Required	58.7%	55.0%	52.3%	49.6%
Total Annual Tax Increase Required (Annually)	**9.9%**	**4.7%**	**3.1%**	**2.3%**
Change in Debt Costs	-179,170	-312,037	-529,342	-788,332
Total Annual Tax Increase Required (Annually, Debt Reallocated)	**9.7%**	**4.5%**	**2.9%**	**2.1%**

Table 18 Tax Increase Options 5-20 Years

6.3.3 Financial Strategy Recommendations

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

a) Increasing tax revenues by 2.3% each year for the next 20 years solely for the purpose of phasing in full funding to meet the capital funding requirements under the selected proposed LOS and the growth costs.
b) Allocating the current CCBF and OCIF revenue as outlined previously.
c) Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment[9].
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.
3. These recommended increases would come before any other charges to the budget.

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 $4.4 million for tax-funded categories.

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.

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

6.4 Financial Profile: Rate Funded Assets

6.4.1 Current Funding Position

The following tables show, by asset category, West Lincoln's average annual asset investment requirements, current funding positions, and funding increases required to achieve the selected proposed LOS.

Asset Category	Avg. Annual Requirement	Annual Funding Available		Annual Deficit
		Capital	Total Available	
Water Network	1,210,947	290,227	290,227	920,720
Sanitary Network	404,364	85,617	85,617	318,747
Total	**1,615,312**	**375,843**	**375,843**	**1,239,468**

Table 19 Annual Available Funding for Rate Funded Assets

The average annual investment requirement for the above categories is $1,615,000. Annual revenue currently allocated to these assets for capital purposes is $376,000 leaving an annual deficit of $1,239,468. Put differently, these infrastructure categories are currently funded at 30% of the requirements under the selected proposed LOS.

6.4.2 Proposed LOS Funding Requirements

In 2026, West Lincoln had budgeted annual sanitary revenues of $2,822,000 and annual water revenues of $2,822,000. As illustrated in the table below, without consideration of any other sources of revenue, to meet the proposed LOS the following rate changes are required:

Asset Category	Rate Change Required for Proposed LOS
Water Network	32.6%
Sanitary Network	11.3%

Table 20 Rate Increase Requirements for Fund Selected Proposed LOS

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 for up to 20 years:

	Water Network			
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	920,721	920,721	920,721	920,721
Annual Growth Costs (BTE)	112,040	112,040	112,040	112,040
Resulting Infrastructure Deficit:	1,032,761	1,032,761	1,032,761	1,032,761
Change in Debt Costs	0	0	0	0
Total Rate Increase Required	36.6%	36.6%	36.6%	36.6%
Annually:	6.5%	3.2%	2.2%	1.6%

Table 21 Water Rate Increase Options 5-20 Years

	Sanitary Network			
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	318,748	318,748	318,748	318,748
Annual Growth Costs (BTE)	13,800	6,900	7,947	5,960
Change in Debt Costs	0	0	0	0
Resulting Infrastructure Deficit:	332,548	325,648	326,694	324,708
Total Rate Increase Required	11.8%	11.5%	11.6%	11.5%
Annually:	2.3%	1.1%	0.8%	0.6%

Table 22 Sanitary Rate Increase Options 5-20 Years

6.4.3 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 water services revenue by 3.2% and sanitary network revenues by 1.1% each year for the next 10 years solely for the purpose of phasing in funding to meet the proposed LOS and growth funding requirements.
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.
4. These increases differ from the Township's 2025 Water and Wastewater Rate Study. That study includes both operational and capital increases while this plan includes only capital expenditures in funding recommendations.

6.5 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 following graph shows the historical changes to the lending rates:

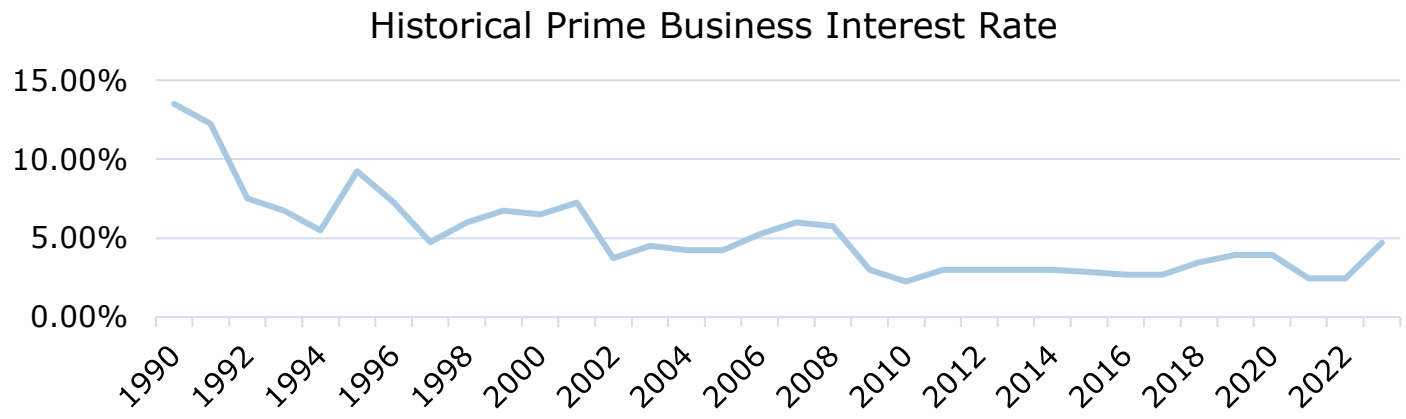


Figure 19 Historical Prime Rate

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

The following tables outline how West Lincoln has historically used debt for investing in the asset categories as listed. As of year-end 2025, there is currently $17.4 million of external debt outstanding for the assets covered by this AMP with corresponding external principal and interest payments of $1,472,000 in 2026. Additionally, West Lincoln has $206,000 annual payments to debt related to the municipal funding requirements towards the Lincoln Memorial Hospital. As this debt does not relate to the asset categories covered in the AMP it has not been included in Table 23 and Table 24 below.

Asset Category	Debt at Dec 31, 2025	Use of Debt in the Last Five Years				
		2021	2022	2023	2024	2025
Bridges & Culverts	72,367	188,153	159,206	130,260	101,313	72,367
Facilities	15,759,871	16,850,000	16,216,667	17,186,893	16,473,382	15,759,871
Land Improvements	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0
Roads Network	1,622,136	900,000	840,000	1,849,040	1,735,588	1,622,136
Rolling Stock	0	0	0	0	0	0
Storm Network	0	0	0	0	0	0
Total Tax Funded	17,454,373	17,938,153	17,215,873	19,166,193	18,310,283	17,454,373
Water Network	0	0	0	0	0	0
Sanitary Network	0	0	0	0	0	0
Total Rate Funded	**0**	**0**	**0**	**0**	**0**	**0**

Table 23 West Lincoln Use of Debt 2020-2024

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2026	2027	2028	2029	2030	2031	2036
Bridges & Culverts	31,007	30,092	14,704	0	0	0	0
Facilities	1,262,631	1,237,447	1,212,958	1,186,406	1,160,998	1,135,773	1,024,150
Land Improvements	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0
Roads Network	178,041	173,780	169,675	165,257	160,996	156,735	135,491
Rolling Stock	0	0	0	0	0	0	0
Storm Network	0	0	0	0	0	0	0
Total Tax Funded	1,471,678	1,441,319	1,397,337	1,351,663	1,321,993	1,292,508	1,159,641
Water Network	0	0	0	0	0	0	0
Sanitary Network	0	0	0	0	0	0	0
Total Rate Funded	0	0	0	0	0	0	0

Table 24 West Lincoln Principal and Interest Payments

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

6.6 Use of Reserves

6.6.1 Available Reserves

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

1. the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
2. financing one-time or short-term investments
3. accumulating the funding for significant future infrastructure investments
4. managing the use of debt
5. normalizing infrastructure funding requirement

By asset category, the table below outlines the details of the reserves currently available to West Lincoln.

Asset Category	Balance at December 31, 2025
Bridges & Culverts	678,415
Facilities	1,580,224
Land Improvements	176,146
Machinery & Equipment	1,179,685
Roads Network	1,170,857
Rolling Stock	1,583
Storm Network	716,722
Total Tax Funded:	5,503,632
Water Network	1,412,830
Sanitary Network	2,292,512
Total Rate Funded:	3,705,342

Table 25 West Lincoln Reserve Balances

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

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

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

7. Recommendations

7.1 Financial Strategies

1 To meet the capital investment requirements based on the selected proposed LOS the following tax and rate changes are recommended:

1.1 Increasing water services revenue by 3.2% and sanitary network revenues by 1.1% each year for the next 10 years solely for the purpose of phasing in funding to meet the proposed LOS and growth funding requirements.

1.2 Increasing tax revenues by 2.3% each year for the next 20 years solely for the purpose of phasing in full funding to meet the capital funding requirements under the proposed LOS selected and the growth costs.

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

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

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

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

5 Continue to apply for project specific grant funding to supplement sustainable funding sources. Leverage reserve fund investment strategies to further the Township's available capital resources.

7.2 Asset Management Practices

1. Continuously review, refine, and calibrate asset data to improve accuracy. In particular:
    a. As asset studies become available, integrate the collected data into the asset registry. This includes critical fields such as replacement and rehabilitation costs, alongside recommendation of lifecycle strategy models. Identify assets with missing asset data (such as road class) and where possible collect this information alongside coinciding asset studies.
    b. Regularly review and update asset replacement costs to ensure that forecasted investment requirements are based on the best and most recent estimates.
    c. When procuring any asset study consider if there are any additional data points of value to collect and incorporate into the asset registry. Such data points may include risk model criteria, data to assist in asset operations (e.g. locational reference data), and/or general asset information otherwise (i.e. attributes). Evaluate the cost-benefit of data collection.
2. Explore rehabilitation strategies, such as trenchless relining, for candidate assets. Consider completing a few small sections to evaluate the effectiveness, appropriateness,

and project viability for other assets. If deemed suitable, adjust the lifecycle strategy of impacted assets to reflect the revised lifecycle strategy.

3. O. Reg. 588/17 requires that the Township's Asset Management Policy be reviewed at least once every five years. The Township's asset management policy should be reviewed to ensure it remains accurate, relevant, and effective.

Appendices

8. Roads Network

The Township's road network comprises the largest share of its infrastructure portfolio, with a current replacement cost of more than $156 million, belonging primarily to paved roads. The Township also owns and manages other supporting infrastructure and capital assets, including sidewalks, streetlights, signs, roadside barriers, and gravel roads.

8.1 Inventory & Valuation

Table 26 summarizes the quantity and current replacement cost of the Township's various road network assets as managed in its primary asset management register, Citywide.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Paved Roads	354,749	Meters	$124,346,663	CPI
Roadside Barriers	11,863	Meters	$6,093,908	CPI
Sidewalks	32,940	Square Meters	$6,167,869	CPI
Signs & Posts	10	Assets	$224,550	CPI
Streetlights	1,088	Assets	$3,529,280	CPI
Unpaved Roads	612,230	Square Meters	$15,851,105	CPI
TOTAL			**$156,213,375**	

Table 26 Detailed Asset Inventory: Roads Network

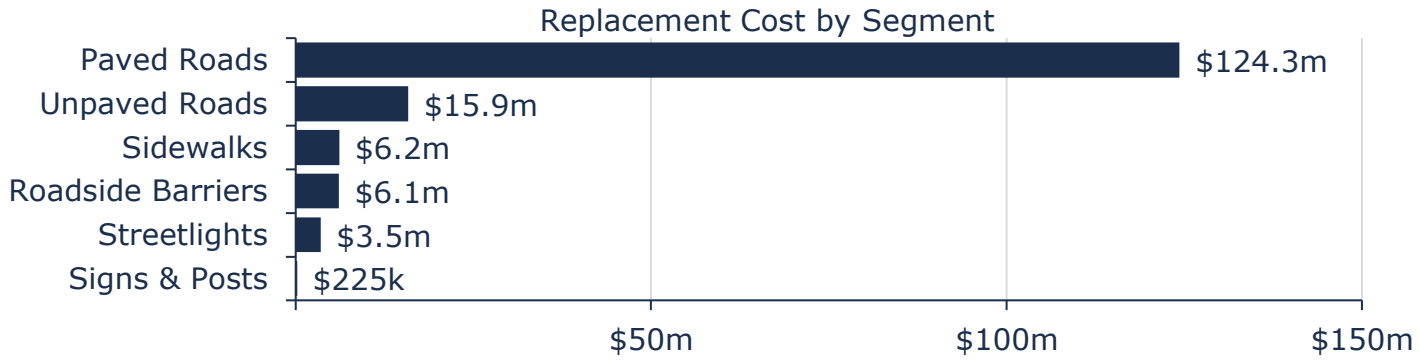


Figure 20 Portfolio Valuation: Roads Network

8.2 Asset Condition

Figure 21 summarizes the replacement cost-weighted condition of the Township's road network. Based on a combination of field inspection data and age, 92% of assets are in fair or better condition; the remaining 8% of assets are in poor to very poor condition. Condition assessments

were available for 92% of assets, based on replacement cost. 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.

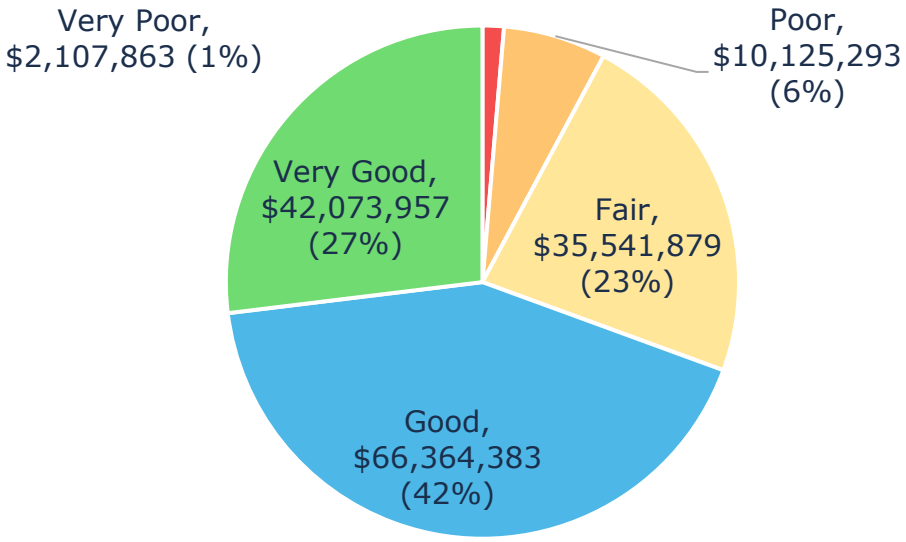


Figure 21 Asset Condition: Roads Network Overall

As illustrated in Figure 22, based on condition assessments, the majority of paved roads are in good or better condition, however, gravel roads are in more moderate conditions.

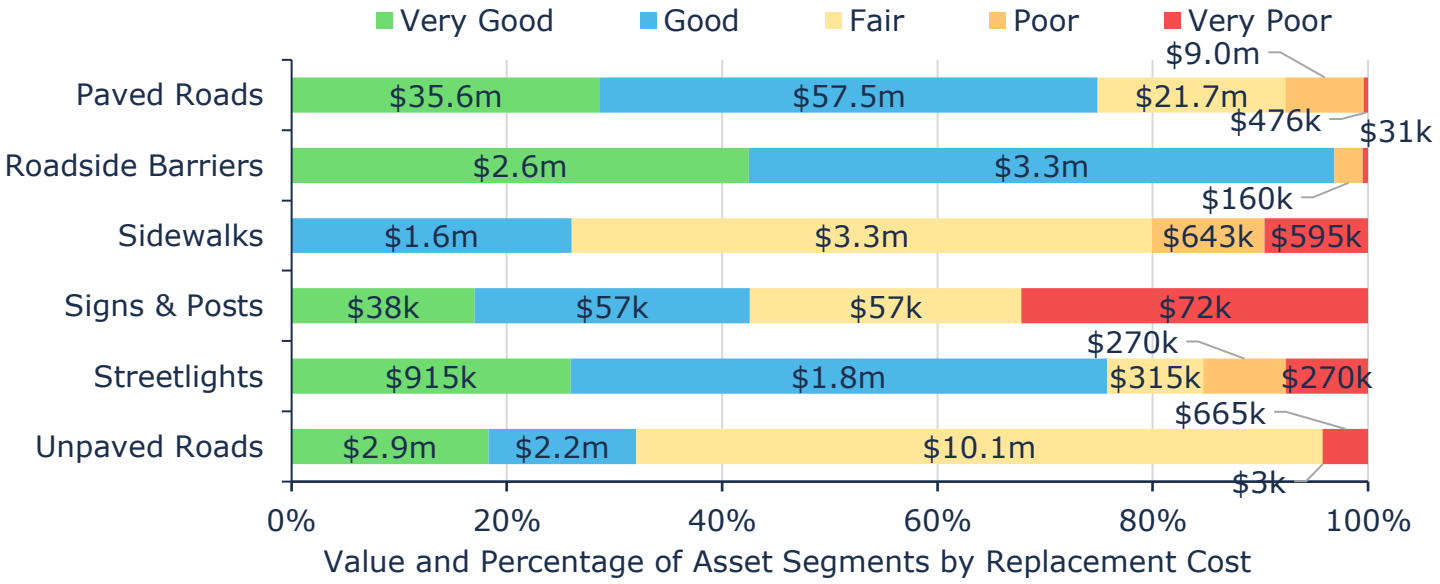


Figure 22 Asset Condition: Roads Network by Segment

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 long-term replacement spikes.

Figure 23 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.

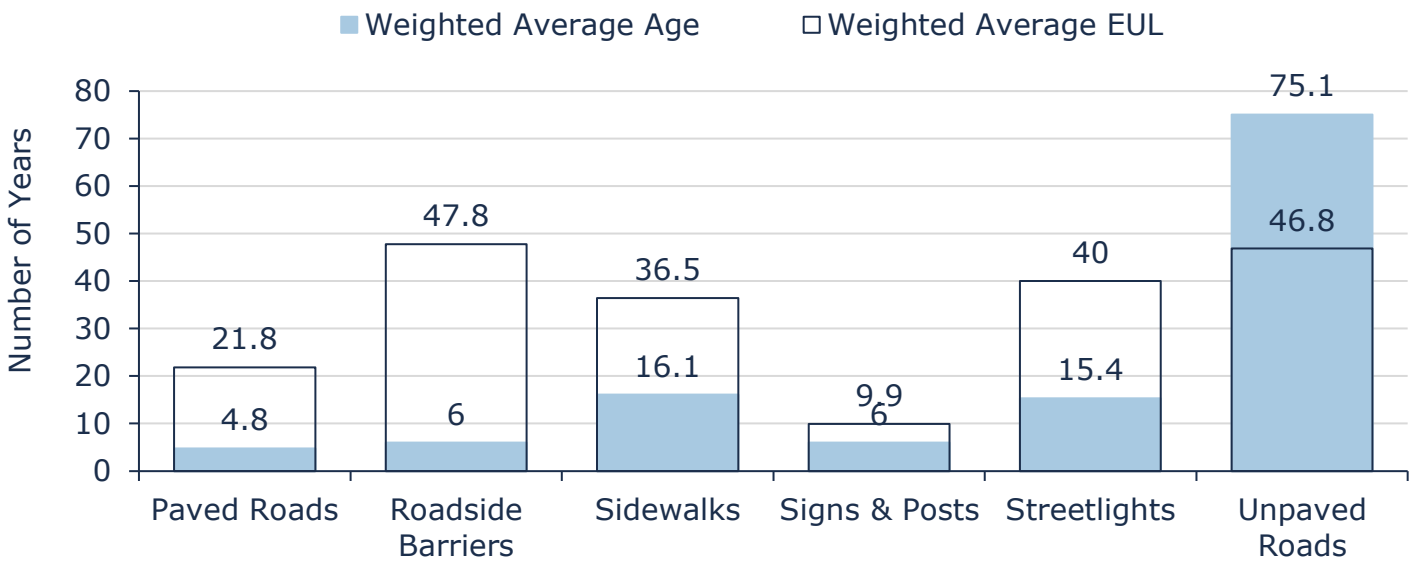


Figure 23 Estimated Useful Life vs. Asset Age: Roads Network

Age analysis indicates that sidewalks, signs, and streetlights are approaching the midpoint of their expected useful lives (EULs), while paved roads and roadside barriers are in early stages. Unpaved roads have exceeded their life expectancy, however, this is likely because of perpetual maintenance and rehabilitation, as outlined in the lifecycle management approach described in the next section. With current and evolving lifecycle strategies, the expected useful lives of both paved and gravel roads can be significantly extended through rehabilitation efforts.

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 and may not reflect in-field asset performance.

8.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including asset's characteristics, location, utilization, maintenance history and environment. The Township manages its road network assets through a combination of proactive and reactive lifecycle management strategies. Assessments are conducted annually to monitor road conditions, while maintenance activities and renewals are prioritized based on asset condition, critical needs, and traffic volumes. The township is working towards expanding its asset management capabilities and incorporating more detailed assessments, with a focus on improving decision-making through data-driven budgeting.

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of HCB, LCB, and gravel roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Paved Roads (HCB)		
Event Name	**Event Class**	**Event Trigger**
Resurfacing (Repave with 1 lift of Asphalt)	Rehabilitation	15 Years (Once)
Full Reconstruction	Replacement	40 Years

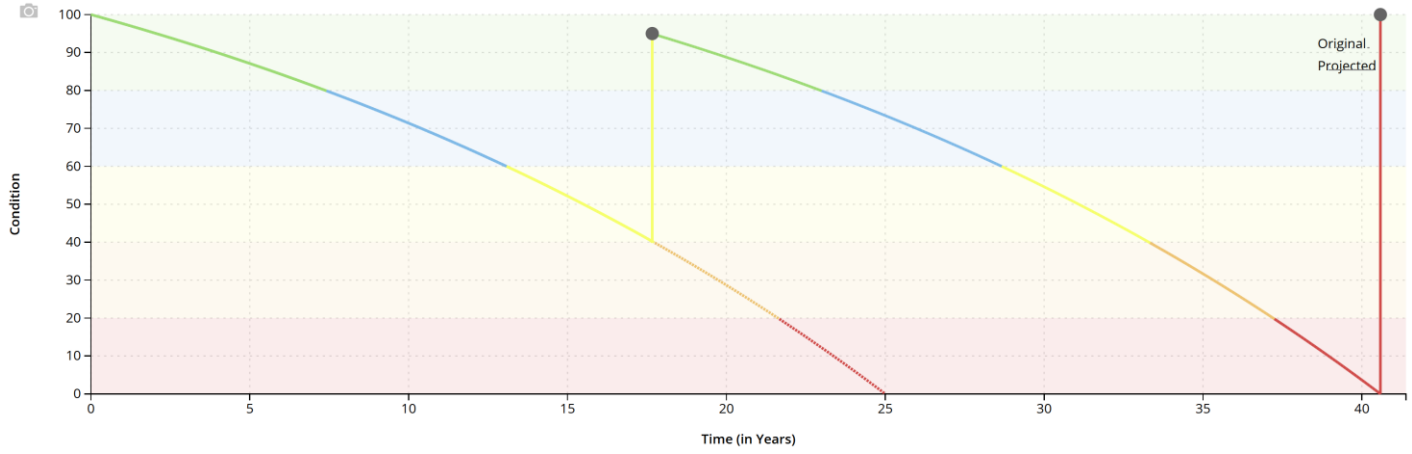


Table 27 Lifecycle Management Strategy: Roads Network (HCB Roads)

Paved Roads (LCB)		
Event Name	**Event Class**	**Event Trigger**
Resurfacing	Rehabilitation	7 Years (4 times)
Full Reconstruction	Replacement	40 Years

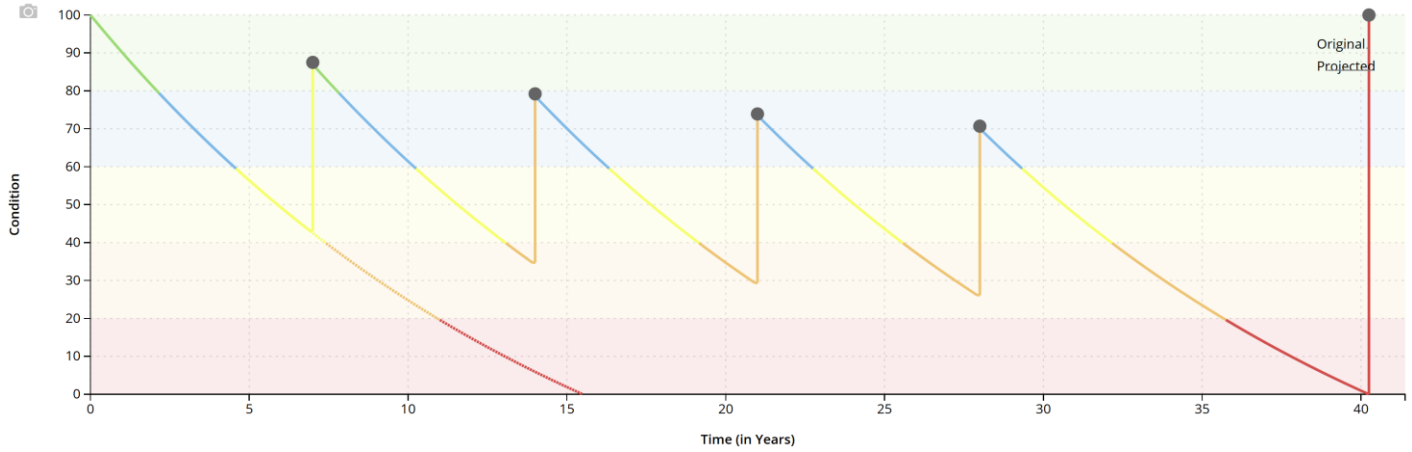


Table 28 Lifecycle Management Strategy: Roads Network (LCB Roads)

Gravel Roads		
Event Name	**Event Class**	**Event Trigger**
Resurfacing (Gravel Resurfacing - 3 Year Cycle)	Rehabilitation	3 Years (9 Times)
Full Reconstruction	Replacement	40 Years

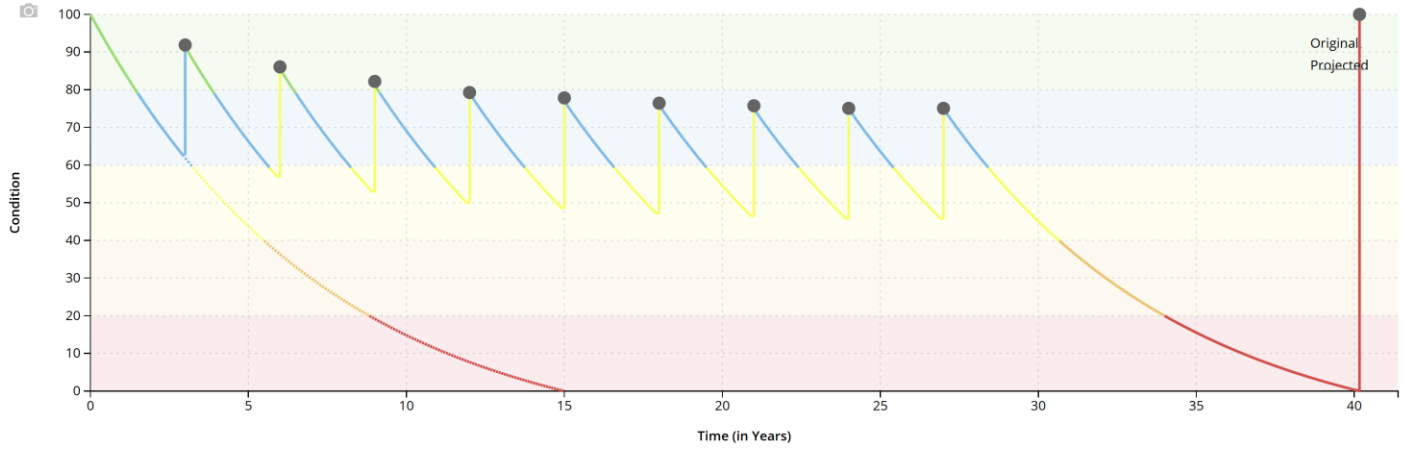


Table 29 Lifecycle Management Strategy: Roads Network (Gravel Roads)

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

Activity Type	Description of Current Strategy
Maintenance	Pothole repairs are completed as needed based on road patrols and public feedback.
	Grading, brushing, and sweeping are conducted to maintain road shape and cleanliness.
	Dust control measures and calcium chloride application are used to mitigate dust.
	Gravel roads require more frequent maintenance than surface-treated roads.
Rehabilitation	High-traffic roads are prioritized for rehabilitation. Rehabilitation activities include resurfacing, grading, brushing, salting/sanding, sealant application, dust control, new paving/pavement, ditching, and adding maintenance layers.
Replacement	Road replacement is triggered when maintenance is no longer feasible, considering factors like road type, maintenance history, and the addition of maintenance layers. High-traffic roads are prioritized for replacement.
Inspection	The latest Roads Needs Study was conducted in 2020 by Jewell Engineering. Additionally, Road assets (surface treated: HCB, and LCB) are assessed annually using a Pavement Condition Index (PCI) to identify maintenance needs.

Table 30 Lifecycle Management Strategy: Roads Network

8.5 Forecasted Long-Term Replacement Needs

Figure 24 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's road network. This analysis was run until 2095 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $8.3 million 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 spikes in capital needs in 2041-2045 and 2076-2080, dominated by paved roads and substantial unpaved roads activities. Since unpaved roads are maintained perpetually, 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 (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.

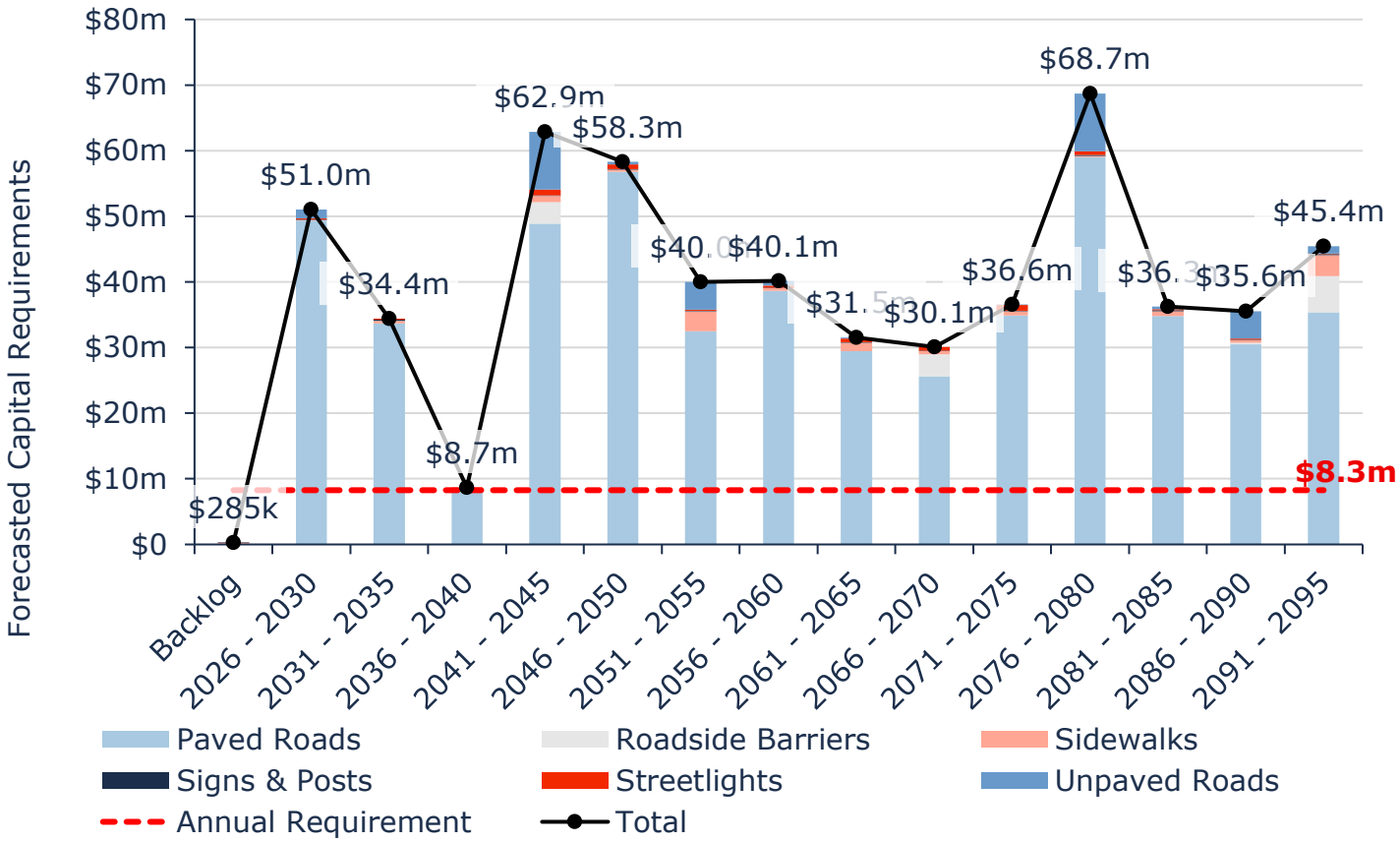


Figure 24 Forecasted Capital Replacement Needs: Roads Network 2026-2095

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

8.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, replacement costs, and speed limit. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** $40,661,466 (26%)	5 - 7 **Low** $35,083,497 (22%)	8 - 9 **Moderate** $5,531,671 (4%)	10 - 14 **High** $47,311,763 (30%)	15 - 25 **Very High** $27,624,978 (18%)

Figure 25 Risk Matrix: Roads Network

9. Bridges & Culverts

The Township's transportation network also includes bridges and major culverts, with a current replacement cost of $104.8 million.

9.1 Inventory & Valuation

Table 31 summarizes the quantity and current replacement cost of bridges and culverts. The Township owns and manages a total of 9,966 square meters of structures.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Bridges	6,651	Square Meters	$70,891,708	CPI
Major Culverts	3,315	Square Meters	$33,957,523	CPI
TOTAL			**$104,849,231**	

Table 31 Detailed Asset Inventory: Bridges & Culverts

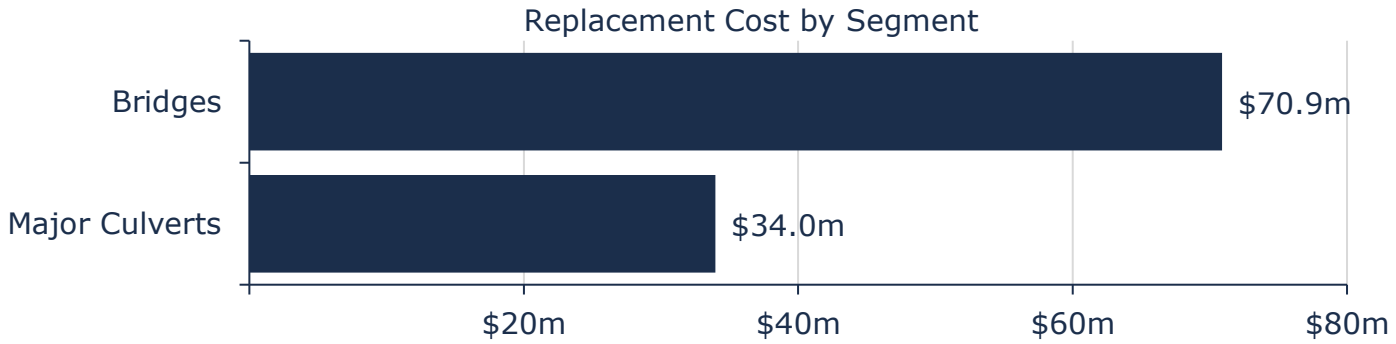


Figure 26 Portfolio Valuation: Bridges & Culverts

9.2 Asset Condition

Figure 27 summarizes the replacement cost-weighted condition of the Township's bridges and culverts. Some elements or components of these structures may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition.

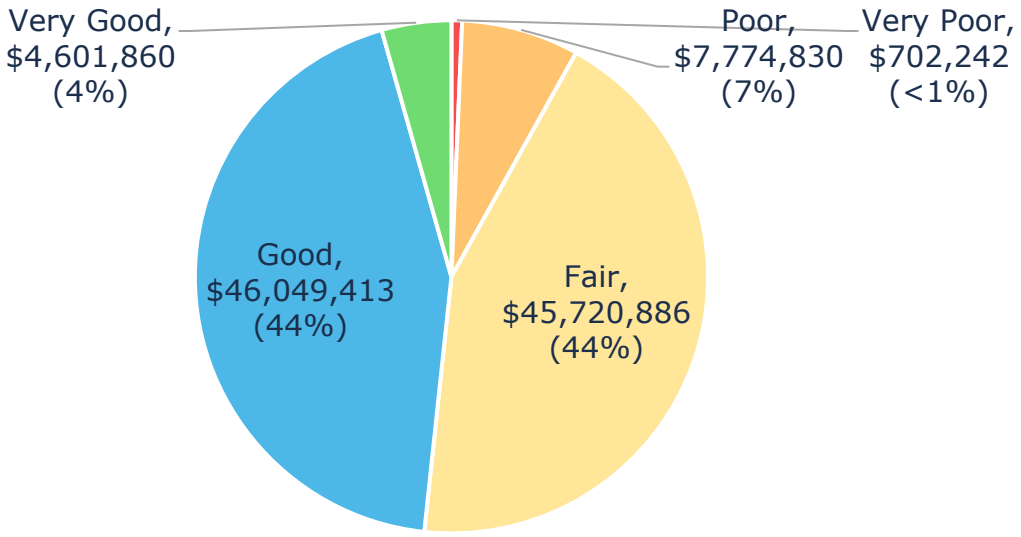


Figure 27 Asset Condition: Bridges & Culverts Overall

As further detailed in Figure 28, based on in-field condition assessments, $66.6 million (94%) of bridge assets were assessed as being in fair or better condition. Similarly, $29.8 million (88%) of major culverts are in fair or better condition. The OSIM ratings are designed to identify repairs needed to elevate condition ratings to a fair or higher.

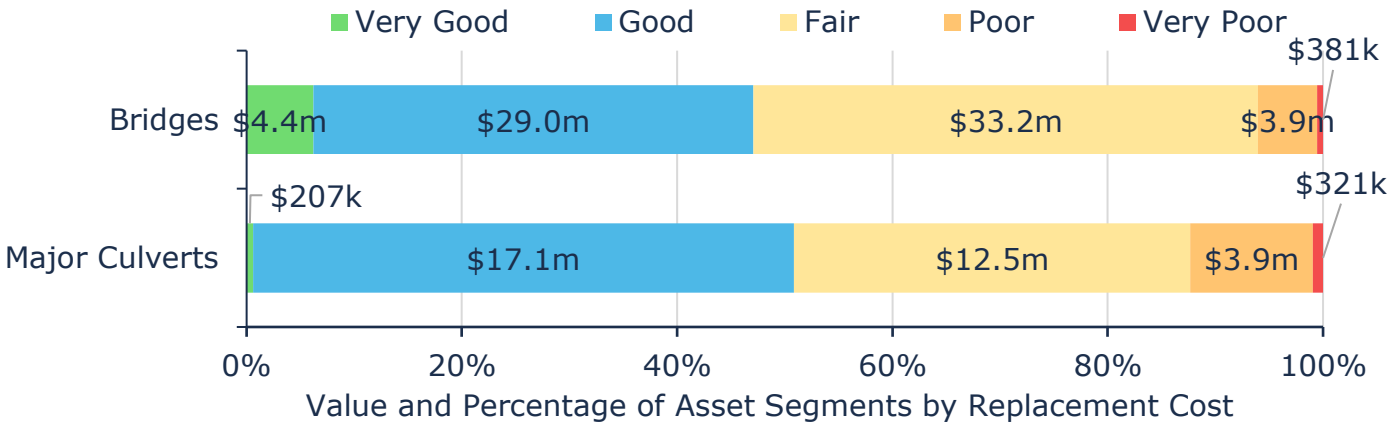


Figure 28 Asset Condition: Bridges & Culverts by Segment

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 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.

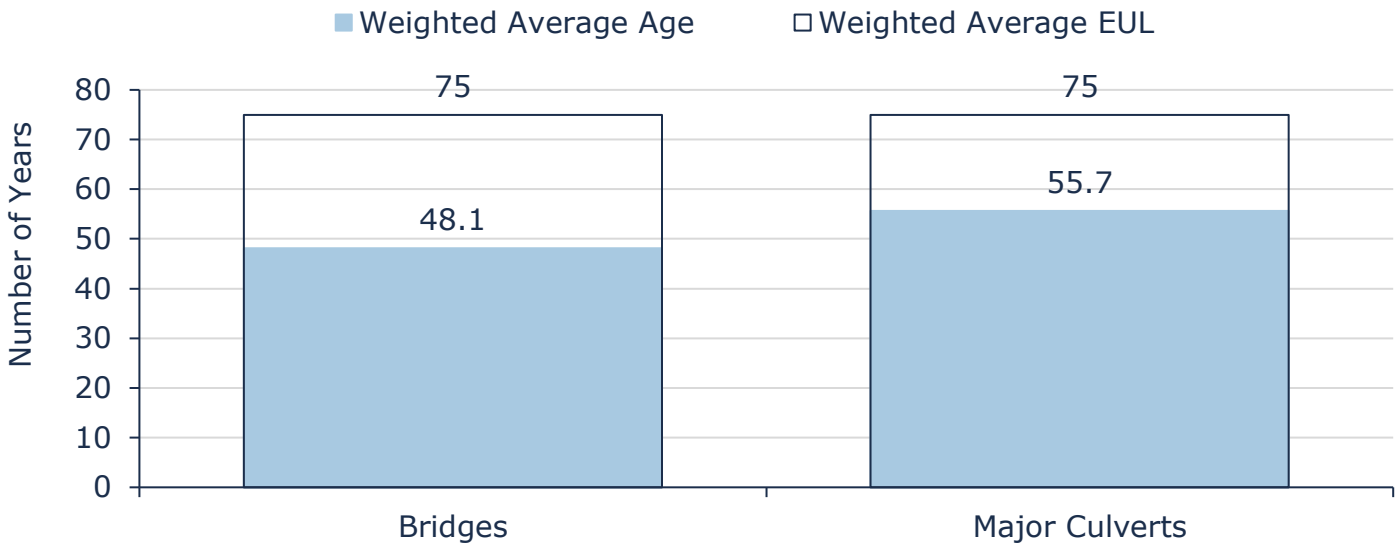


Figure 29 Estimated Useful Life vs. Asset Age: Bridges & Culverts

Age analysis shows that, on average, bridges and major culverts are in the mid to later stages of their lives. OSIM assessments should continue to be utilized alongside age and asset criticality to effectively prioritize capital and maintenance expenditures.

9.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Typical maintenance includes: ♦ Obstruction removal ♦ Paving Surface ♦ Ensuring adequate drainage
	Biennial OSIM inspection reports include a list of recommended maintenance activities that the Township considers and completes according to cost and urgency.
Rehabilitation / Replacement	Biennial OSIM inspection reports include a Capital Needs List identifying recommended rehabilitation and replacement activities with estimated costs.
Inspection	The most recent Bridge and Culvert inspection reports were prepared in 2022 and 2024 by D.M. Wills Associates Limited.

Table 32 Lifecycle Management Strategy: Bridges & Culverts

9.5 Forecasted Long-Term Replacement Needs

Figure 30 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's bridges and culverts. This analysis was run until 2100 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) for bridges and culverts total $1.5 million. 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.

Capital needs see a substantial spike in 2046-2050 as assets reach the end of their useful life. These projections and estimates are based on asset replacement costs, age analysis, and condition data. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

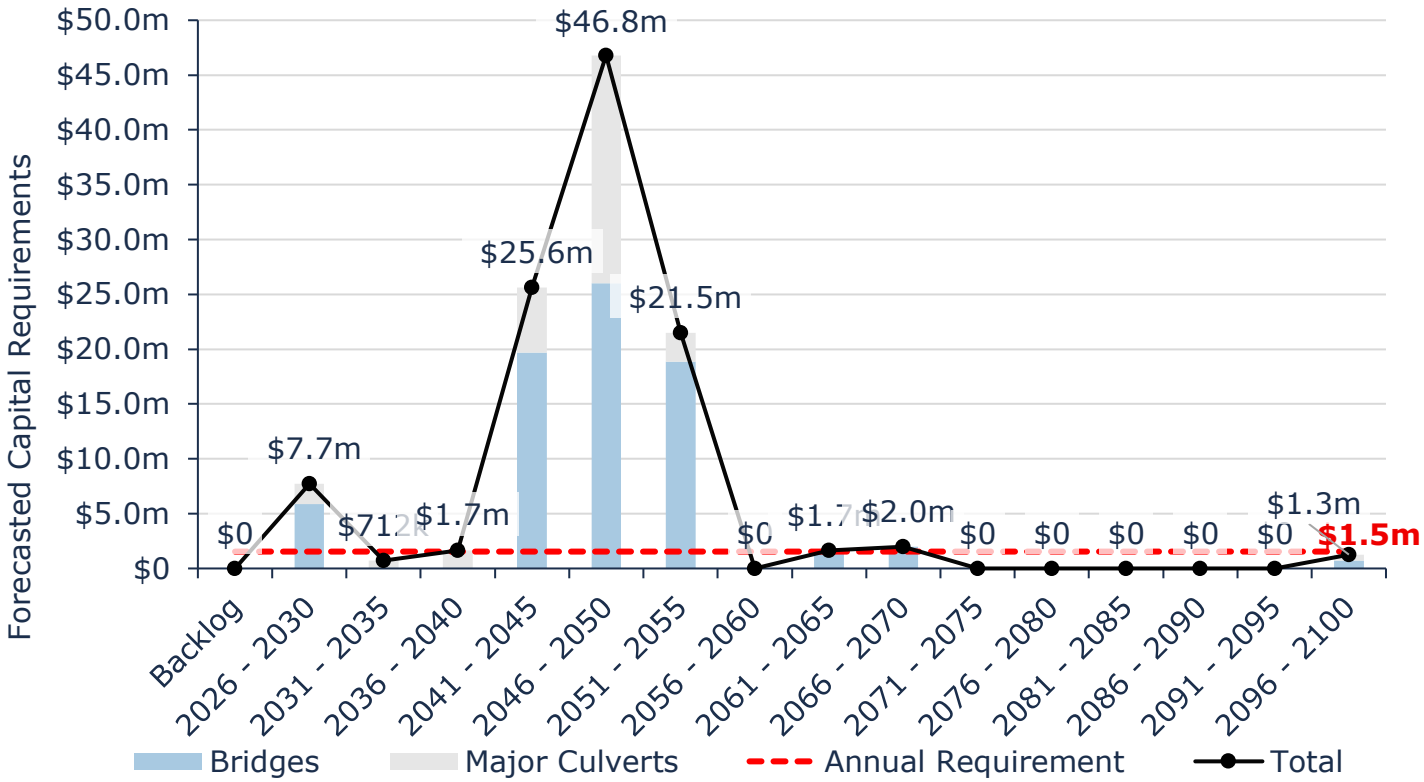


Figure 30 Forecasted Capital Replacement Needs: Bridges & Culverts 2026-2100

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

Please note: these projections reflect Scenario 2 (100% Requirements).

9.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition and replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$13,717,434 (13%)	$18,449,690 (18%)	$26,344,128 (25%)	$40,760,166 (39%)	$5,577,813 (5%)

Figure 31 Risk Matrix: Bridges & Culverts

10. Water Network

The Township's water network has a total current replacement cost of approximately $97.7 million. The distribution network contains mains, services, hydrants, valves, and meters, along with rolling stock and equipment that are used to service the network.

10.1 Inventory & Valuation

Table 33 summarizes the quantity and current replacement cost of the Township'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
Hydrants	1,036	Assets	$5,098,816	CPI
Water Mains	4,296	Kilometers	$25,142,692	CPI
Water Meters	629	Assets	$1,349,642	CPI
Water Services	20,372	Assets	$65,319,748	CPI
Water Valves	130	Assets	$626,585	CPI
Water Rolling Stock & Equipment	4	Assets	$157,241	CPI
TOTAL			**$97,694,724**	

Table 33 Detailed Asset Inventory: Water Network

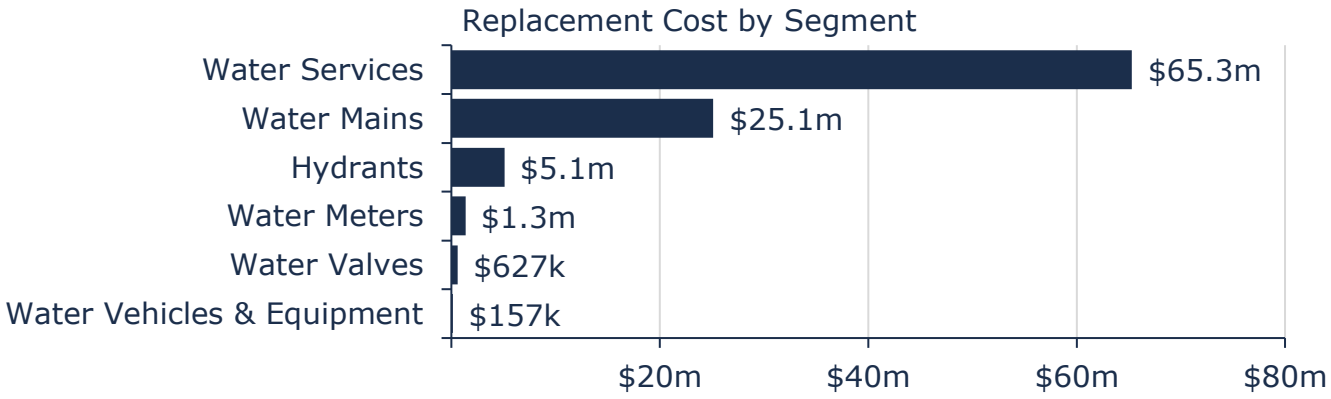


Figure 32 Portfolio Valuation: Water Network

10.2 Asset Condition

Figure 33 summarizes the replacement cost-weighted condition of the Township's water network. Based on mostly age, 94% of assets are in fair or better condition; the remaining 8% of assets are in poor to very poor condition. Condition assessments were available for some rolling stock and equipment assets, accounting for <1% of the total water network portfolio by replacement value.

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

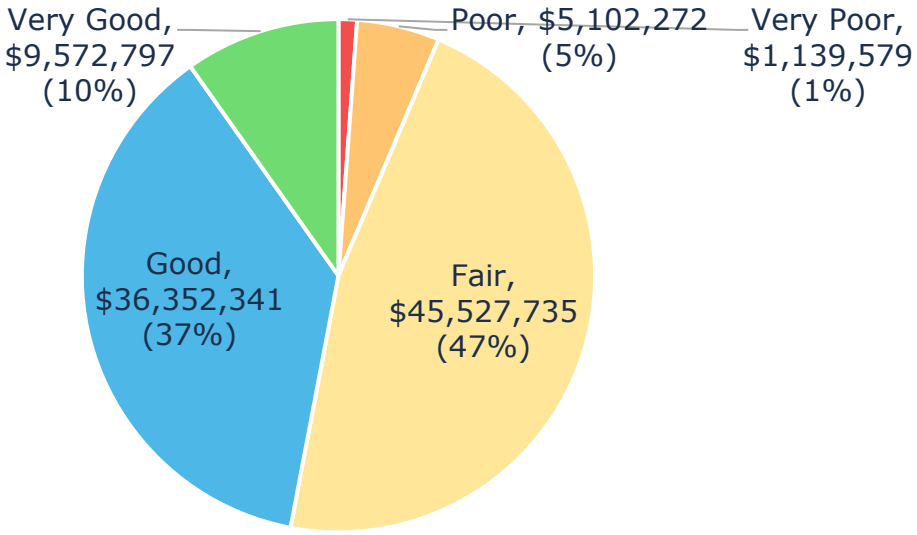


Figure 33 Asset Condition: Water Network Overall

As illustrated in Figure 34, based mostly on age-based conditions, the majority of the Township's water network assets are in good and very good condition. Only approximately 5% of watermains are in poor or worse condition.

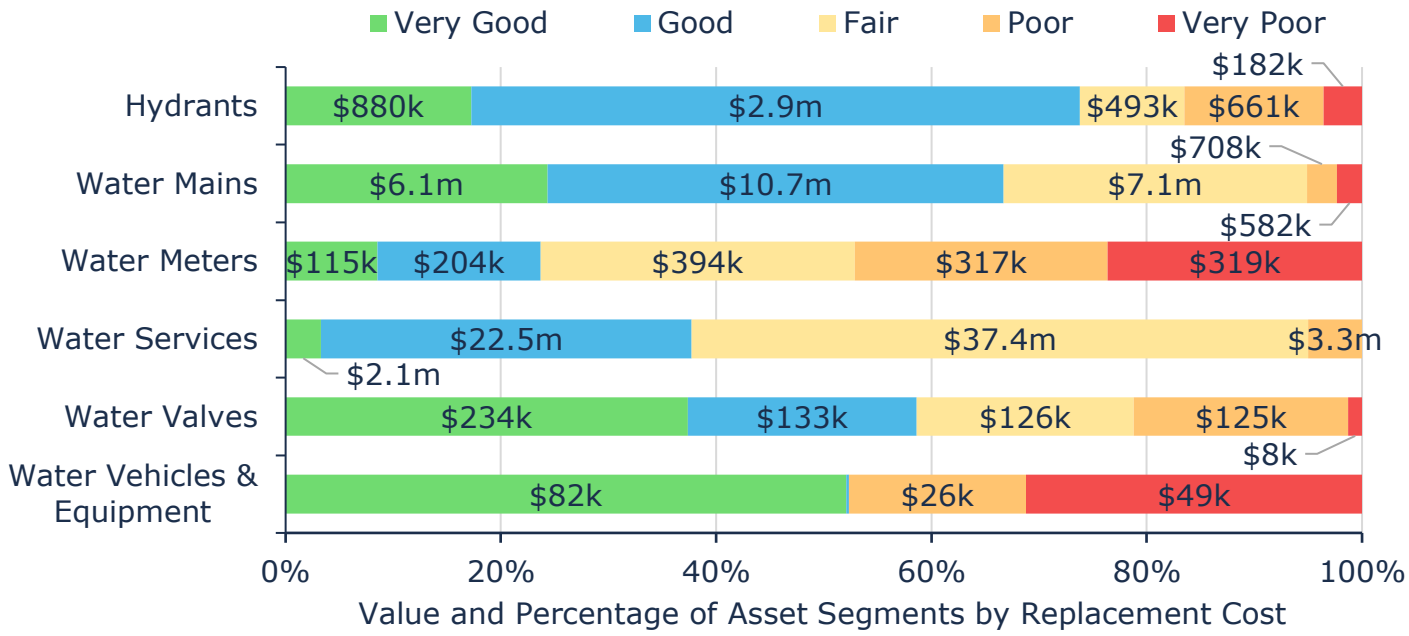


Figure 34 Asset Condition: Water Network by Segment

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 long-term replacement spikes.

Figure 35 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.

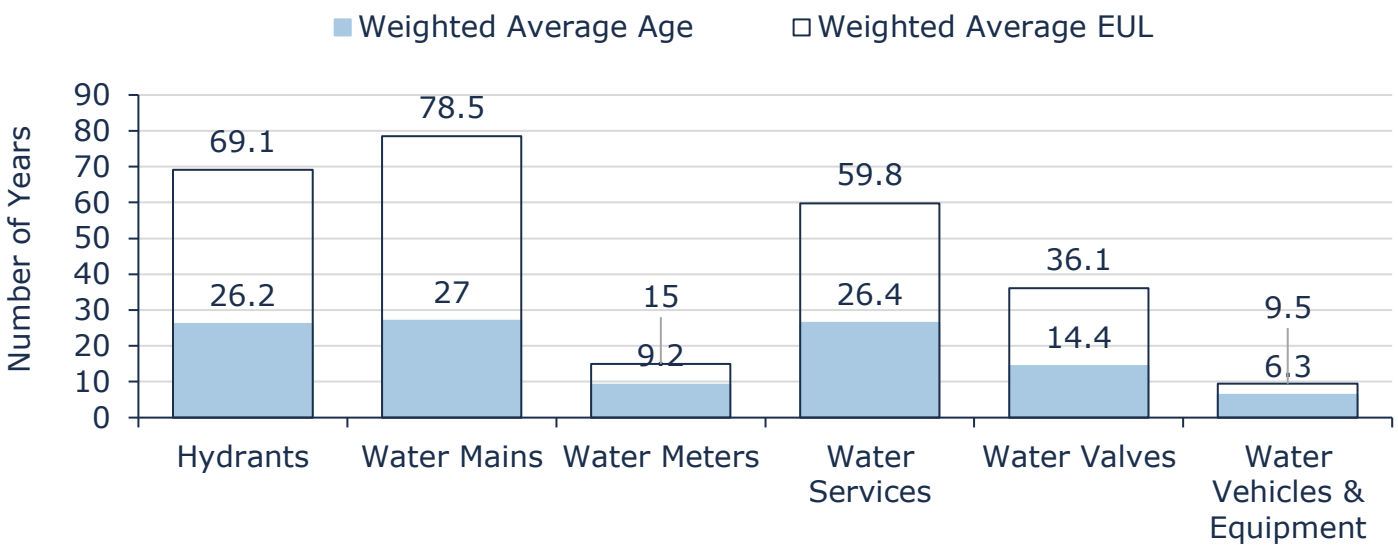


Figure 35 Estimated Useful Life vs. Asset Age: Water Network

Age analysis reveals that most water network assets are in the early stages of their useful lives, with water meters, rolling stock, and equipment approaching the later stages, on average.

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 Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Inspections	All water network assets are monitored by SCADA. Water network assets are assessed annually during the review of the TCA subledger.
	Fire Hydrants are assessed as per the NFPA standards.
Maintenance	Maintenance activities include bi-annual flushing, bi-annual pump maintenance, and monthly activities for certain assets.
	Maintenance is primarily triggered by break reports and complaints.
Rehabilitation/ Replacement	Rehabilitation is primarily driven by growth and expansion, with infrastructure often being replaced rather than rehabilitated.
	Replacement is often tied to growth-driven expansion projects. Funding for replacement is considered in conjunction with road replacement and watermain replacement funding programs.

Table 34 Lifecycle Management Strategy: Water Network

10.5 Forecasted Long-Term Replacement Needs

Figure 36 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's water network. This analysis was run until 2105 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $1.6 million 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 moderate capital needs throughout the near future. Significant water main replacements are projected from 2046-2070, spiking at $25.3 million in 2056-2060. 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.

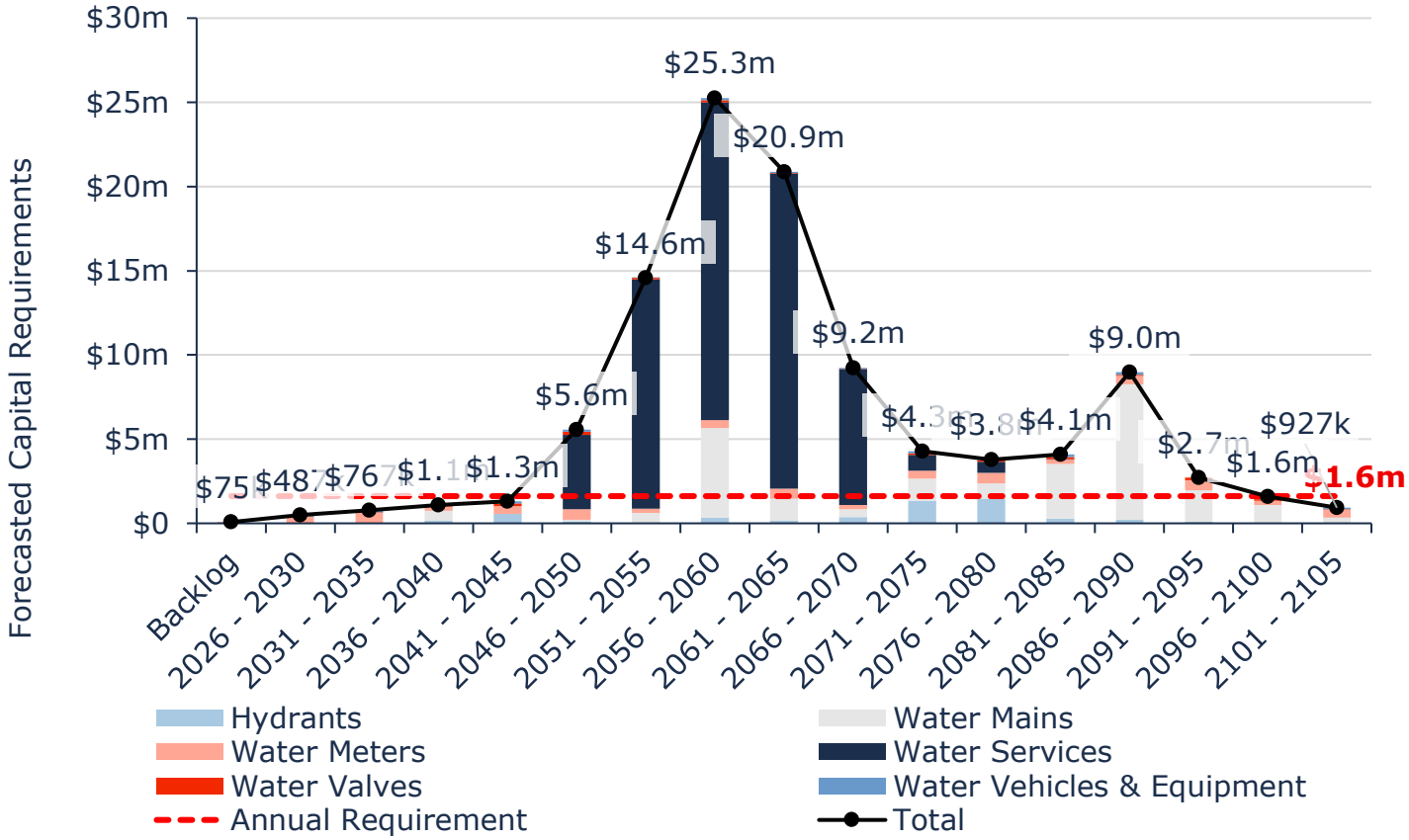


Figure 36 Forecasted Capital Replacement Needs: Water Network 2026-2105

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

10.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, replacement costs, pipe material, and pipe diameter. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low**	**5 - 7** **Low**	**8 - 9** **Moderate**	**10 - 14** **High**	**15 - 25** **Very High**
$81,022,412 (83%)	$10,520,359 (11%)	$2,005,132 (2%)	$4,146,821 (4%)	- (0%)

Figure 37 Risk Matrix: Water Network

11. Sanitary Network

The sanitary network provides the essential service of wastewater collection for the community, and has a current replacement value of $27.9 million.

11.1 Inventory & Valuation

Table 35 summarizes the quantity and current replacement cost of the Township's various sanitary network assets as managed in its primary asset management register, Citywide Assets.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Sanitary Laterals	19,092	Meters	$6,828,131	CPI
Sanitary Mains	32	Kilometers	$16,374,397	CPI
Sanitary Manholes	448	Assets	$4,688,474	CPI
TOTAL			**$27,891,002**	

Table 35 Detailed Asset Inventory: Sanitary Network

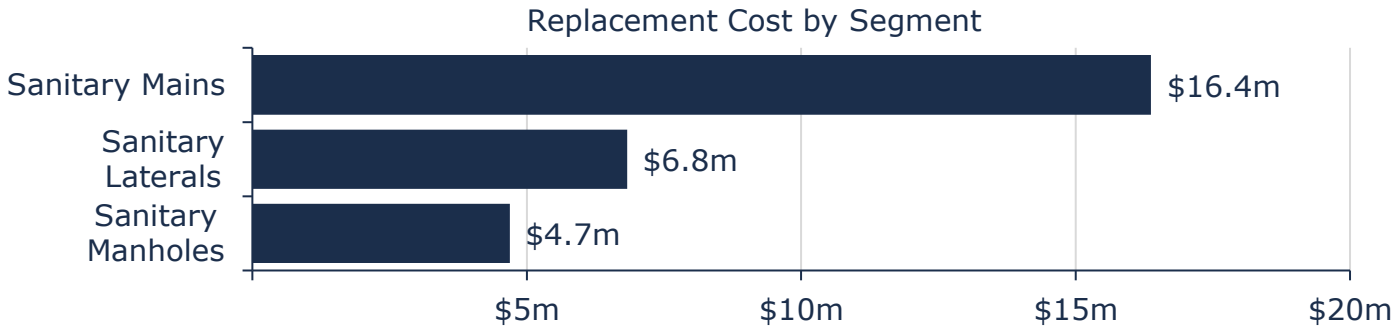


Figure 38 Portfolio Valuation: Sanitary Network

11.2 Asset Condition

Figure 39 summarizes the replacement cost-weighted condition of the Township's sanitary network. Based on a combination of field inspection data and age, 88% of assets are in fair or better condition; the remaining 12% of assets are in poor to very poor condition. Condition assessments were available for 96% of sanitary mains, based on replacement cost, 90% of manholes, and no available assessments for sanitary lateral 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.

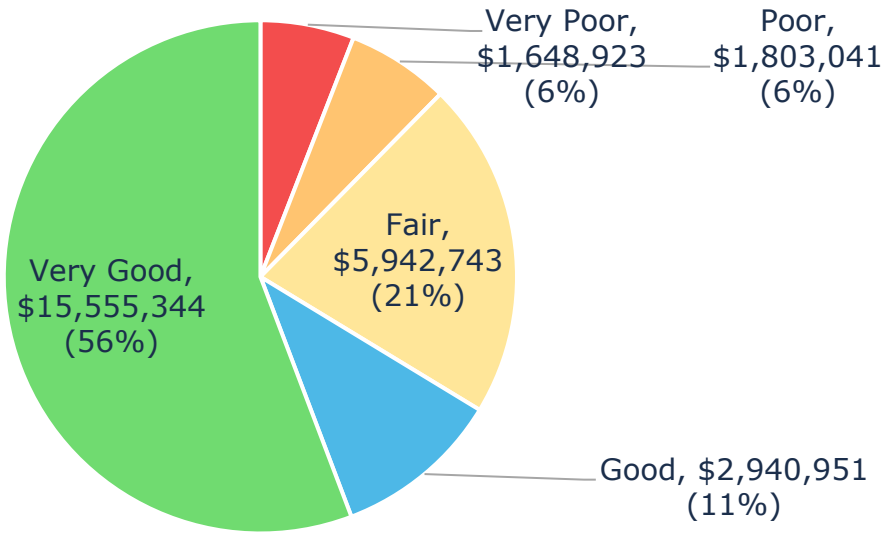


Figure 39 Asset Condition: Sanitary Network Overall

As illustrated in Figure 40, based on condition assessments and age-based conditions, the majority of the Township's sanitary mains and manholes are in very good condition, while the majority of sanitary laterals are in fair condition.

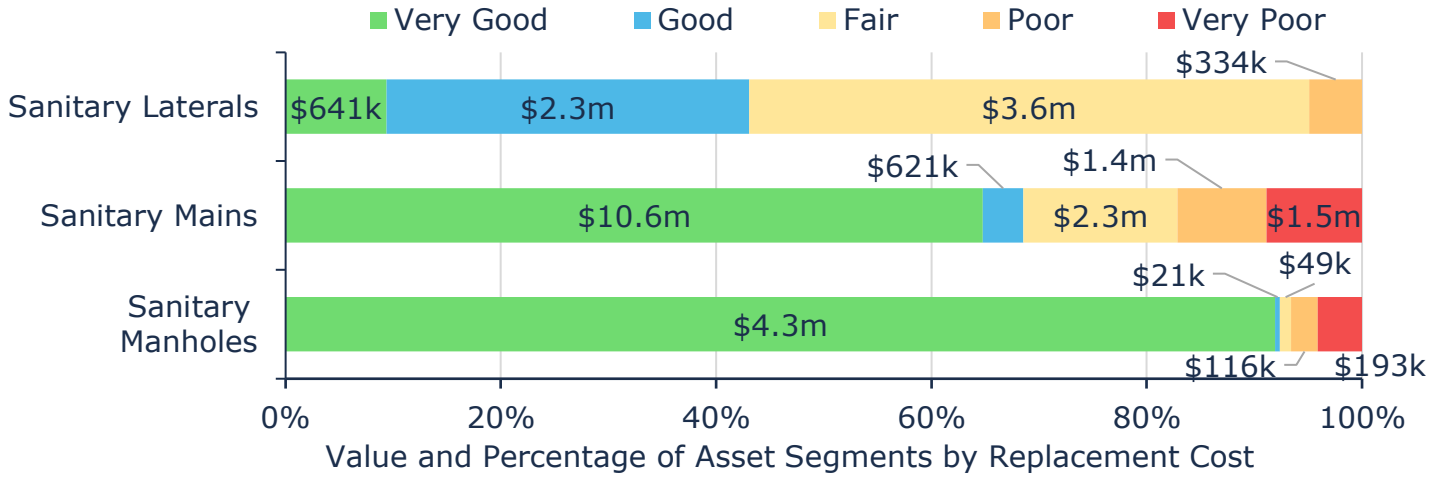


Figure 40 Asset Condition: Sanitary Network by Segment

11.3 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 41 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.

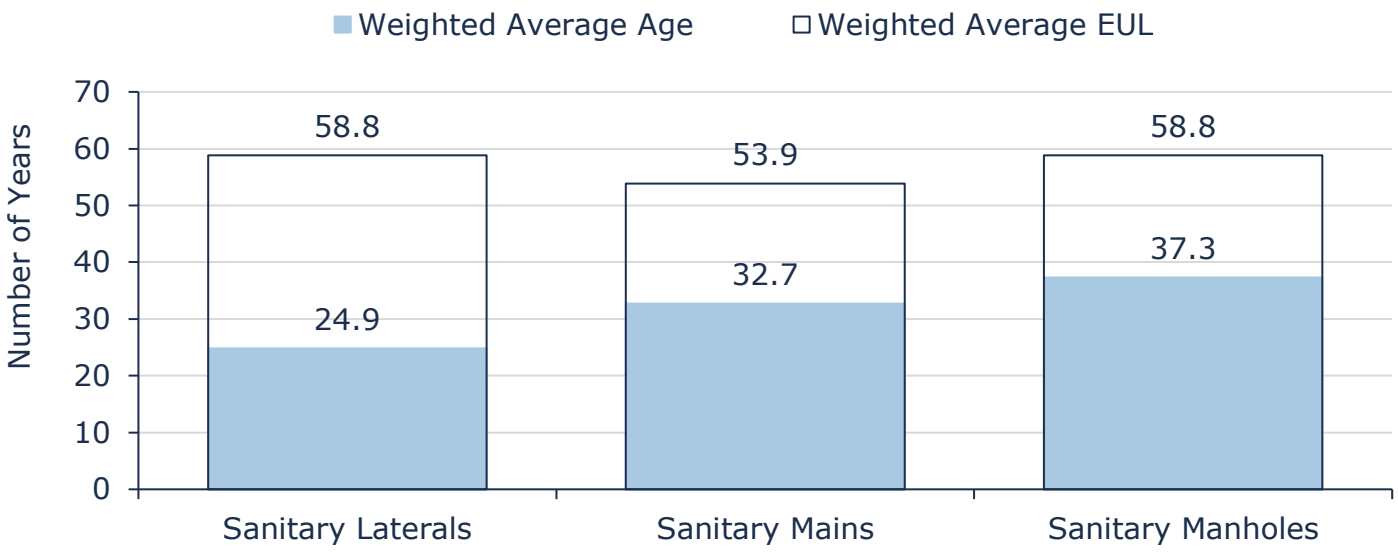


Figure 41 Estimated Useful Life vs. Asset Age: Sanitary Network

Age analysis reveals that, manholes, and sewer mains are just over midway through their estimated useful lives. Sanitary laterals are, on average, approaching the midpoint of their estimated useful lives. Assets should be reviewed to determine if the original useful lives are still applicable, or if assets are lasting longer than originally projected. This review will help refine the Township's asset registry and long-term capital needs projections.

11.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance tasks include inspections, cleaning, minor repairs, CCTV inspections, and flushing, which are conducted by both internal staff and external contractors.
	Sanitary mains undergo flushing and CCTV inspections on a 4-year cycle (25% of the network each year).
	Manholes follow the same 4-year inspection cycle as sanitary mains.
Rehabilitation/ Replacement	Rehabilitation activities, which vary based on the area and burial depth, encompass either open cut replacement or relining techniques.
	Assets nearing the end of their expected service life or requiring frequent and costly repairs are given priority for replacement.

Table 36 Lifecycle Management Strategy: Sanitary Network

11.5 Forecasted Long-Term Replacement Needs

Figure 42 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's sanitary network. This analysis was run until 2085 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $539,000 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 shows a spike in sanitary main replacements in 2081-2085 as assets reach the end of their useful lives. 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.

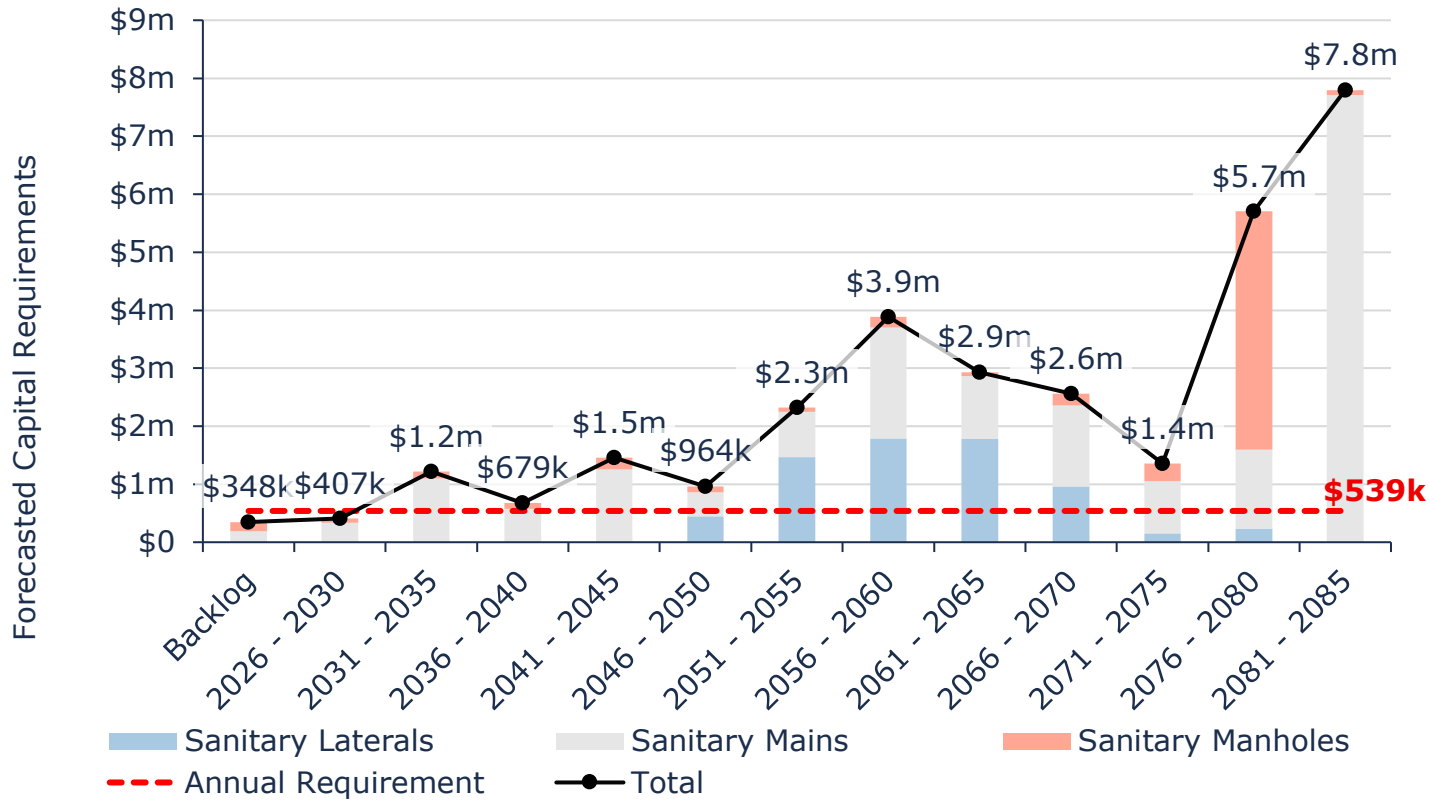


Figure 42 Forecasted Capital Replacement Needs: Sanitary Network 2026-2085

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

11.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, pipe diameter, and replacement costs. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$11,925,647 (43%)	$8,652,716 (31%)	$5,167,284 (19%)	$1,856,623 (7%)	$288,732 (1%)

Figure 43 Risk Matrix: Sanitary Network

12. Storm Network

The Township's storm network comprises sewer mains and other critical supporting capital assets with a total current replacement cost of approximately $28.9 million. The Township is responsible for 35 kilometers of storm mains.

12.1 Inventory & Valuation

Table 37 summarizes the quantity and current replacement cost of all storm network assets available in the Township's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Catch Basins	534	Assets	$2,168,775	CPI
Storm Mains	35	Kilometers	$25,953,219	CPI
Stormwater Headwalls	8	Assets	$160,112	User-Defined
Stormwater Ponds	17,651	Square Meters	$572,731	CPI
TOTAL			**$28,854,837**	

Table 37 Detailed Asset Inventory: Storm Network

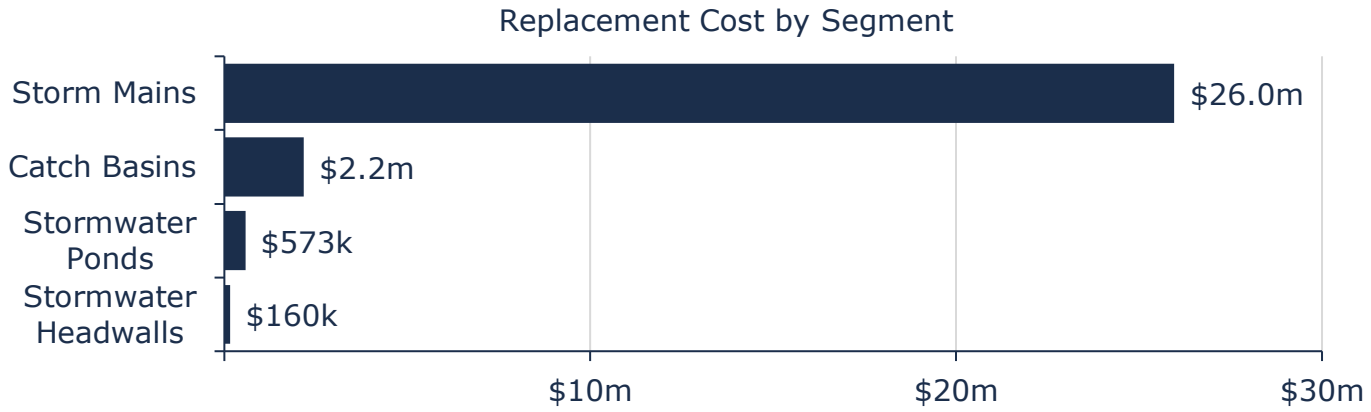


Figure 44 Portfolio Valuation: Storm Network

12.2 Asset Condition

Figure 45 summarizes the replacement cost-weighted condition of the Township's storm network assets. Based on a combination of condition and age data, approximately 56% of assets are in poor to very poor condition. These assets may be candidates for replacement in the short term;

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

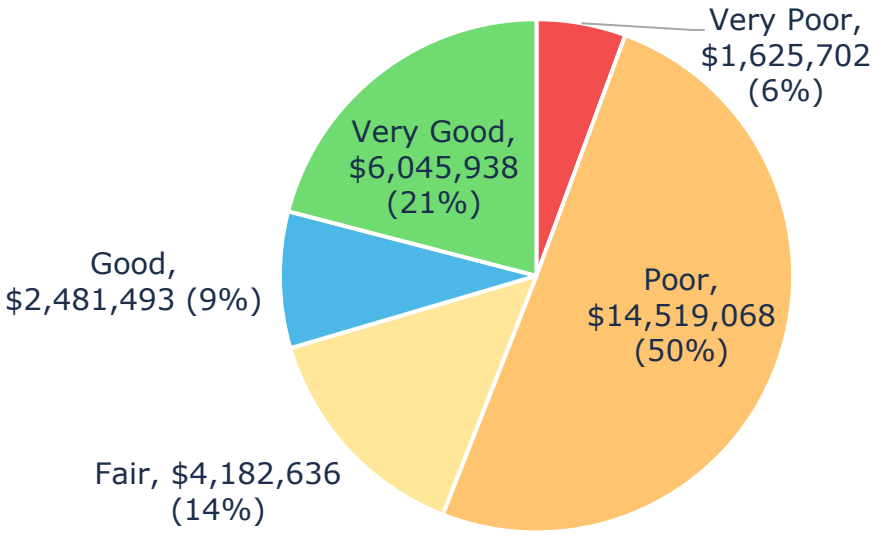


Figure 45 Asset Condition: Storm Network Overall

Figure 46 summarizes the condition of storm network assets by segments. The analysis illustrates that the majority of stormwater mains are in poor condition. In addition, the majority of stormwater ponds are in very poor condition.

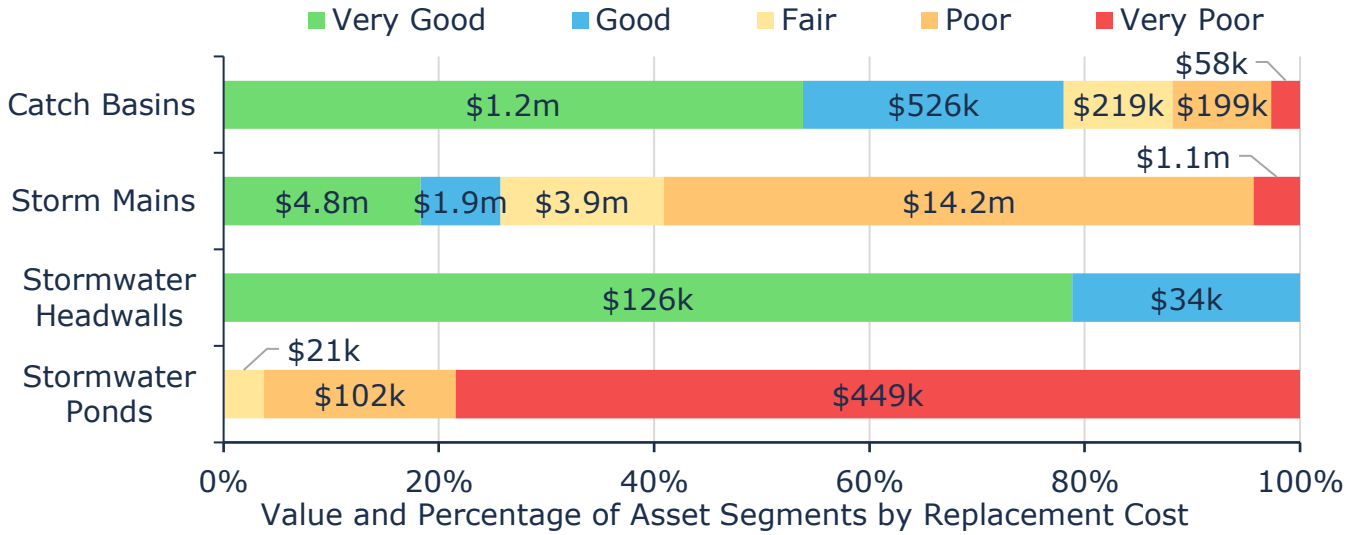


Figure 46 Asset Condition: Storm Network by Segment

12.3 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 47 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.

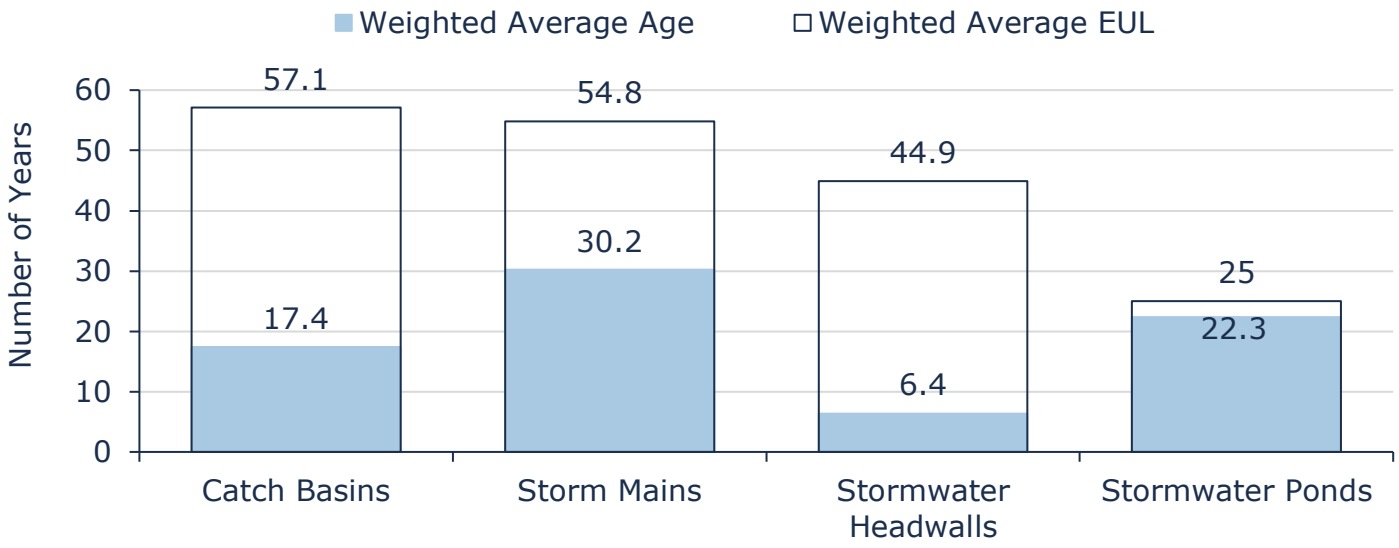


Figure 47 Estimated Useful Life vs. Asset Age: Storm Network

Age analysis reveals that catch basins and headwalls are in the early stages of their expected life. Storm mains are, on average, midway through their useful lives while stormwater ponds are approaching the end. Age profiles and CCTV inspections will help to identify mains in need of replacements and/or upgrades. Extensions to EULs for mains may also be considered based on performance history to date.

12.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Catch basins are inspected and cleaned annually and outlets are inspected regularly to ensure unobstructed flow

	All other maintenance activities are completed on a reactive basis when operational issues are identified (e.g., blockages, backups), through complaints and service requests
Replacement	Replacement is considered based on the estimated useful life of the asset and development-driven needs.

Table 38 Lifecycle Management Strategy: Storm Network

12.5 Forecasted Long-Term Replacement Needs

Figure 48 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's storm network assets. This analysis was run until 2085 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $508,000 for all assets in the storm 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 a backlog of $1.3 million, comprised of storm mains, catch basin, and stormwater pond assets. The largest replacement spike is forecasted in 2036-2040 as mains reach the end of their expected design 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.

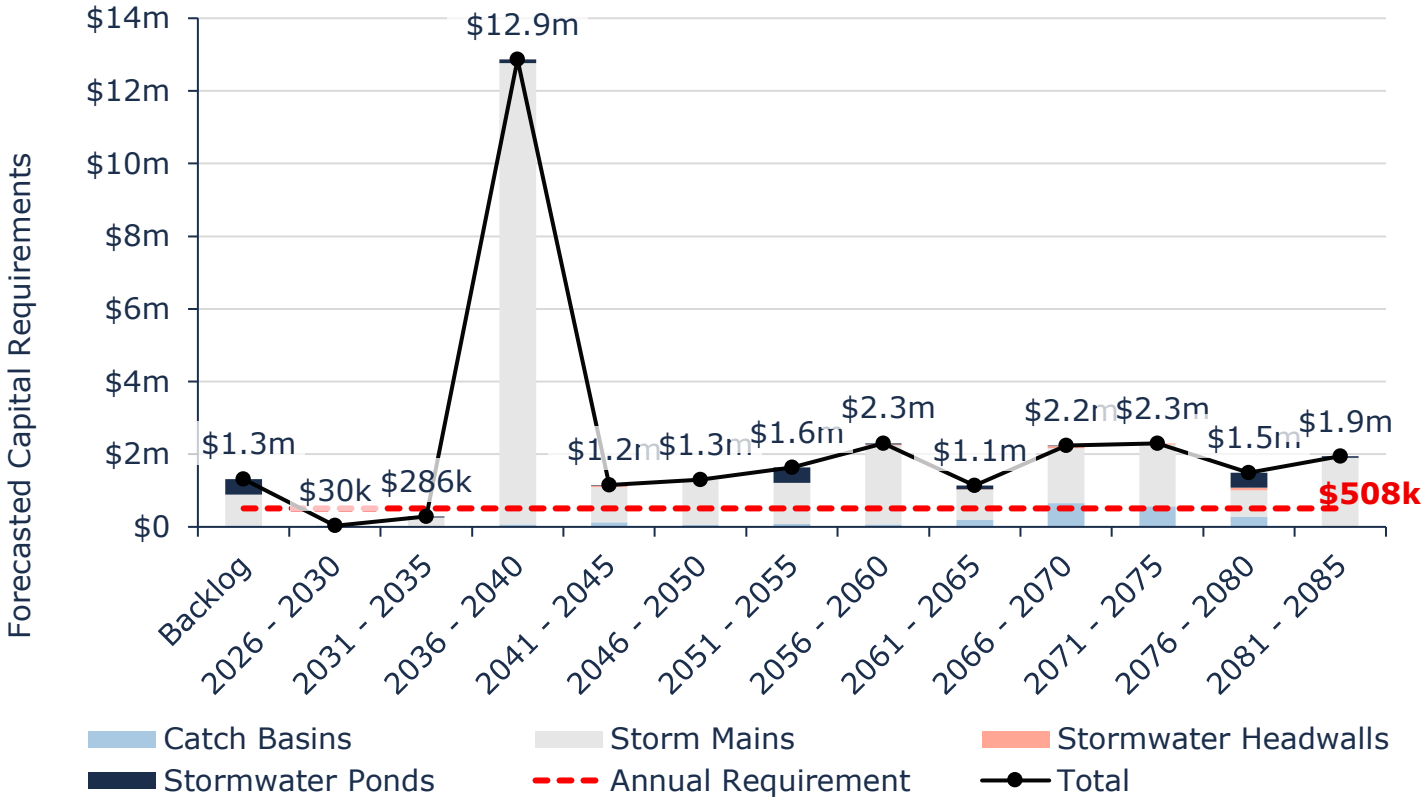


Figure 48 Forecasted Capital Replacement Needs Storm Network 2026-2085

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. CCTV inspections may reveal a higher or lower backlog. The inspections may also help reduce long-term projections by providing more accurate condition data for mains than age. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

Please note: these projections reflect Scenario 2 (100% Requirements).

12.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, pipe material, pipe diameter, and replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** $6,567,821 (23%)	5 - 7 **Low** $2,455,340 (9%)	8 - 9 **Moderate** $3,678,107 (13%)	10 - 14 **High** $5,627,899 (20%)	15 - 25 **Very High** $10,525,670 (36%)

Figure 49 Risk Matrix: Storm Network

Category Analysis: Non-Core Assets

13. Facilities

The Township's facilities portfolio includes fire stations, various administrative and public works facilities, libraries, and recreational facilities. The total current replacement of facilities is estimated at more than $48 million.

13.1 Inventory & Valuation

Table 19 summarizes the quantity and current replacement cost of all buildings assets available in the Township's asset register. Most facilities are componentized into ~10 asset records each that represent major elements of the buildings (e.g. foundation, roofing, HVAC, etc.). The quantity listed in the table below represents the number of facilities currently tracked for each department.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
General Government	1	Building	$6,865,605	CPI
Protection Services	2	Buildings	$6,564,319	CPI
Recreation and Cultural Services	17	Buildings	$32,322,929	CPI
Transportation Services	3	Buildings	$2,346,770	CPI
TOTAL			**$48,099,623**	

Table 39 Detailed Asset Inventory: Facilities

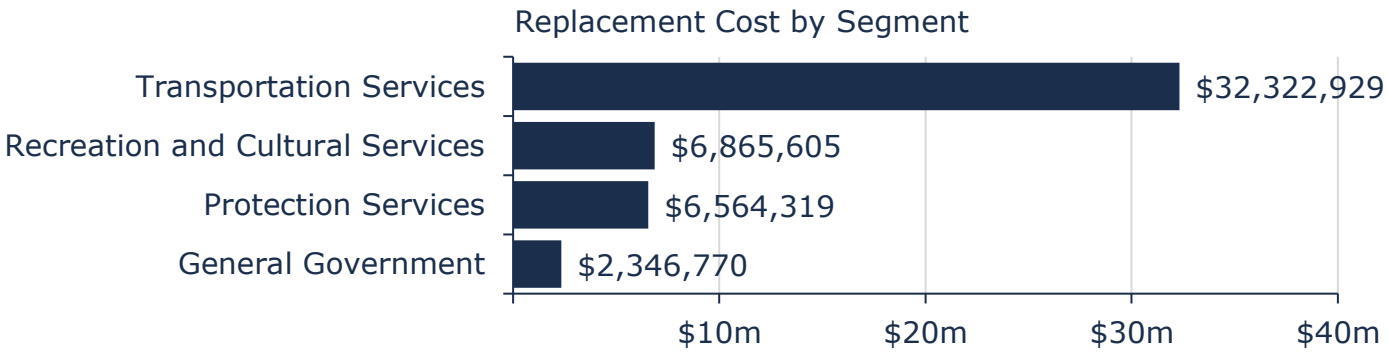


Figure 50 Portfolio Valuation: Facilities

13.2 Asset Condition

Figure 51 summarizes the replacement cost-weighted condition of the Township's facilities portfolio. Based on mostly condition assessment data, 86% of facilities assets are in fair or better condition; however, 14%, with a current replacement cost of more than $6.9 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 facilities are not fully componentized, condition data is presented only at the major component level, rather than at the individual element within each building.

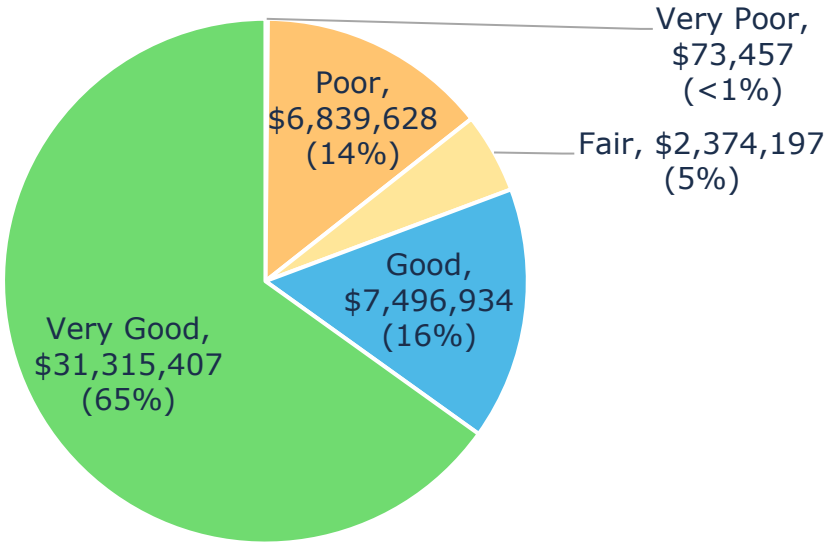


Figure 51 Asset Condition: Facilities Overall

Figure 52 summarizes the age-based condition of facilities by each department. A substantial portion of general government assets are in poor to worse condition. The vast majority of recreation assets are in very good condition.

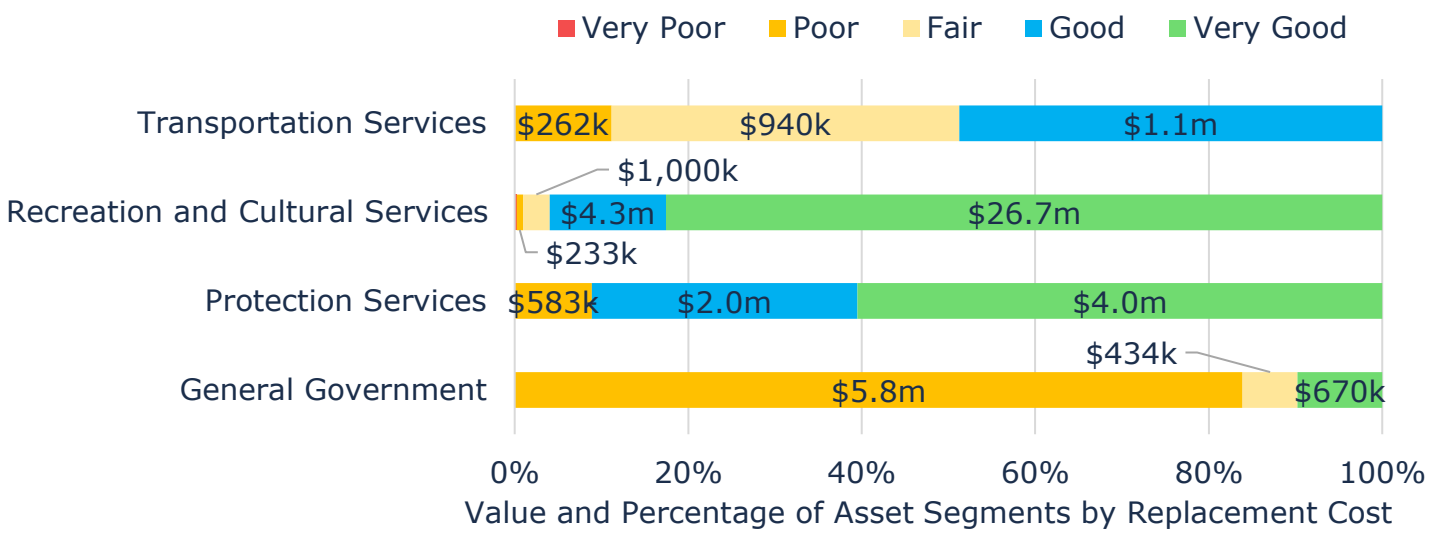


Figure 52 Asset Condition: Facilities by Segment

13.3 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. Please Note: It is recommended that the Township review the EULs of the Transportation Services segment.

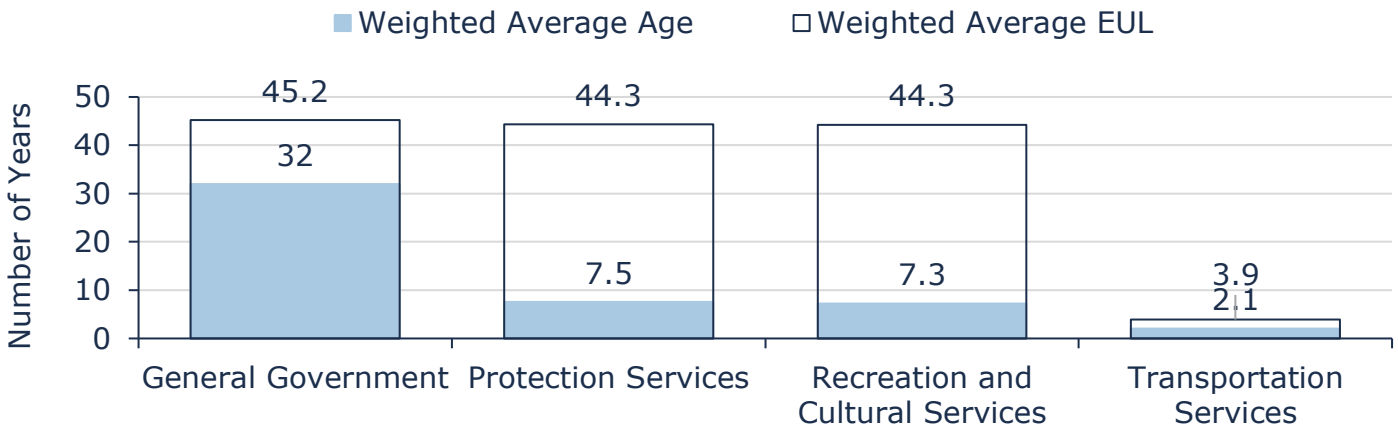


Figure 53 Estimated Useful Life vs. Asset Age: Facilities

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

13.4 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 table below outlines the Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Maintenance is triggered by various factors, including fire and life safety concerns, and HVAC/heating system upgrades.
	Maintenance activities are performed both in-house and by contractors depending on the specific task.
	All other maintenance activities are completed on a reactive basis when operational issues are identified through complaints and service requests.
Rehabilitation/ Replacement	Rehabilitations such as roof replacements or HVAC component replacements are considered on an as-needed basis.
	The primary considerations for asset replacement are asset failure, availability or grant funding, safety issues, and volume of use.
Inspection	Fire Stations are assessed as per NFPA standards.

Table 40 Lifecycle Management Strategy: Facilities

13.5 Forecasted Long-Term Replacement Needs

Figure 54 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's facilities portfolio. This analysis was run until 2070 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $1.2 million for all 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 spike significantly in 2066-2070 as many recreation facility assets reach the end of their useful lives. 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.

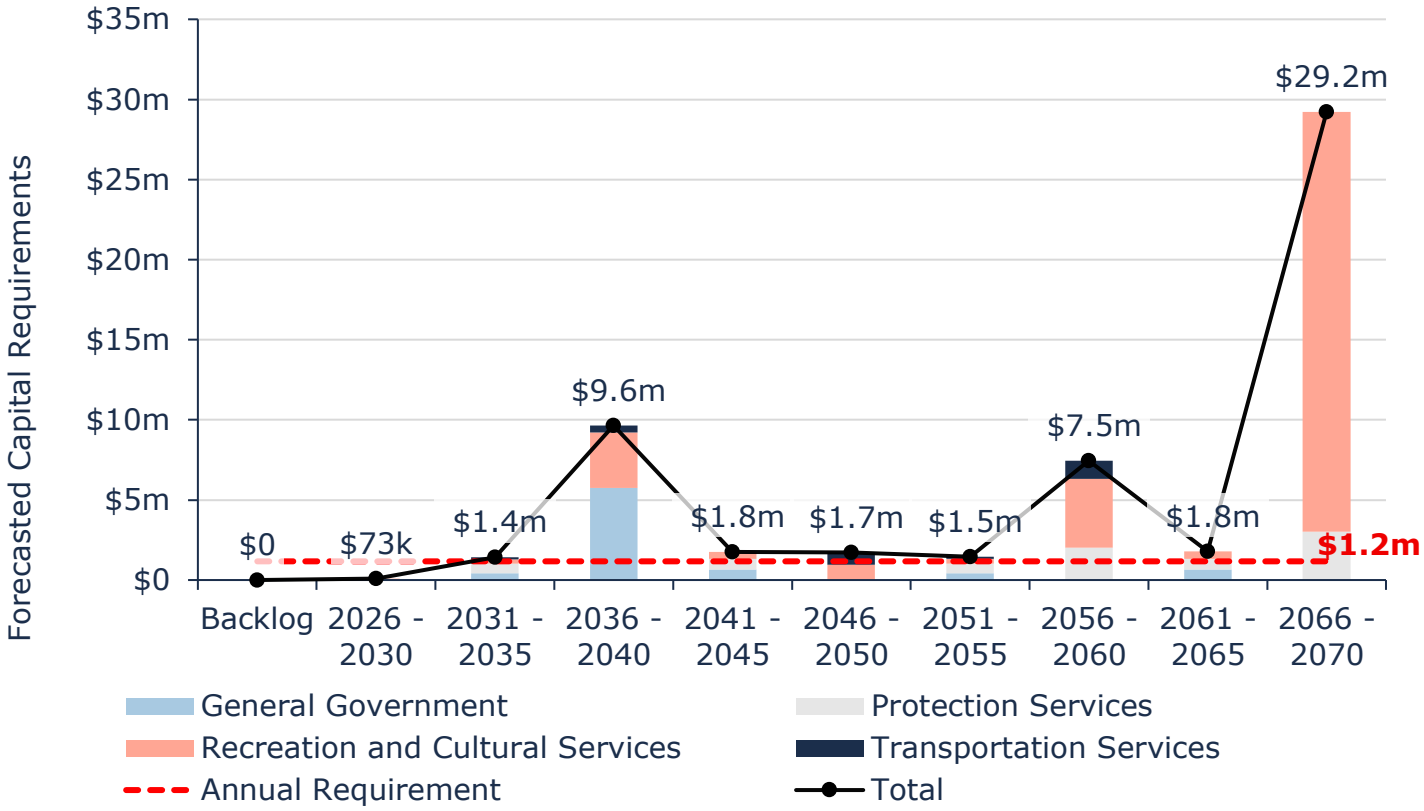


Figure 54 Forecasted Capital Replacement Needs Facilities 2026-2070

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

13.6 Risk Analysis

The risk matrix below is generated using available asset data, age-based condition and replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low**	**5 - 7** **Low**	**8 - 9** **Moderate**	**10 - 14** **High**	**15 - 25** **Very High**
$11,067,904 (23%)	$28,207,184 (59%)	$3,063,115 (6%)	- (0%)	$5,761,420 (12%)

Figure 55 Risk Matrix: Facilities

14. Land Improvements

The Township's land improvements portfolio includes parking lots, fields, playgrounds, trails, retaining walls, and park fixtures. The total current replacement of land improvements is estimated at approximately $8.2 million.

14.1 Inventory & Valuation

Table 41 summarizes the quantity and current replacement cost of all land improvements assets available in the Township's asset register. Athletic fields account for the largest share of the land improvements asset category.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Athletic Fields	79,399	Square Meters	$3,063,077	CPI
Park Fixtures	693	Meters	$1,443,100	CPI
Parking Lots	12,464	Square Meters	$1,908,391	CPI
Playgrounds	9	Assets	$1,111,373	CPI
Retaining Walls	1	Assets	$25,125	CPI
Trails & Pathways	8,985	Square Meters	$676,011	CPI
TOTAL			**$8,227,077**	

Table 41 Detailed Asset Inventory: Land Improvements

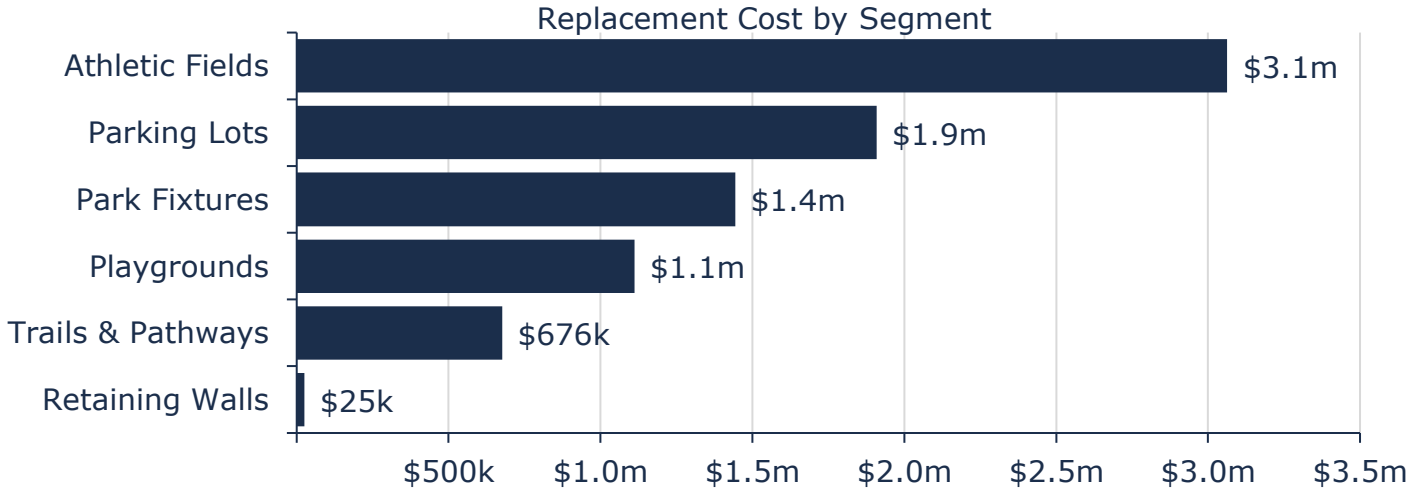


Figure 56 Portfolio Valuation: Land Improvements

14.2 Asset Condition

Figure 57 summarizes the replacement cost-weighted condition of the Township's land improvements portfolio. 62% of assets are in fair or better condition, the remaining 38% 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.

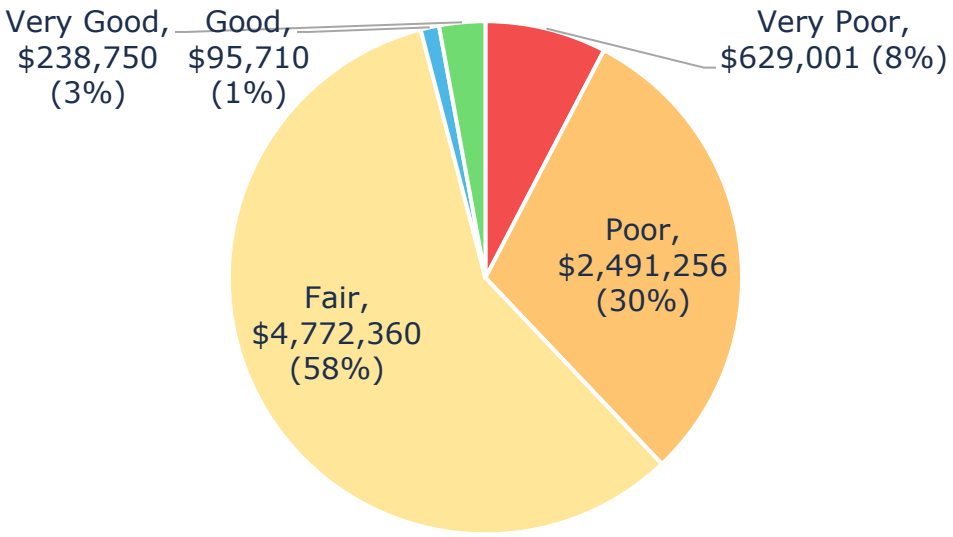


Figure 57 Asset Condition: Land Improvements Overall

Figure 58 summarizes the condition and age-based condition of land improvements by each asset type. Condition assessments are available for 94% of assets, by replacement cost. For most asset types, the majority of assets are in fair condition.

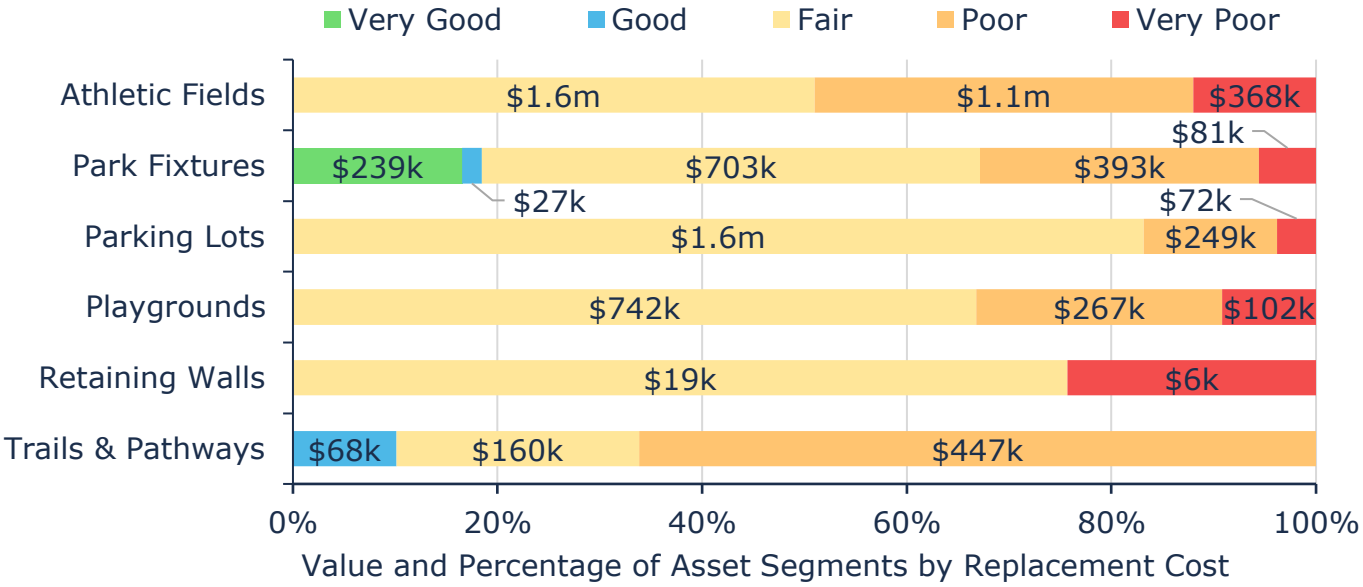


Figure 58 Asset Condition: Land Improvements by Segment

14.3 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 59 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.

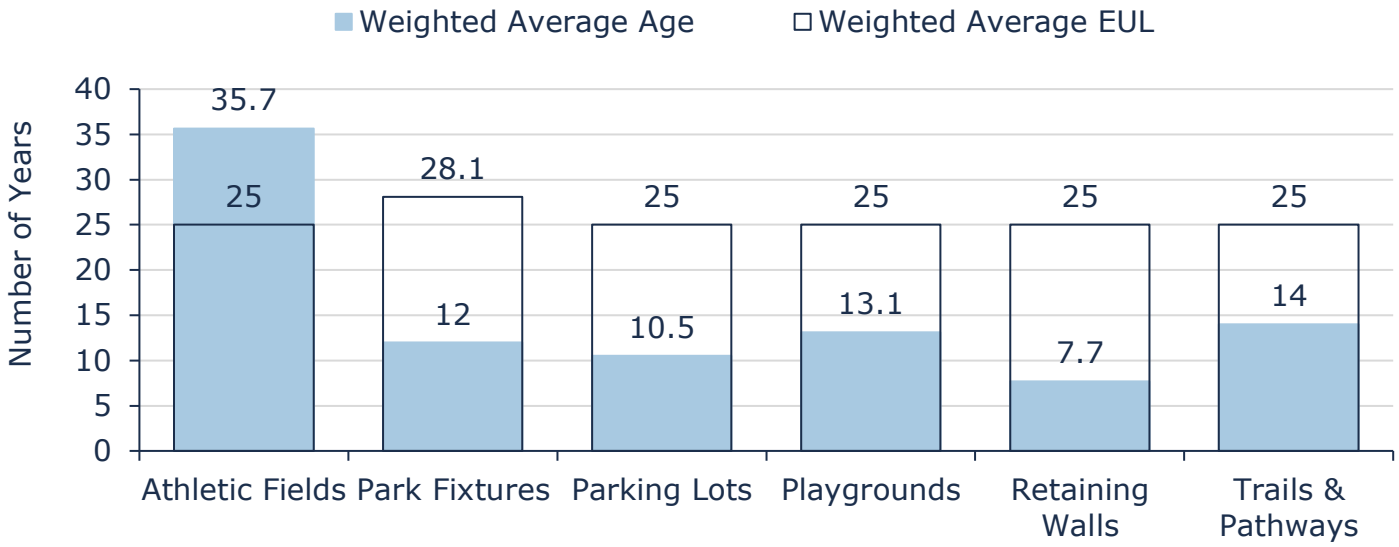


Figure 59 Estimated Useful Life vs. Asset Age: Land Improvements

Age analysis reveals that athletic fields have exhausted their estimated useful lives. The remaining land improvement asset types are in the early- to mid-stages of their useful lives.

14.4 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 table below outlines the Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy

Maintenance	Maintenance activities include mulching (every summer or every other summer) and other tasks performed on a case-by-case basis.
	Maintenance is triggered by factors such as weather events, seasonal changes, and the condition of heavily used parks like Norwood and Asphodel.
Replacement	Replacement is considered based on health and safety concerns, particularly for rotting wooden equipment and playground structures.
Inspections	Assets are cleaned and inspected on a varied schedule by internal staff

Table 42 Lifecycle Management Strategy: Land Improvements

14.5 Forecasted Long-Term Replacement Needs

Figure 60 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's land improvements portfolio. This analysis was run until 2070 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $326,000 for all land improvements. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Replacement needs are forecasted to fluctuate over the forecast horizon, peaking at $4.8 million in 2041-2045 and then again at $4.9 million in 2066-2070 as assets reach the end of their useful life. These projections and estimates are based on asset replacement costs, condition, 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.

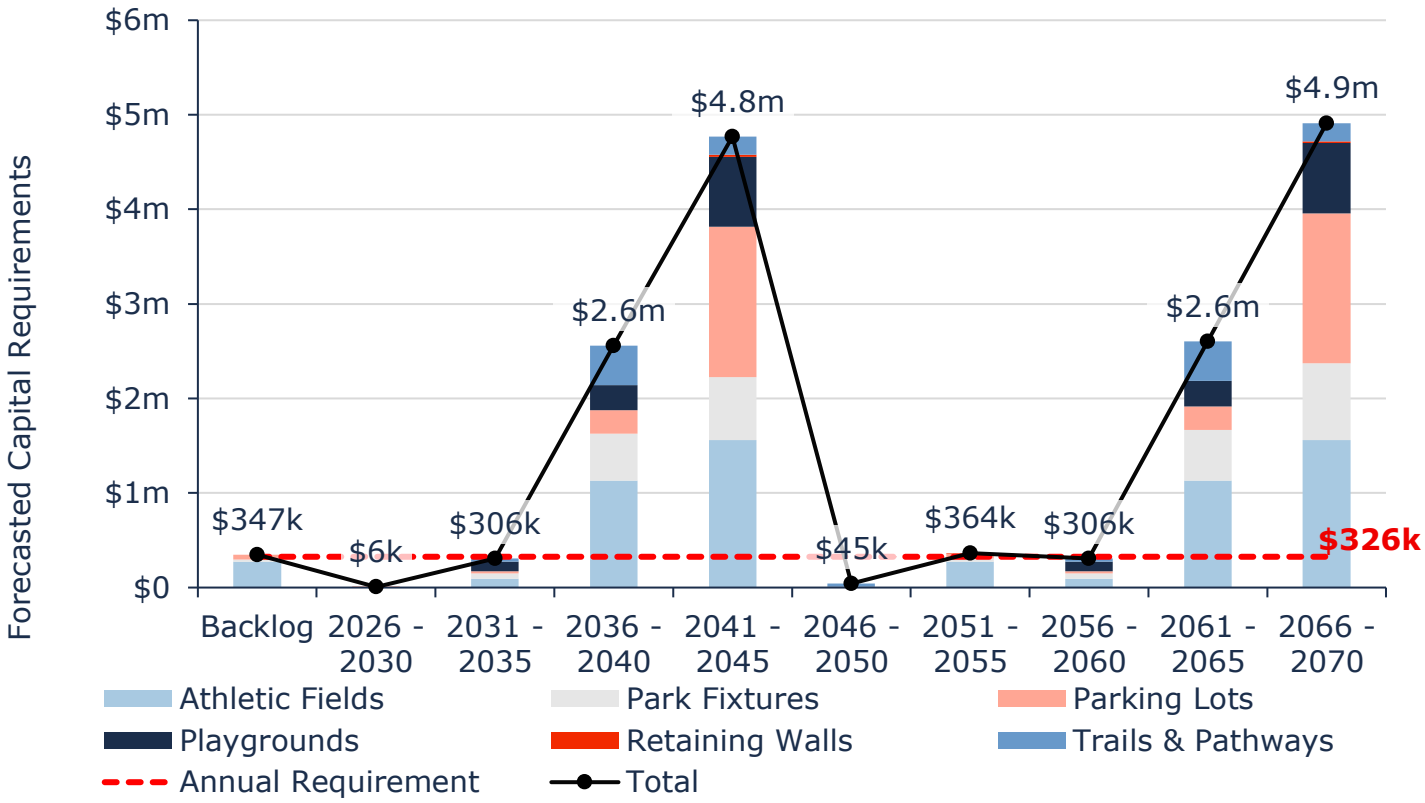


Figure 60 Forecasted Capital Replacement Needs: Land Improvements 2026-2070

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

14.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, and replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$4,305,116 (52%)	$2,035,505 (25%)	$967,743 (12%)	$918,713 (11%)	- (0%)

Figure 61 Risk Matrix: Land Improvements

15. Rolling Stock

The Township's rolling stock portfolio includes 53 assets that support a variety of general and essential services, including fire, recreation/culture, and transportation services. The total current replacement of rolling stock is estimated at approximately $12.2 million.

15.1 Inventory & Valuation

Table 43 summarizes the quantity and current replacement cost of all rolling stock assets available in the Township's asset register. Transportation and protection services account for the largest share of the rolling stock portfolio.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Protection Services	13	Assets	$5,366,223	CPI
Recreation & Cultural Services	10	Assets	$511,714	CPI
Transportation Services	30	Assets	$6,364,416	CPI
TOTAL			**$12,242,353**	

Table 43 Detailed Asset Inventory: Rolling Stock

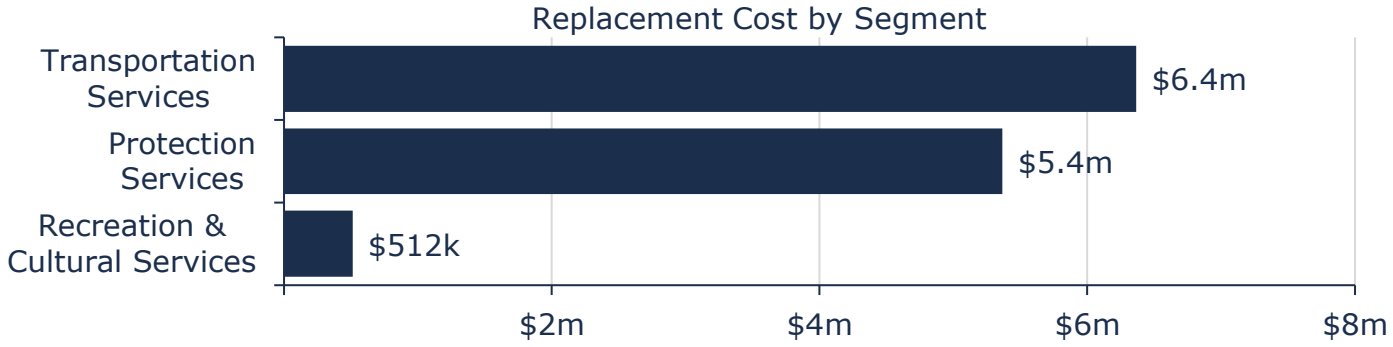


Figure 62 Portfolio Valuation: Rolling Stock

15.2 Asset Condition

Figure 63 summarizes the replacement cost-weighted condition of the Township's rolling stock portfolio. 84% of rolling stock are in fair or better condition, with the remaining 16% 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 70% of rolling stock assets, based on replacement costs; age was used to estimate condition for the remaining assets.

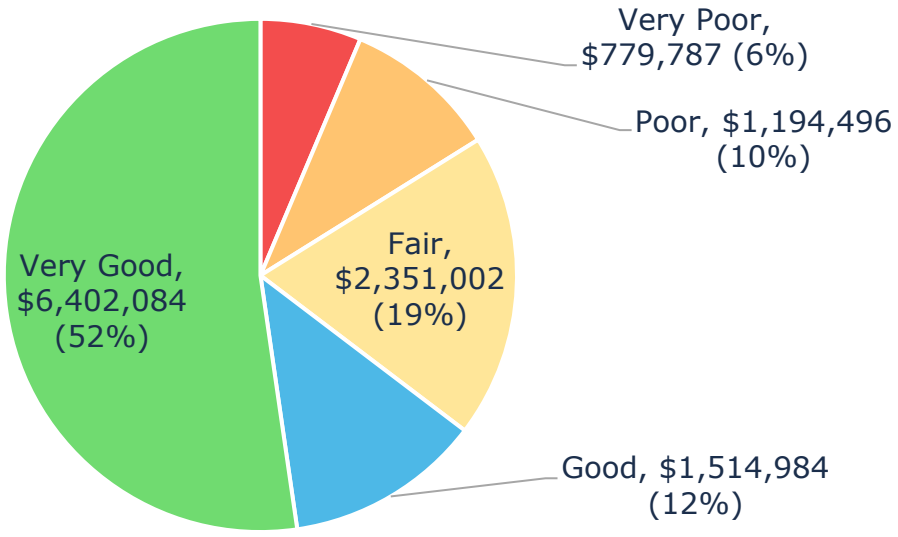


Figure 63 Asset Condition: Rolling Stock Overall

Figure 64 summarizes the condition of rolling stock by each department. The majority of rolling stock that support critical services such as transportation and protection are in good or very good condition.

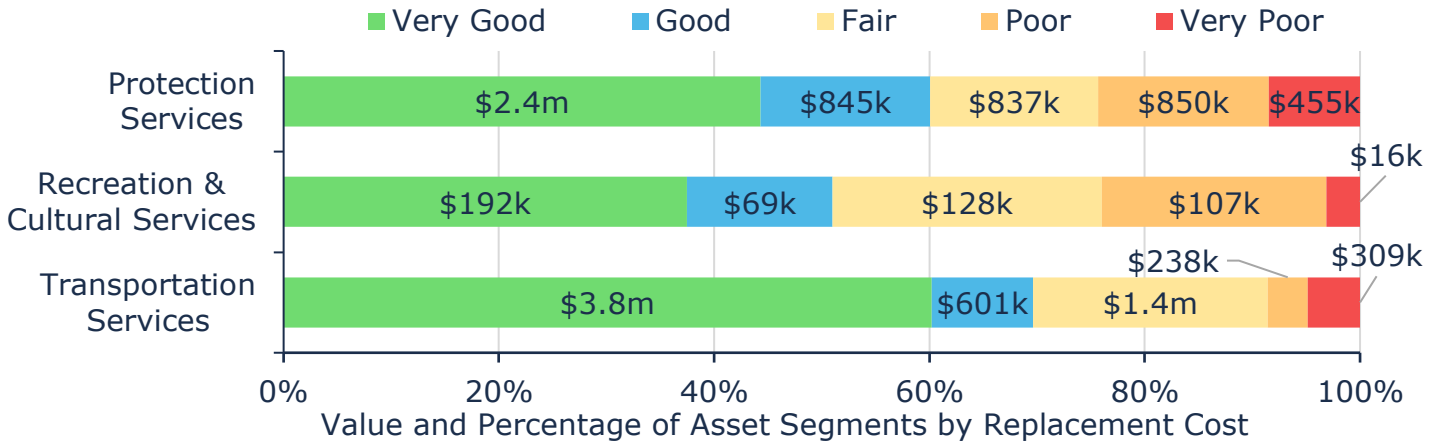


Figure 64 Asset Condition: Rolling Stock by Segment

15.3 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 65 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.

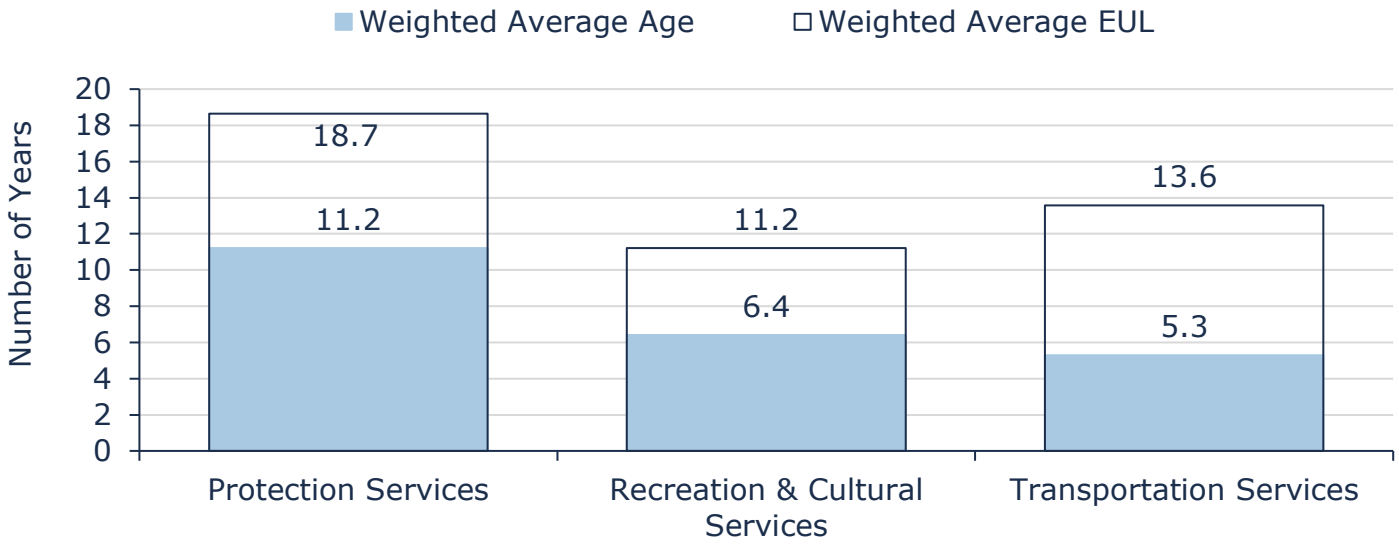


Figure 65 Estimated Useful Life vs. Asset Age: Rolling Stock

Age analysis reveals that, on average, most rolling stock assets are in the middle stages of their expected life, with protection services assets approaching the later stages.

15.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Maintenance is triggered based on hours/kilometers driven.Maintenance activities include routine tasks like oil changes (performed in-house) and specialized repairs conducted by external contractors.
Rehabilitation	Rehabilitation activities involve replacing major components like engines and other maintenance parts. Without the availability of up-to-date condition assessment information, replacement activities are purely reactive in nature.
Replacement	A replacement schedule is in place, with pickup trucks being replaced after 10 years and larger rolling stock after 15-20 years. Assets nearing the end of their service life are prioritized for replacement.
Inspections	Rolling stock and equipment undergo daily safety checks before use. Larger rolling stock receive a thorough annual inspection by external contractors. Condition data informs the replacement schedule.
	Fire Assets are assessed as per NFPA standards.

Table 44 Lifecycle Management Strategy: Rolling Stock

15.5 Forecasted Long-Term Replacement Needs

Figure 66 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's rolling stock portfolio. This analysis was run until 2040 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $847,000 for all rolling stock. 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 steadily over the next couple decades, peaking at $5.9 million in 2036-2040 as rolling stock assets 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.

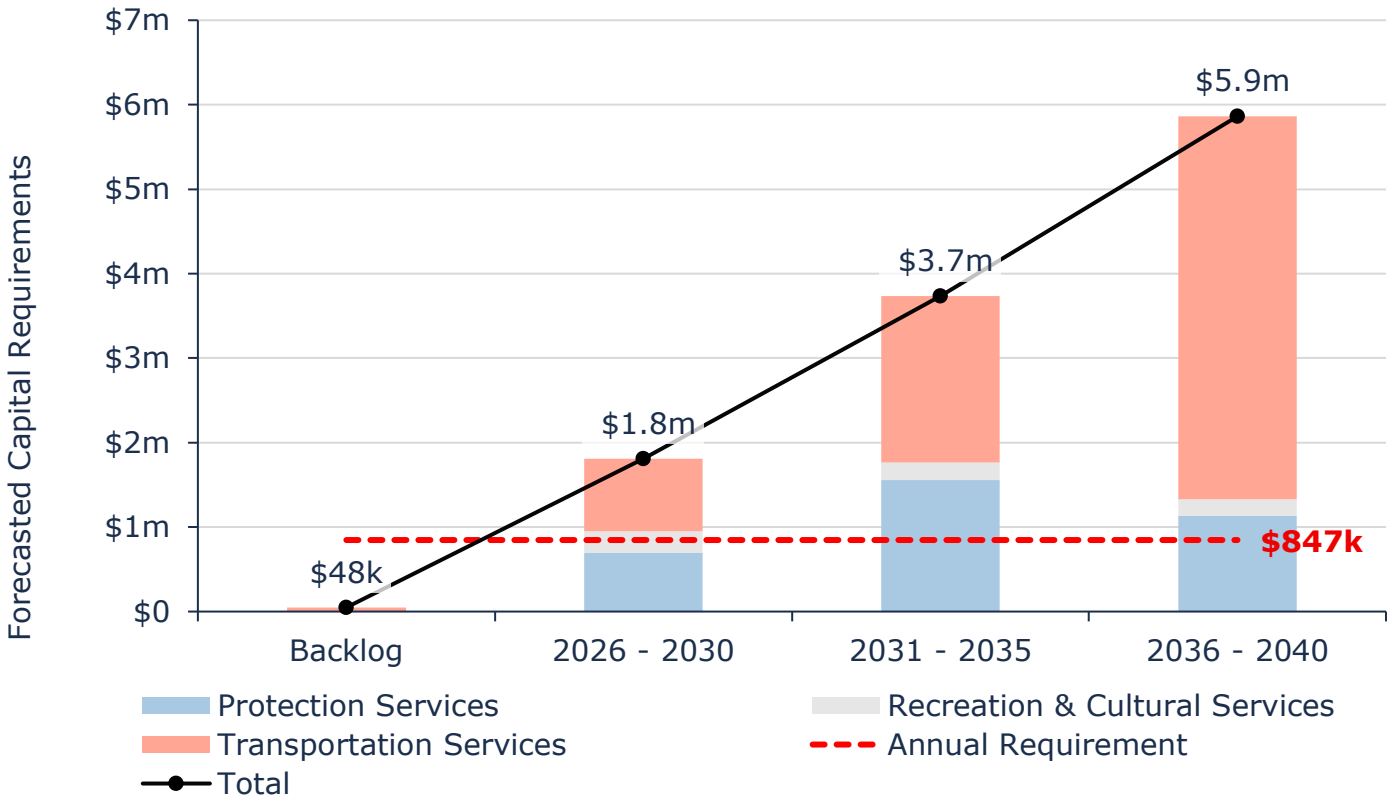


Figure 66 Forecasted Capital Replacement Needs: Rolling Stock 2026-20430

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

15.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, and replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$865,940 (7%)	$6,298,820 (51%)	$410,818 (3%)	$1,320,192 (11%)	$3,346,583 (27%)

Figure 67 Risk Matrix: Rolling Stock

16. Machinery & Equipment

The Township's machinery and equipment portfolio includes 240 assets that support a variety of general and essential services, including transportation, protection, general government, library, and recreation. The total current replacement of machinery and equipment is estimated at approximately $5.9 million.

16.1 Inventory & Valuation

Table 45 summarizes the quantity and current replacement cost of all machinery and equipment assets available in the Township's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
General Government	18	Assets	$1,071,660	CPI
Library Services	27	Assets	$588,324	CPI
Protection Services	161	Assets	$1,654,949	CPI
Recreation and Cultural Services	11	Assets	$2,018,086	CPI
Transportation Services	23	Assets	$581,787	CPI
TOTAL			**$5,914,806**	

Table 45 Detailed Asset Inventory: Machinery & Equipment

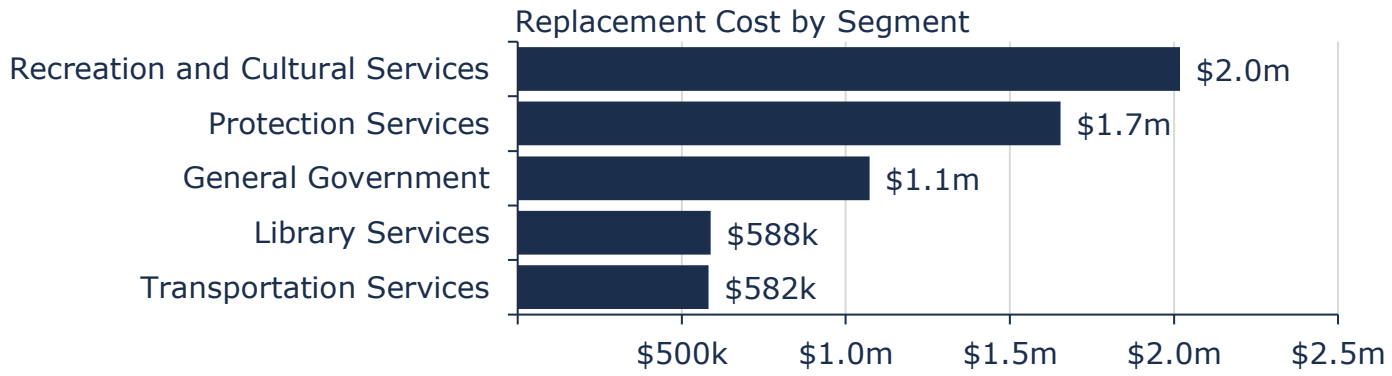


Figure 68 Portfolio Valuation: Machinery & Equipment

16.2 Asset Condition

Figure 69 summarizes the replacement cost-weighted condition of the Township's machinery and equipment portfolio. Based on age and condition assessment data, 71% of assets are in fair or

better condition; the remaining 29% 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 assessments are available for 49% of machinery and equipment assets.

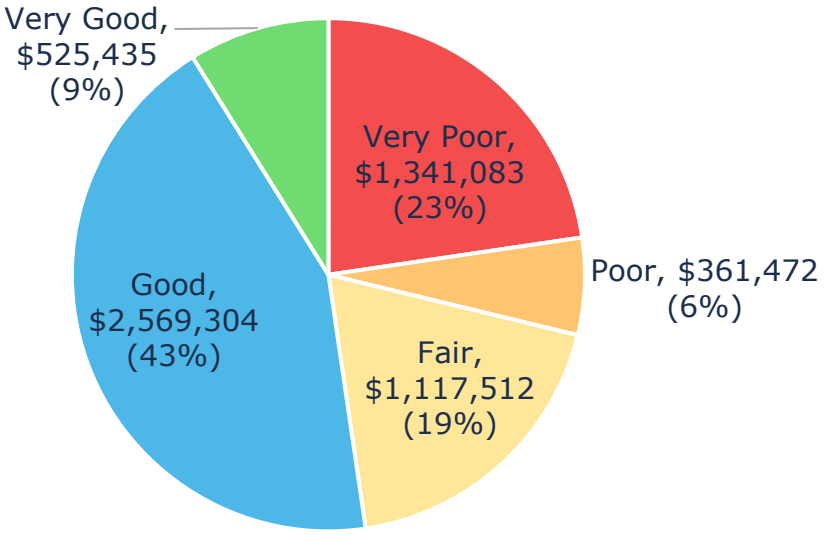


Figure 69 Asset Condition: Machinery & Equipment Overall

Figure 70 summarizes the condition of machinery and equipment by each department. The majority of assets in all departments are in fair or better condition. There is a notable proportion of general government, library, protection, and transportation assets in very poor condition.

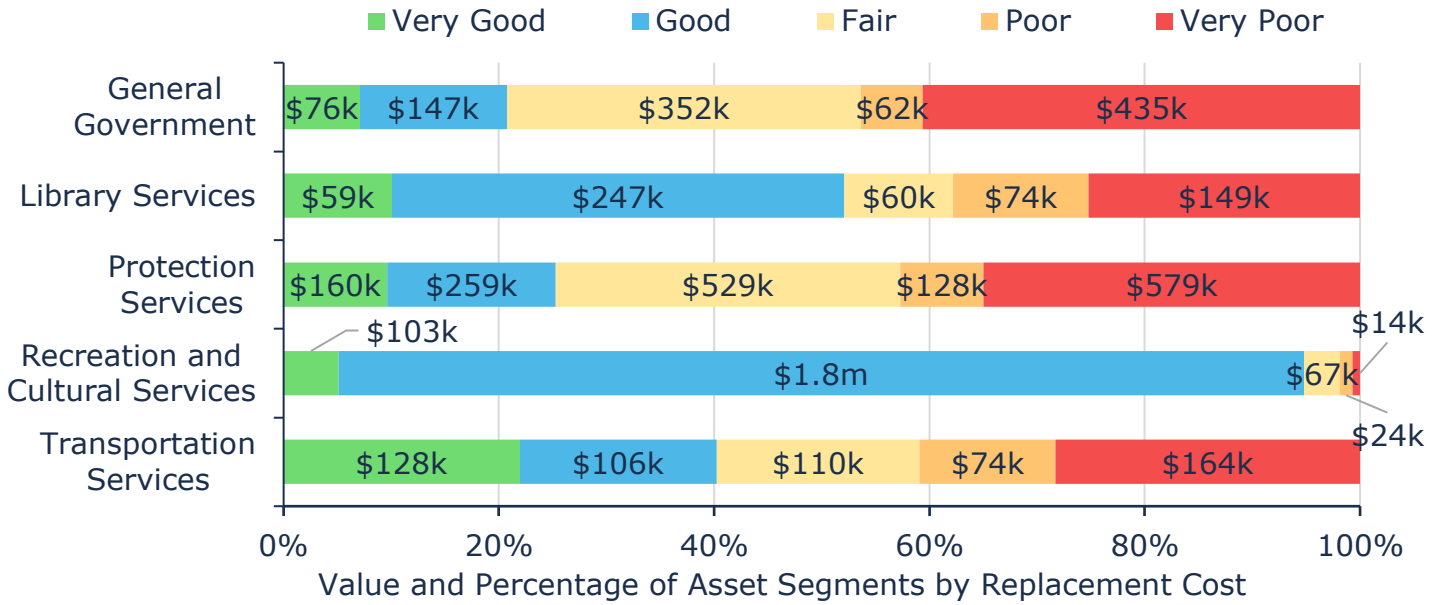


Figure 70 Asset Condition: Machinery & Equipment by Segment

16.3 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 71 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.

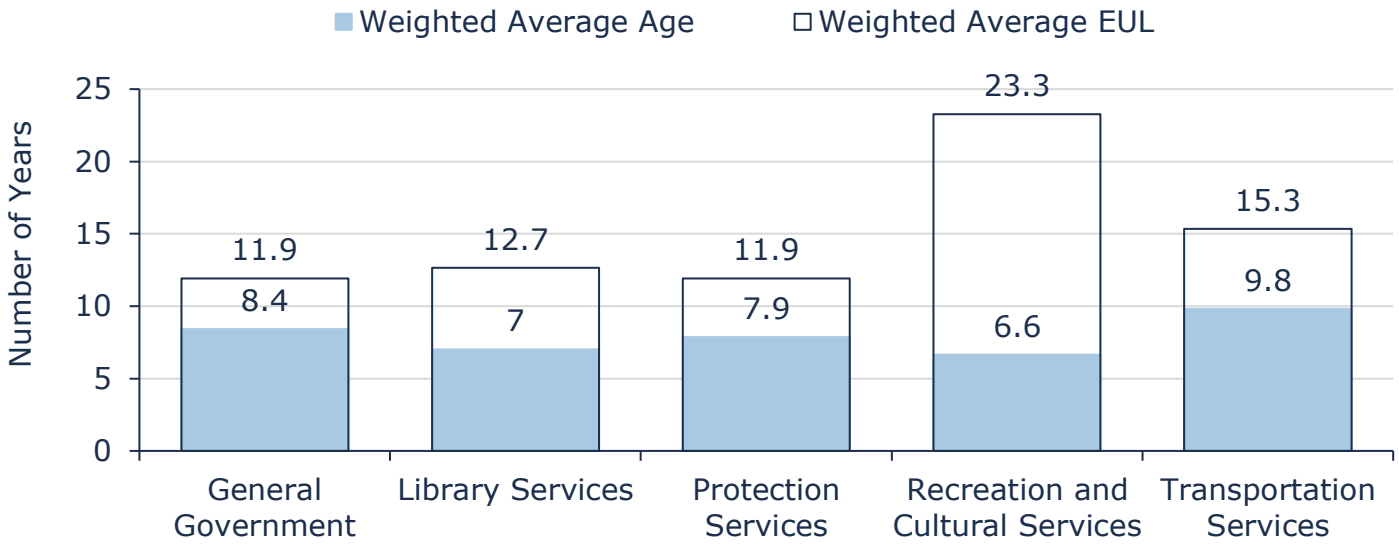


Figure 71 Estimated Useful Life vs. Asset Age: Machinery & Equipment

Age analysis reveals that, on average, most machinery and equipment assets are reaching the end of their expected lives. Recreation assets are still in the beginning stages.

16.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Oil changes and routine maintenance is completed as per manufacturer recommendations
	All other maintenance activities are completed on a reactive basis when operational issues are identified (e.g., mechanical breakdown, deficiencies identified during daily inspections)
Replacement	Without the availability of up-to-date condition assessment information replacement activities are purely reactive in nature
Inspections	Heavy equipment is inspected by the operator daily before use; however, these inspections identify deficiencies but do not provide overall condition ratings
	Fire Assets are assessed as per NFPA standards.

Table 46 Lifecycle Management Strategy: Machinery & Equipment

16.5 Forecasted Long-Term Replacement Needs

Figure 72 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's machinery and equipment portfolio. This analysis was run until 2055 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements (red dotted line) total $497,000 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 rise steadily over the next couple of decades and spike at $3.5 million in 2041-2045. These projections and estimates are based on asset replacement costs, condition, 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.

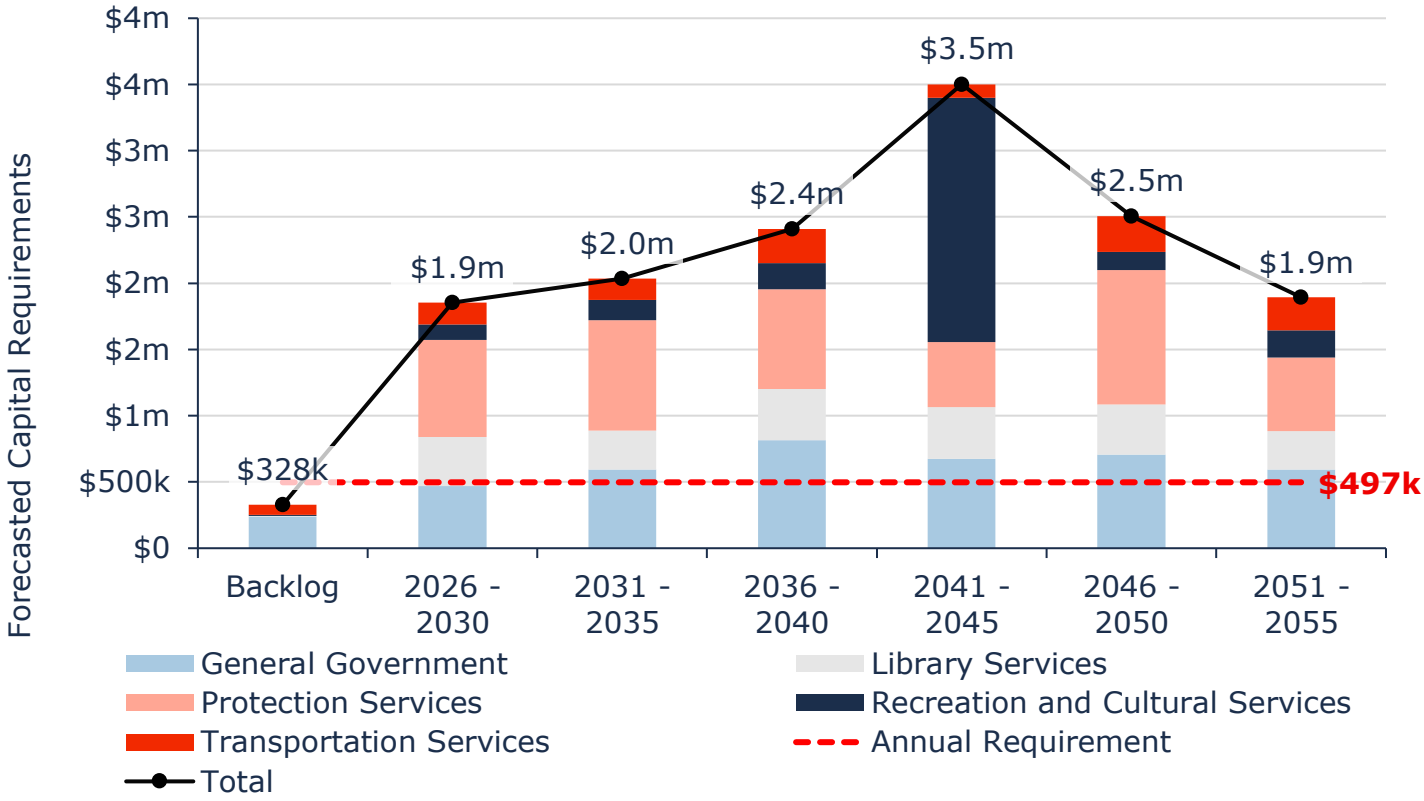


Figure 72 Forecasted Capital Replacement Needs: Machinery & Equipment 2026-2055

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.

Please note: these projections reflect Scenario 2 (100% Requirements).

16.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, and replacement costs. Breakdowns of the risk criteria used for probability and consequence of failure can be found in Appendix E – Risk Rating Criteria.

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

These risk models have been built into the Township's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low $1,630,292 (28%)	5 - 7 Low $725,017 (12%)	8 - 9 Moderate $377,176 (6%)	10 - 14 High $2,102,332 (36%)	15 - 25 Very High $1,079,989 (18%)

Figure 73 Risk Matrix: Machinery & Equipment

Appendix A – 10-Year Capital Requirements

The financial requirements for scenario 3: 75% Requirements are summarized in the table below. In some years, actual capital investments will be greater than or less than the funds allocated. These funds are to be carried forward in future years to allow for larger expenditures where needed.

Category	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Roads Network	$2.5m	$2.7m	$2.9m	$3.0m	$3.2m	$3.4m	$3.6m	$3.8m	$4.0m	$4.2m
Bridges & Culverts	$30k	$600k	$505k	-	$1.2m	$381k	-	$1.8m	$321k	-
Water Network	$75k	$145k	$108k	$162k	$72k	$156k	$142k	$177k	$174k	$118k
Sanitary Network	$103k	$127k	$146k	$164k	$181k	$206k	$234k	$243k	$269k	$291k
Storm Network	$92k	$104k	$90k	$143k	$144k	$150k	$157k	$180k	$187k	$200k
Facilities	$210k	$241k	$248k	$292k	$327k	$340k	$355k	$413k	$421k	$468k
Land Improvements	$12k	-	-	-	-	-	$276k	$30k	-	-
Rolling Stock	$131k	$37k	$311k	$252k	$217k	$237k	$279k	$286k	$326k	$326k
Machinery & Equipment	$89k	$104k	$113k	$124k	$135k	$147k	$158k	$169k	$182k	$195k
Total	**$3.3m**	**$4.0m**	**$4.4m**	**$4.2m**	**$5.5m**	**$5.0m**	**$5.2m**	**$7.0m**	**$5.9m**	**$5.8m**

Table 47 System Generated Proposed LOS 10-Year Capital Replacement Forecast: All Categories

Appendix B – PLOS: Condition Projections

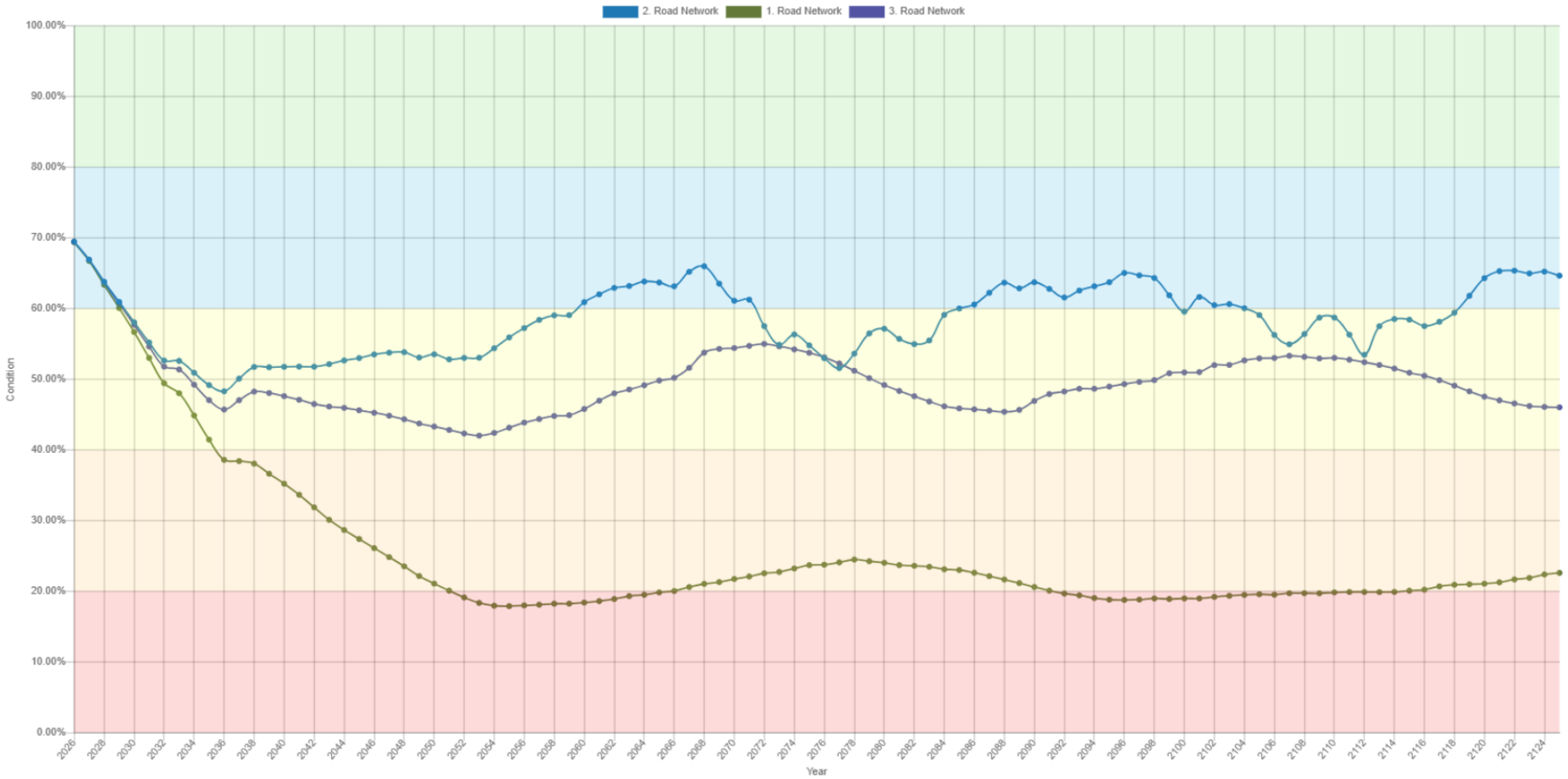


Figure 74 Condition by PLOS Scenario: Roads Network

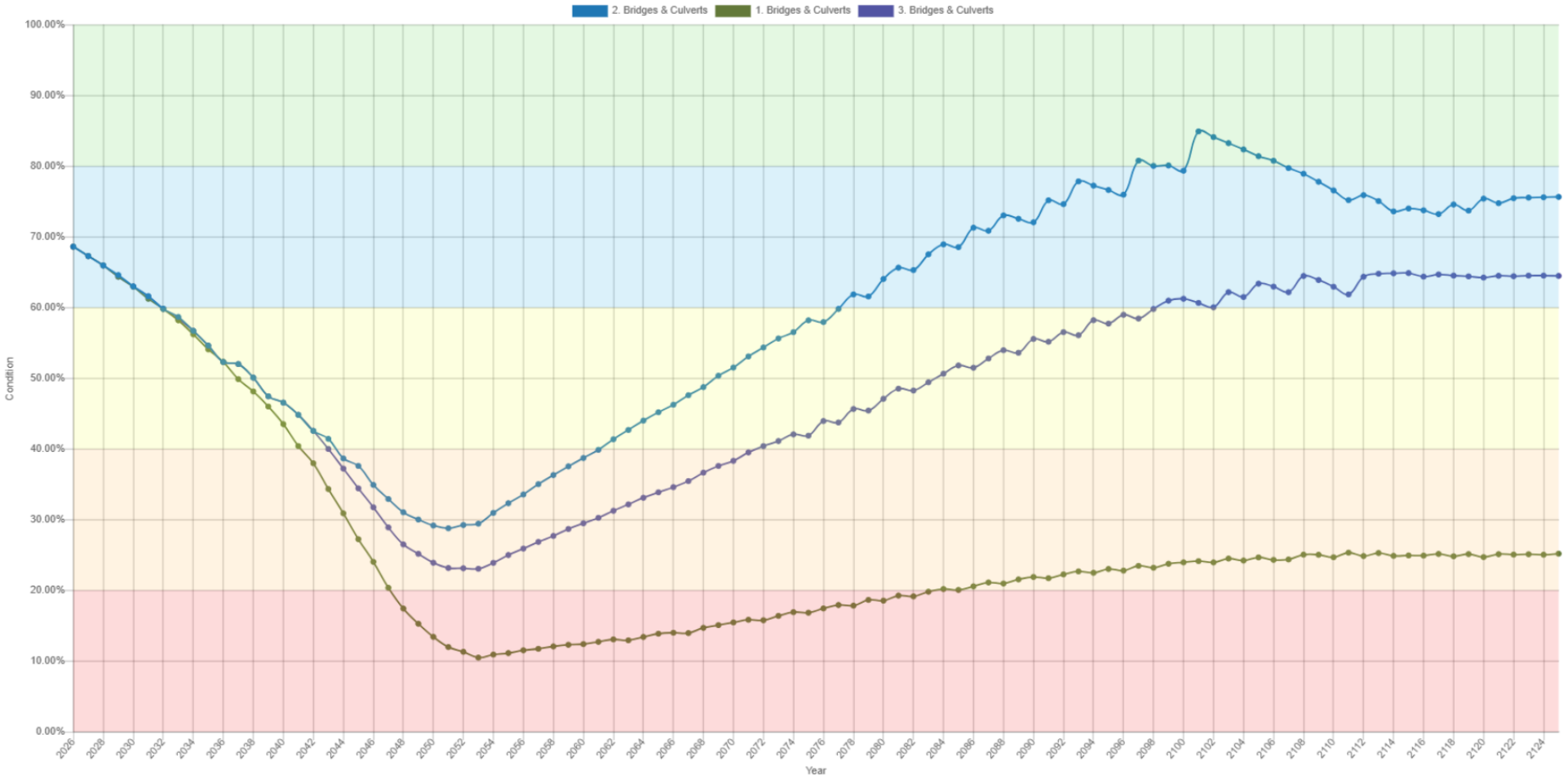


Figure 75 Condition by PLOS Scenario: Bridges & Culverts

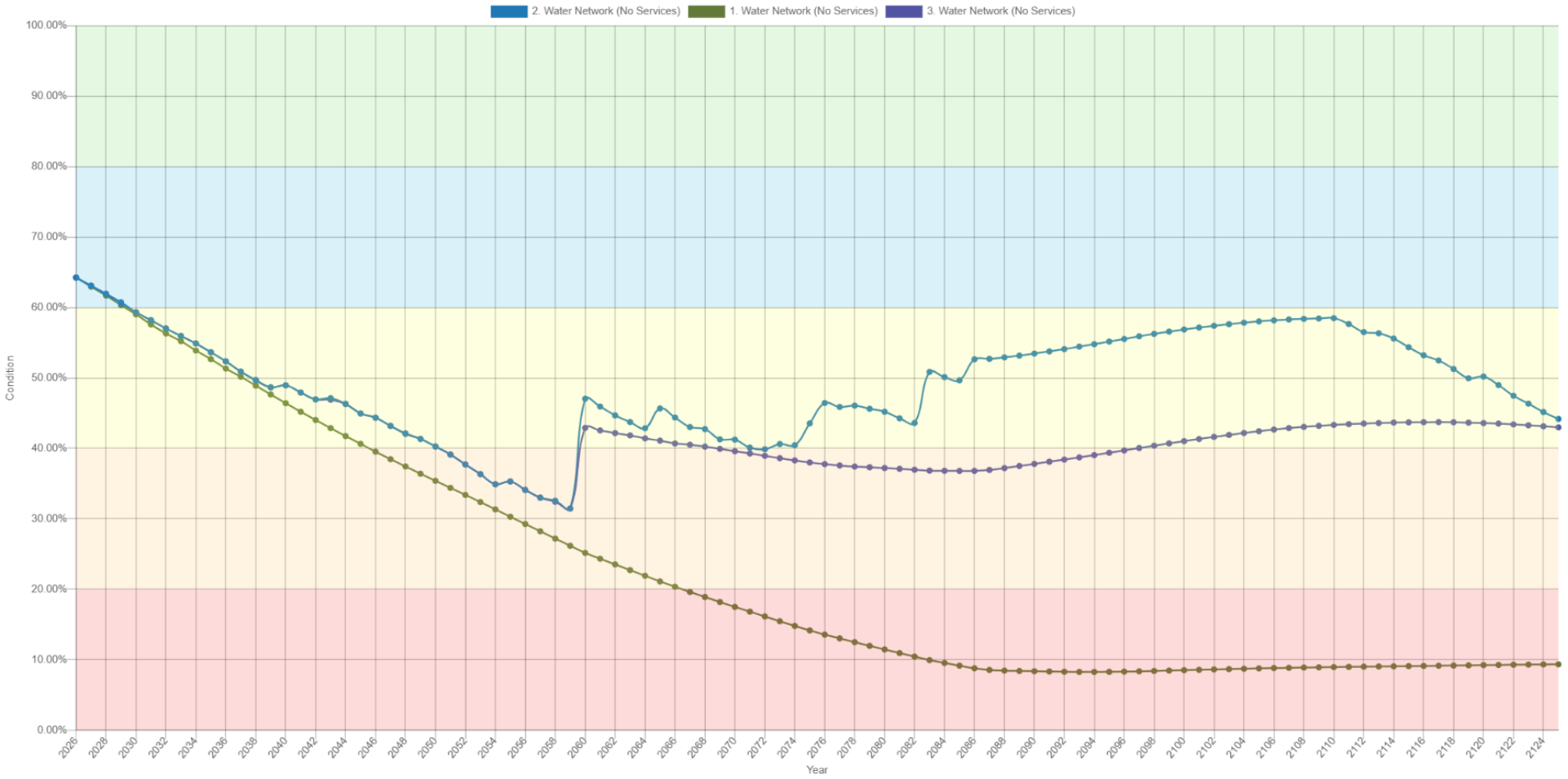


Figure 76 Condition by PLOS Scenario: Water Network

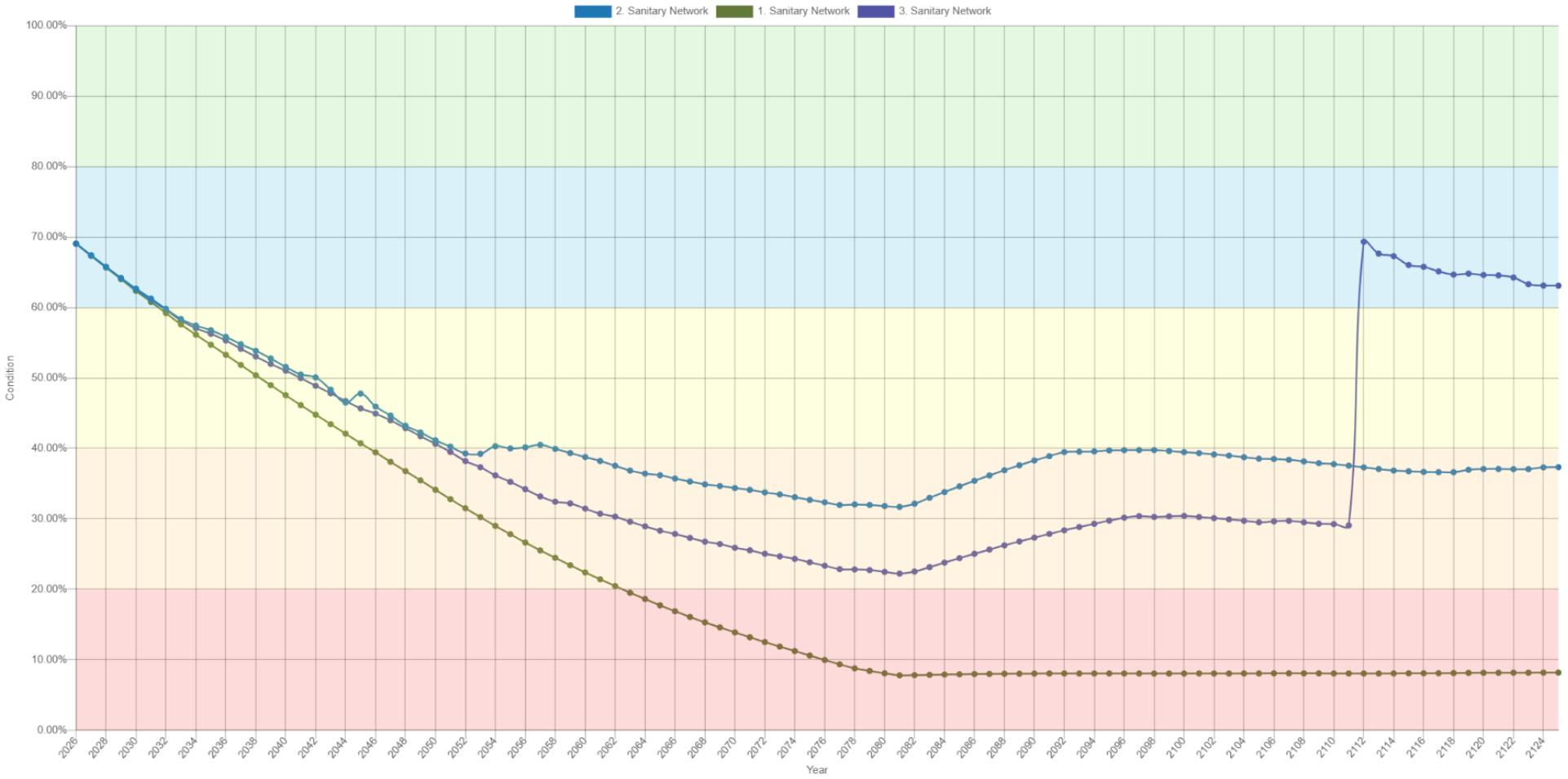


Figure 77 Condition by PLOS Scenario: Sanitary Network

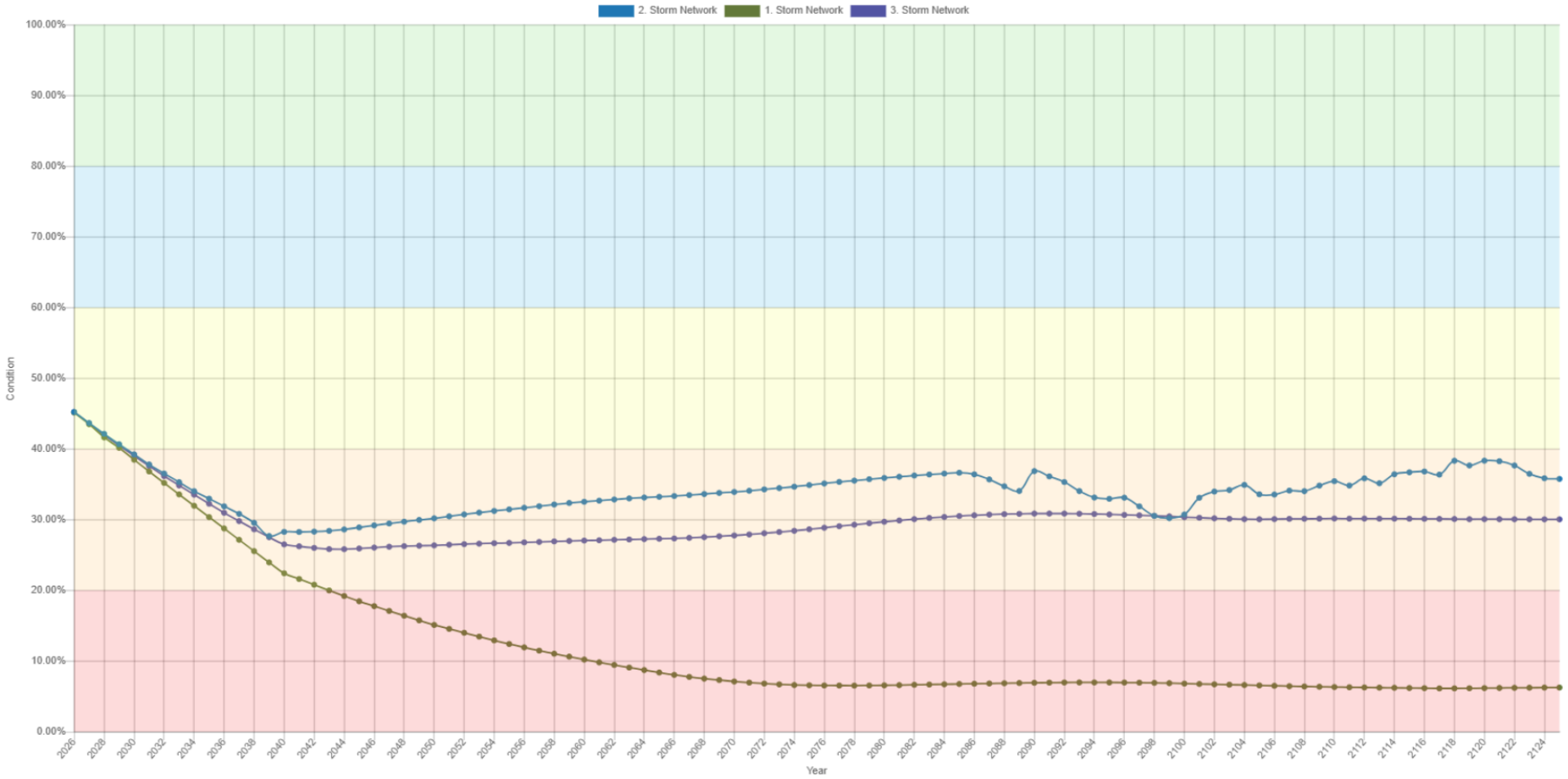


Figure 78 Condition by PLOS Scenario: Storm Network

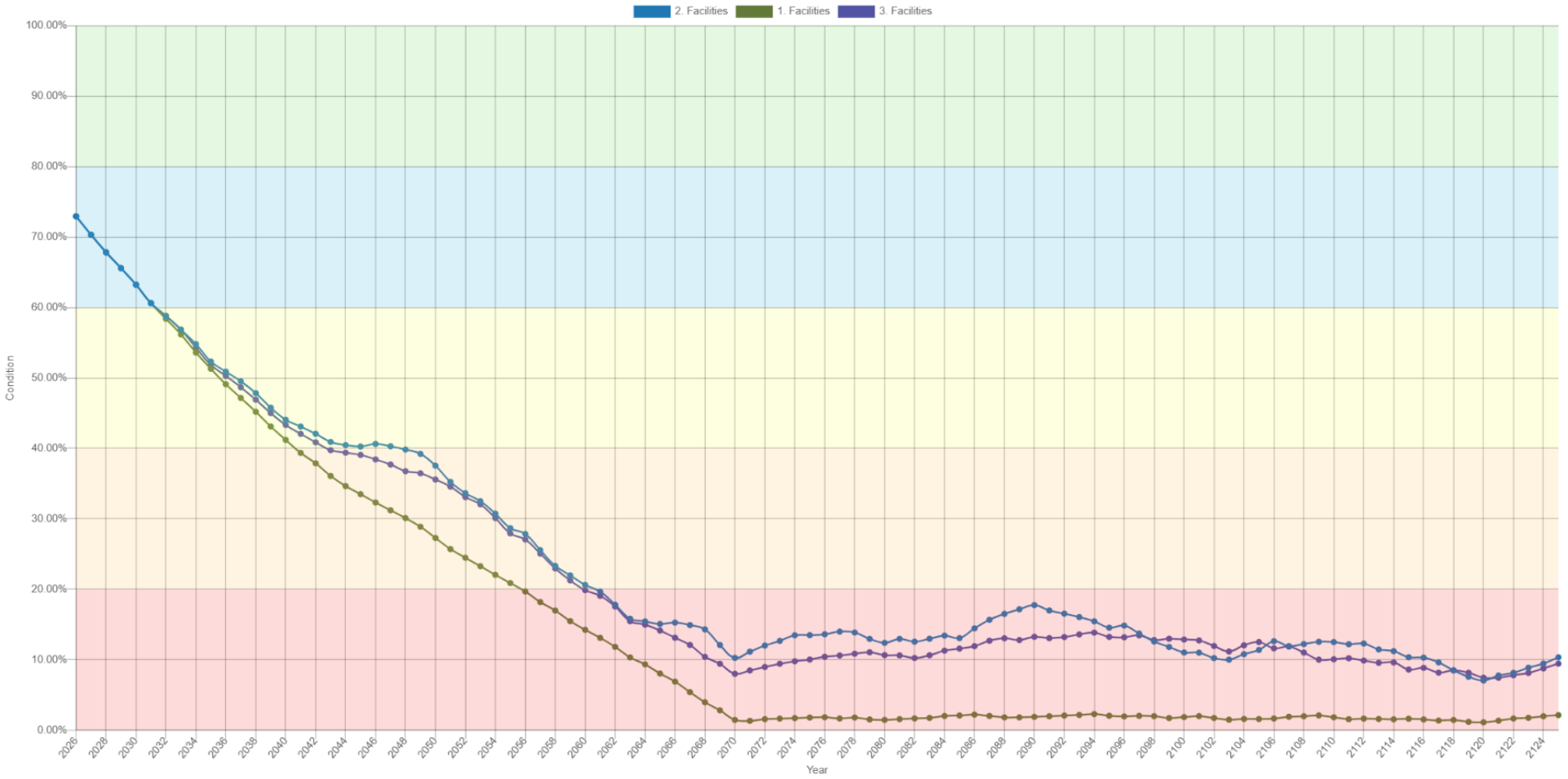


Figure 79 Condition by PLOS Scenario: Facilities

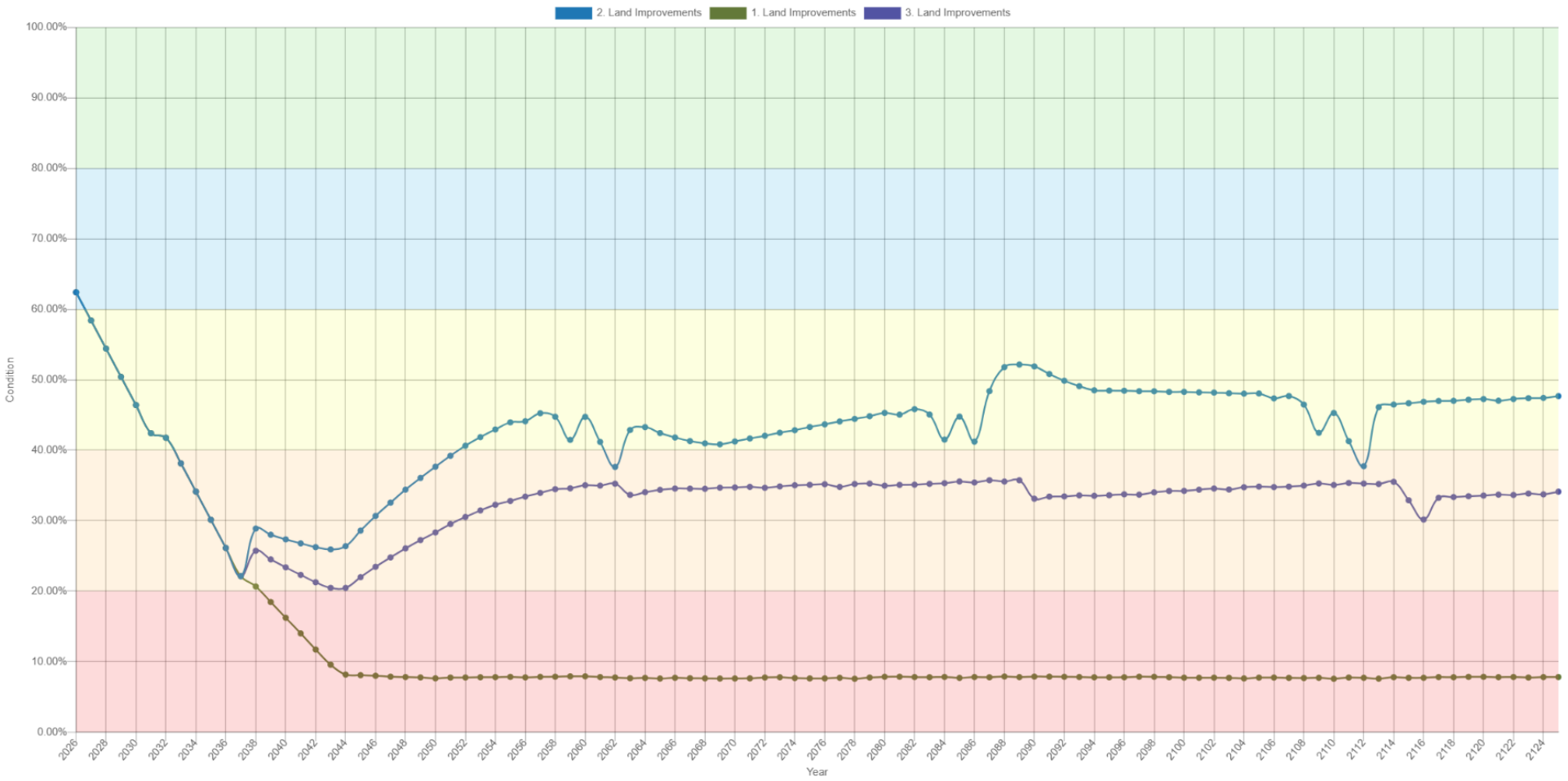


Figure 80 Condition by PLOS Scenario: Land Improvements

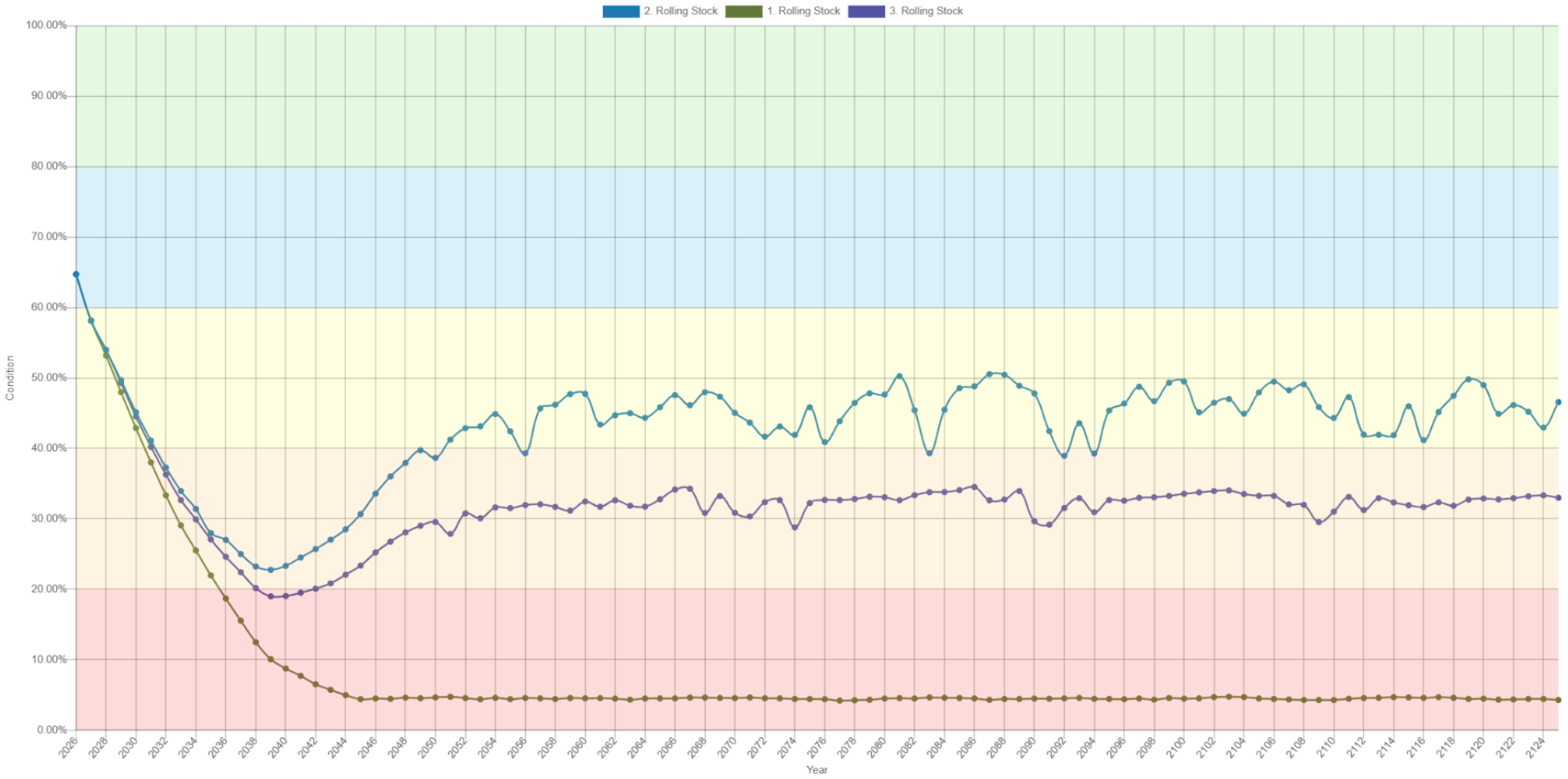


Figure 81 Condition by PLOS Scenario: Rolling Stock

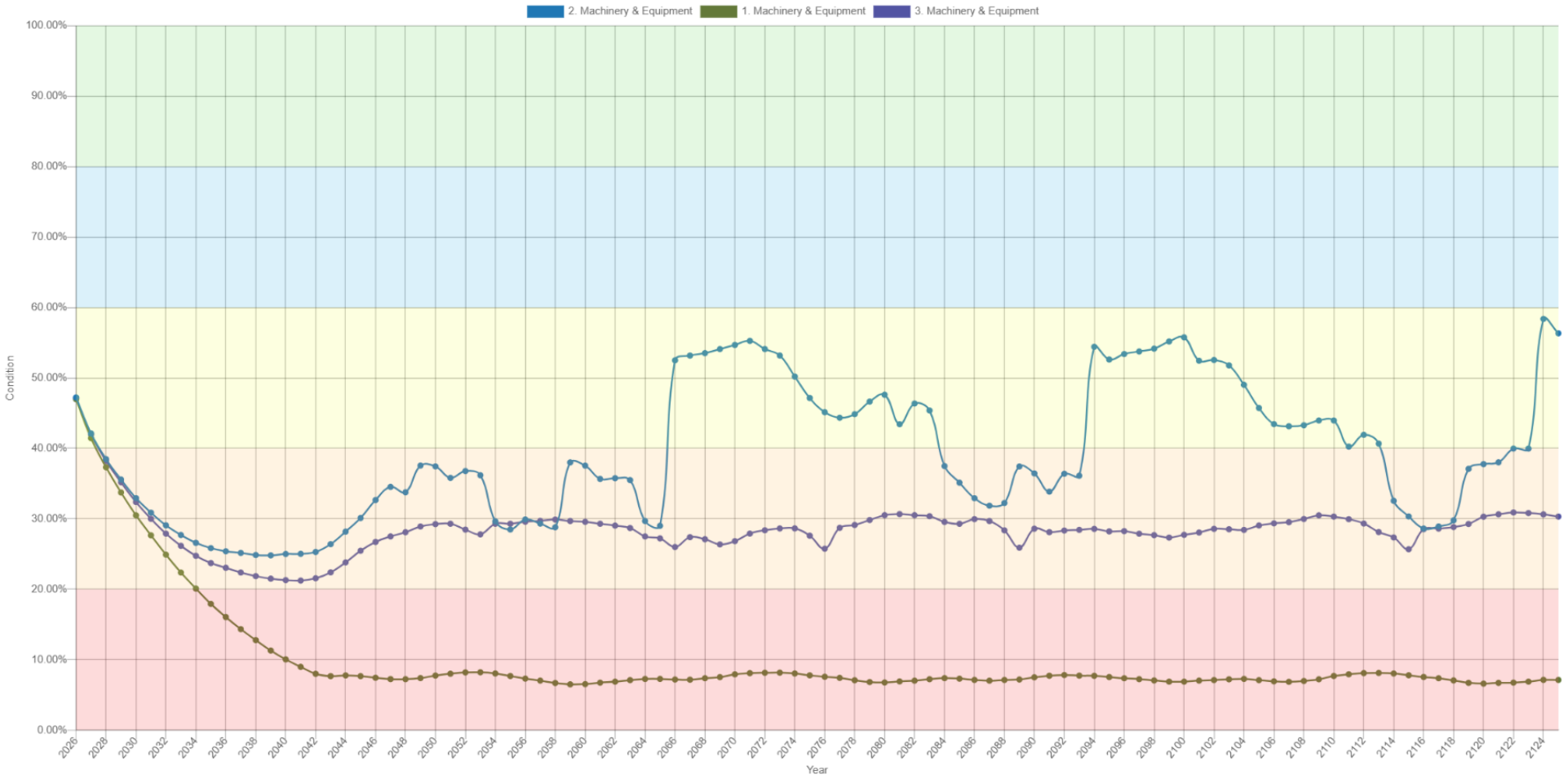


Figure 82 Condition by PLOS Scenario: Machinery & Equipment

Appendix C – PLOS: Risk Projections

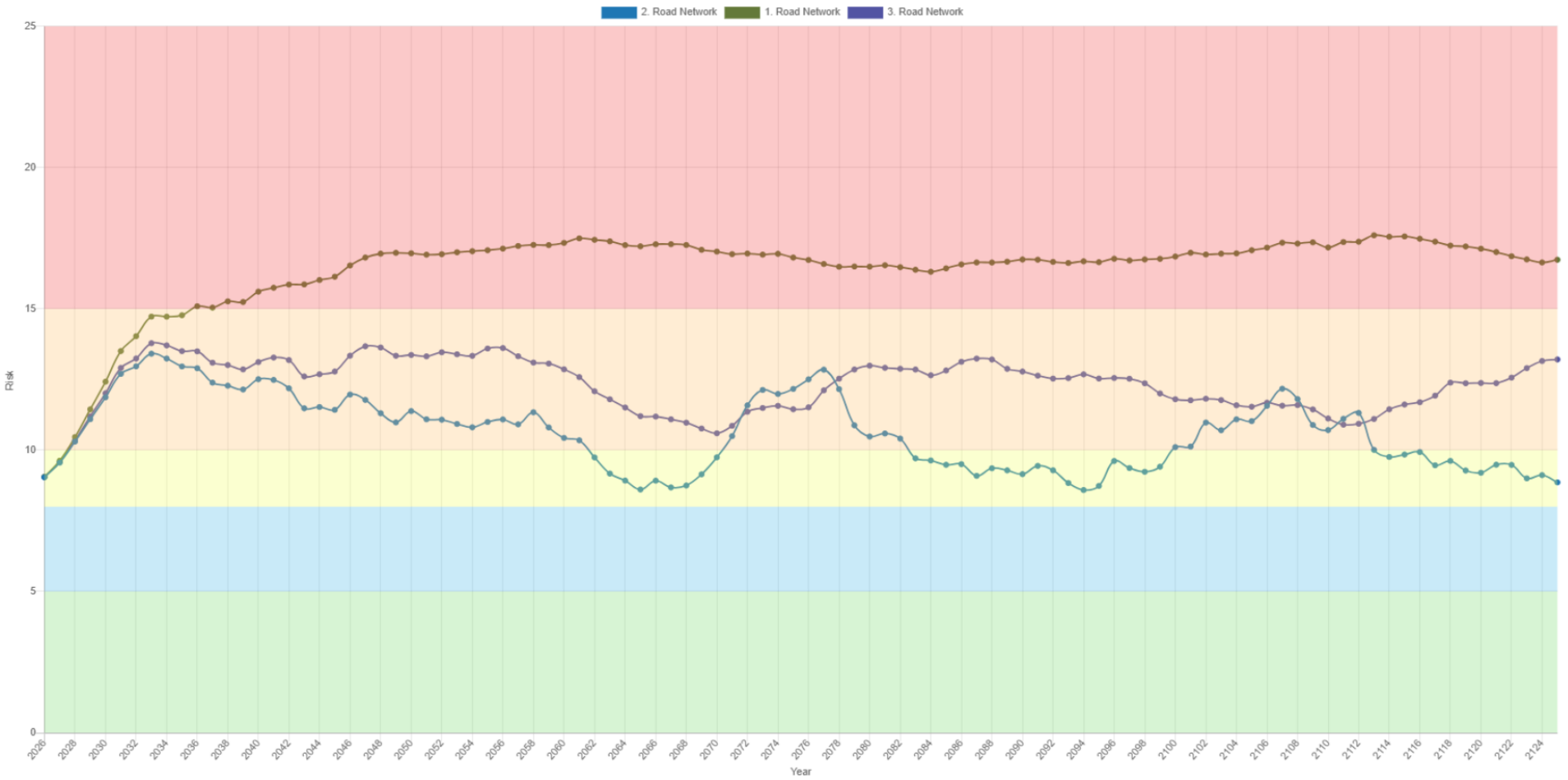


Figure 83 Risk by PLOS Scenario: Roads Network

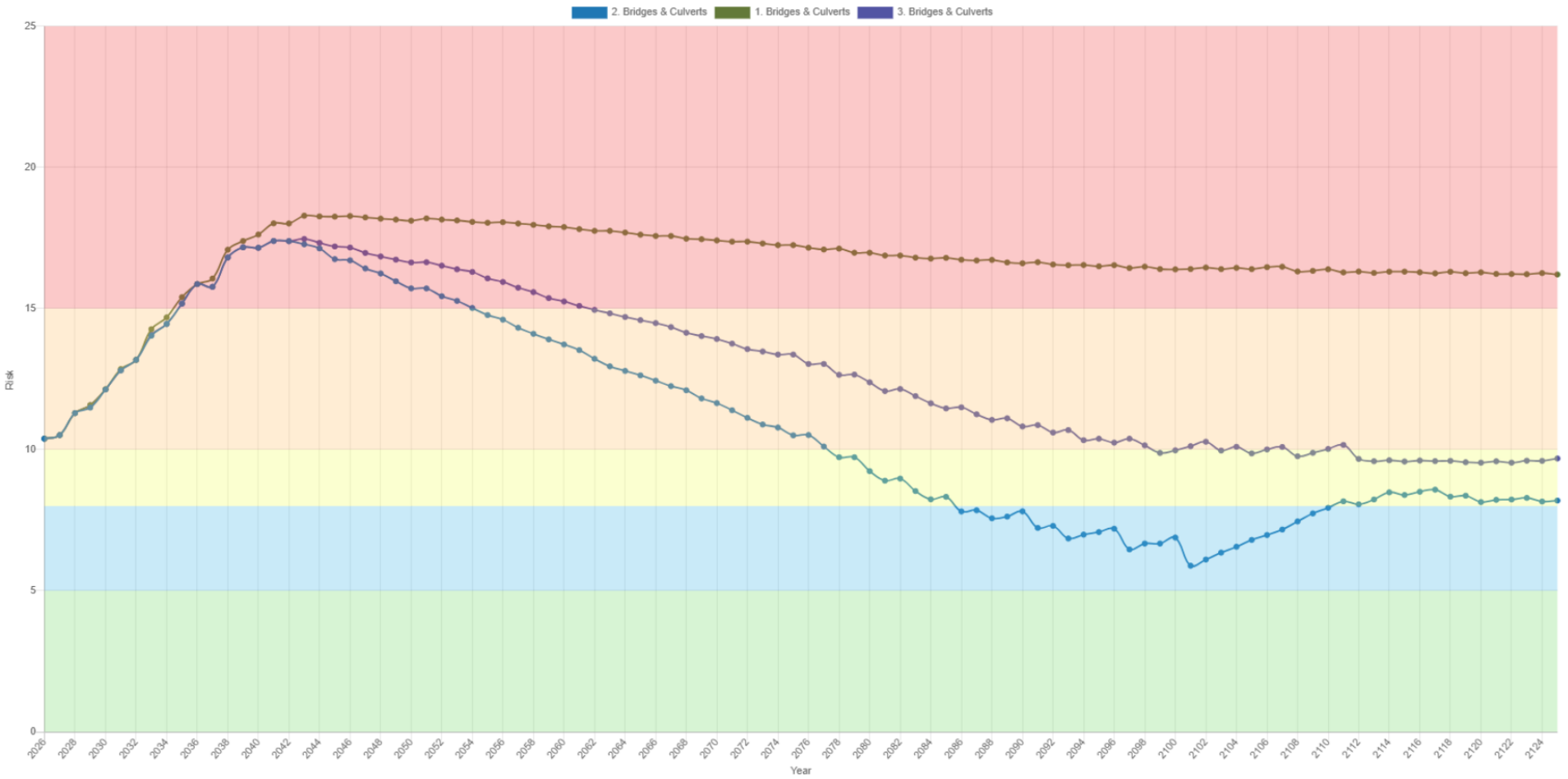


Figure 84 Risk by PLOS Scenario: Bridges & Culverts

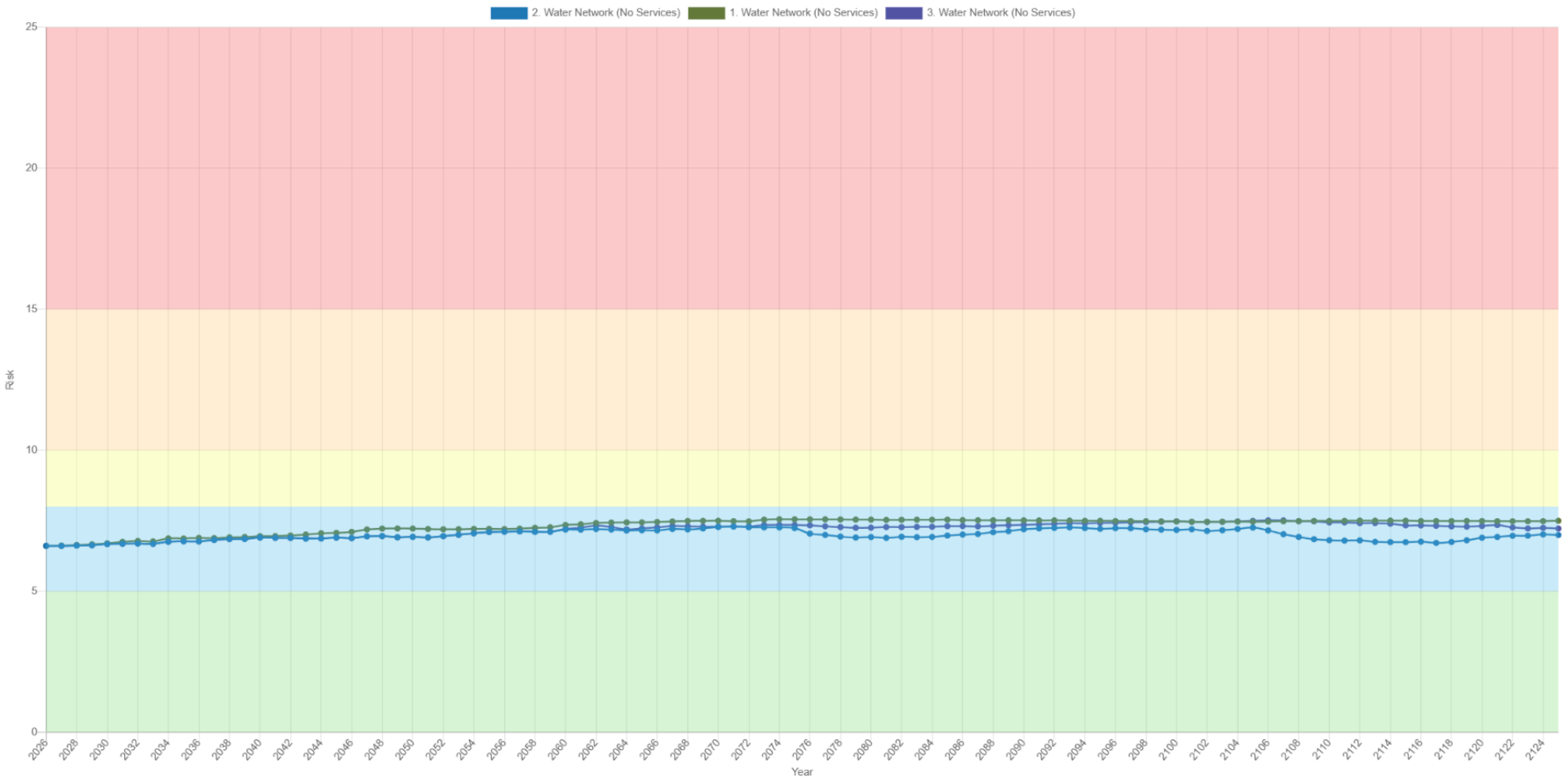


Figure 85 Risk by PLOS Scenario: Water Network

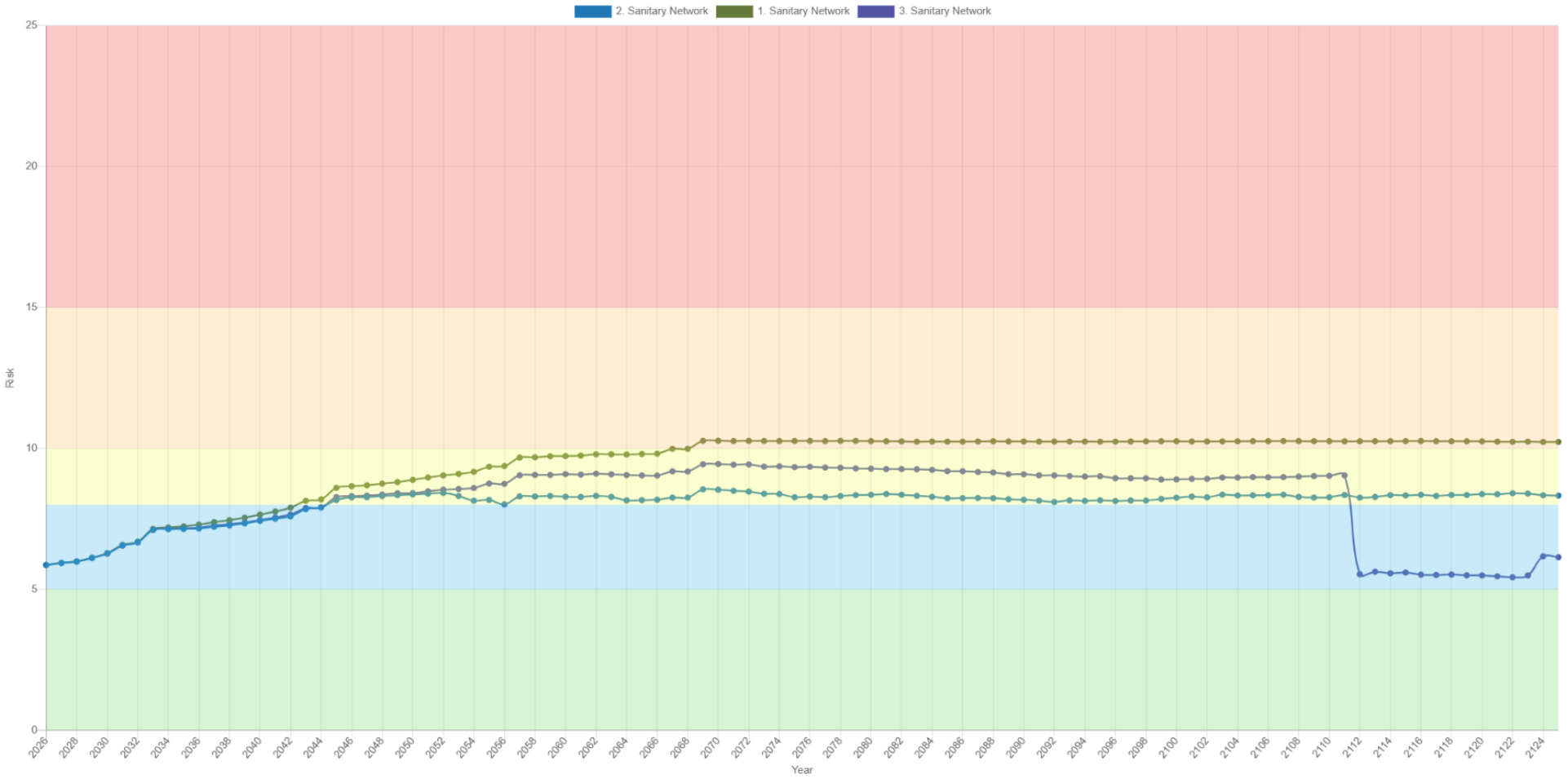


Figure 86 Risk by PLOS Scenario: Sanitary Network

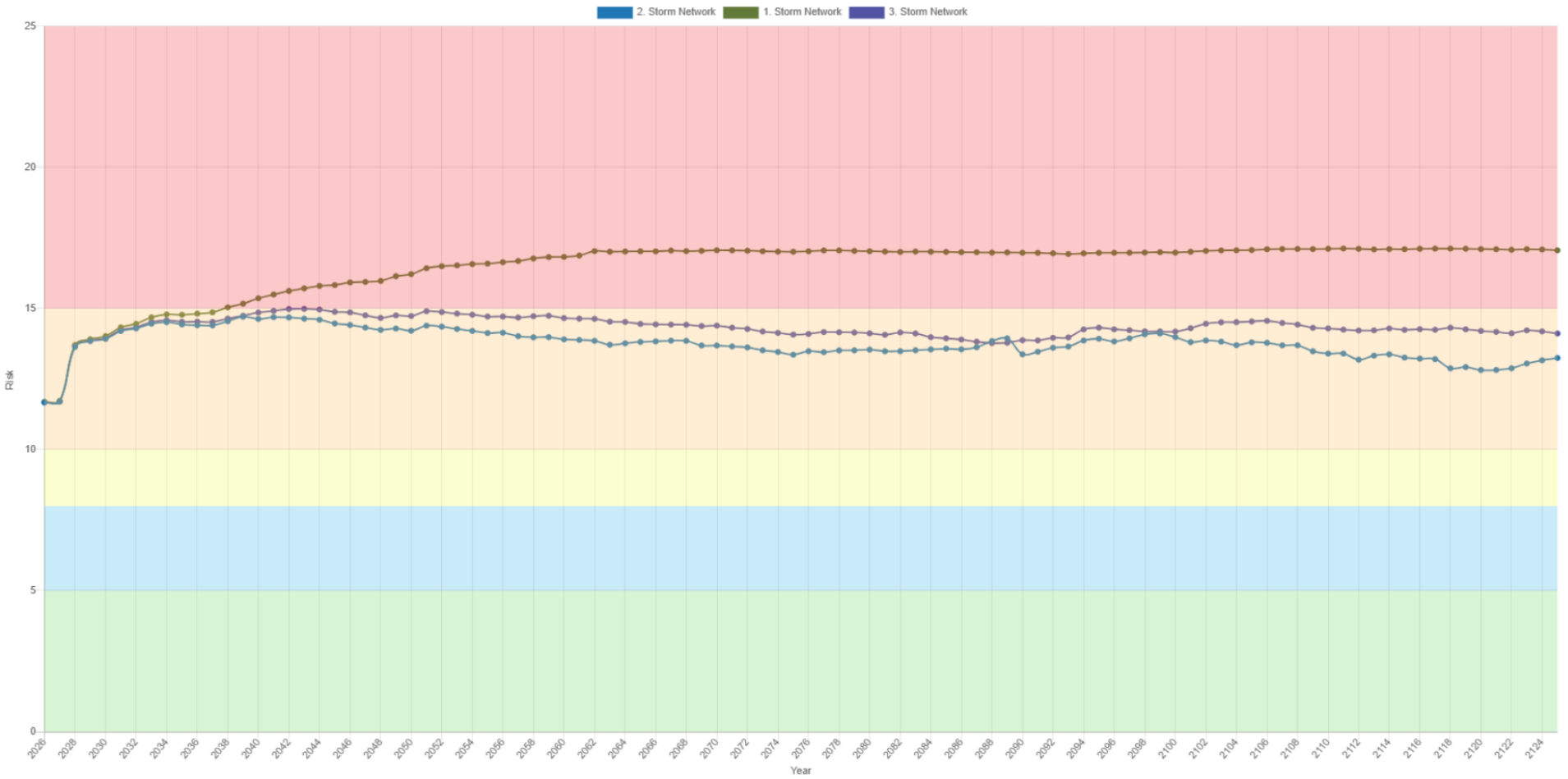


Figure 87 Risk by PLOS Scenario: Storm Network

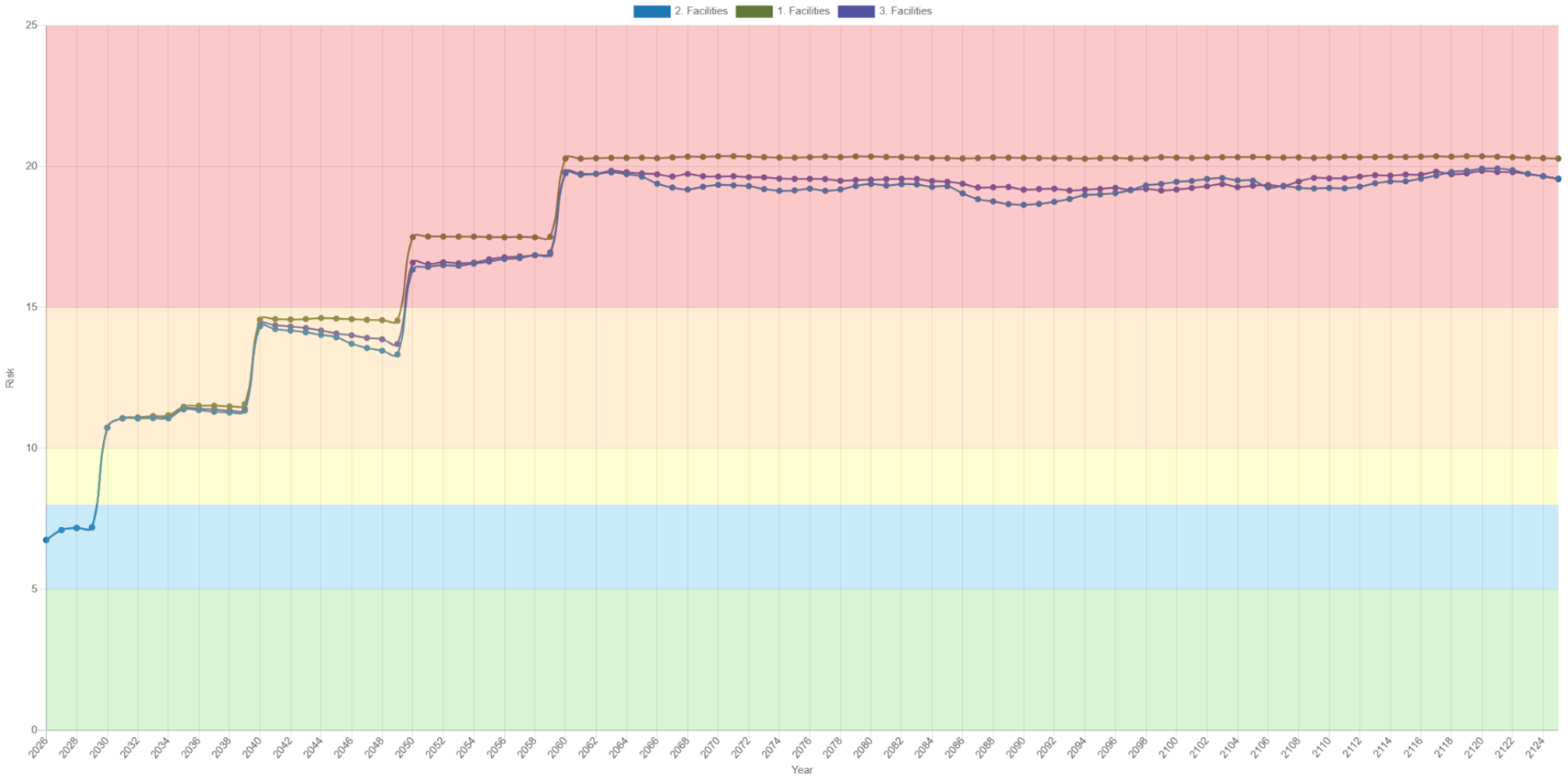


Figure 88 Risk by PLOS Scenario: Facilities

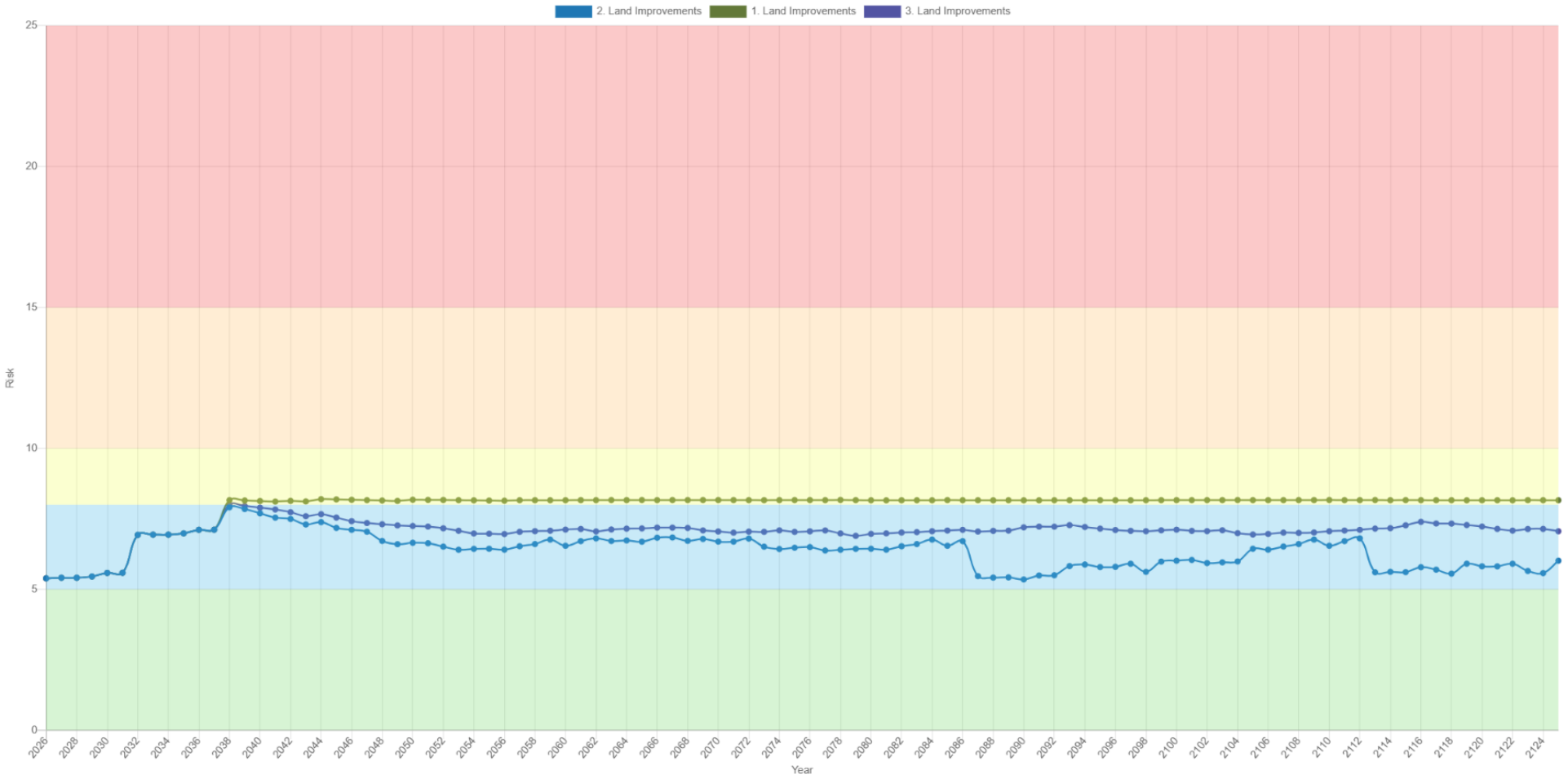


Figure 89 Risk by PLOS Scenario: Land Improvements

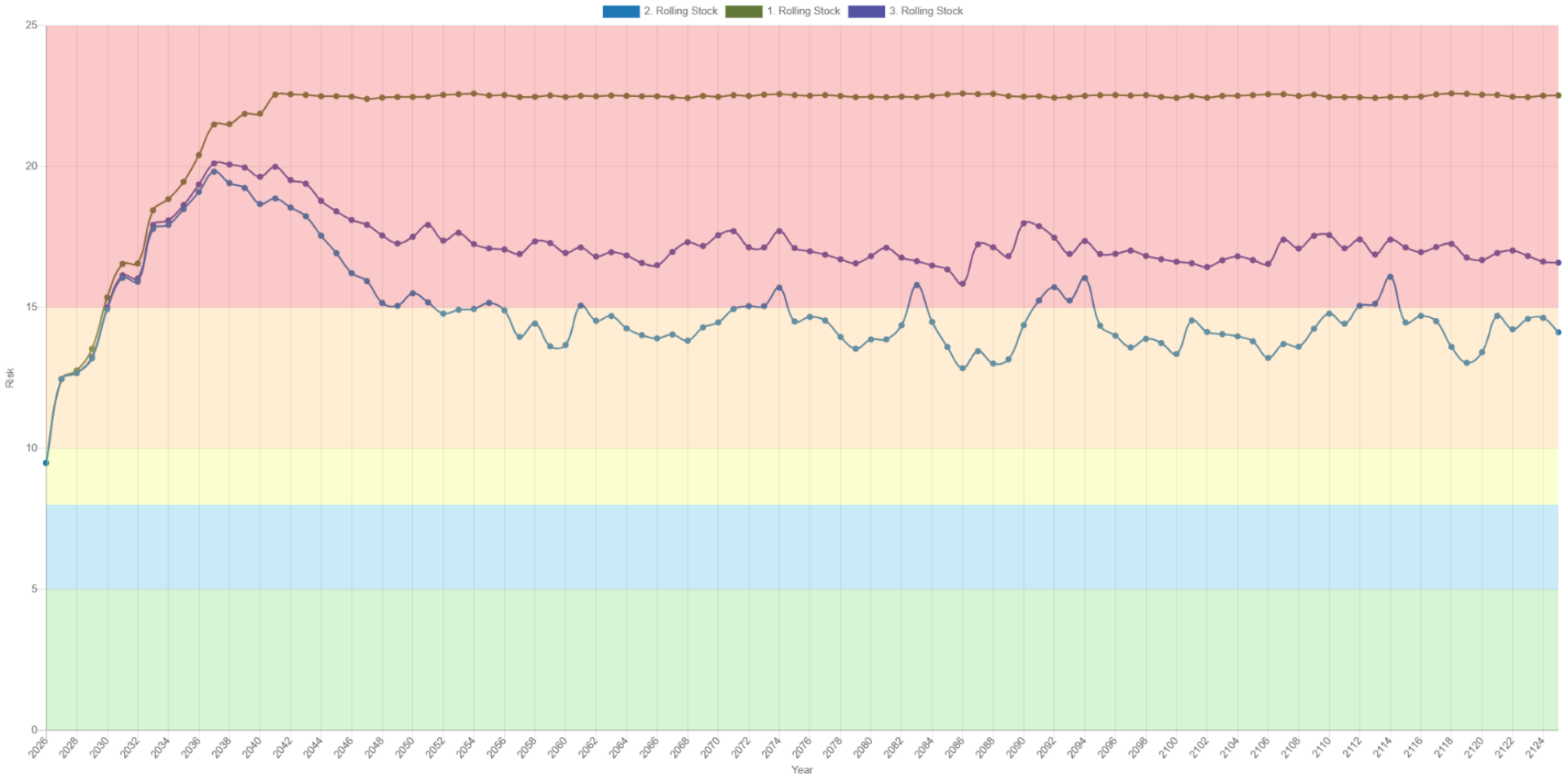


Figure 90 Risk by PLOS Scenario: Rolling Stock

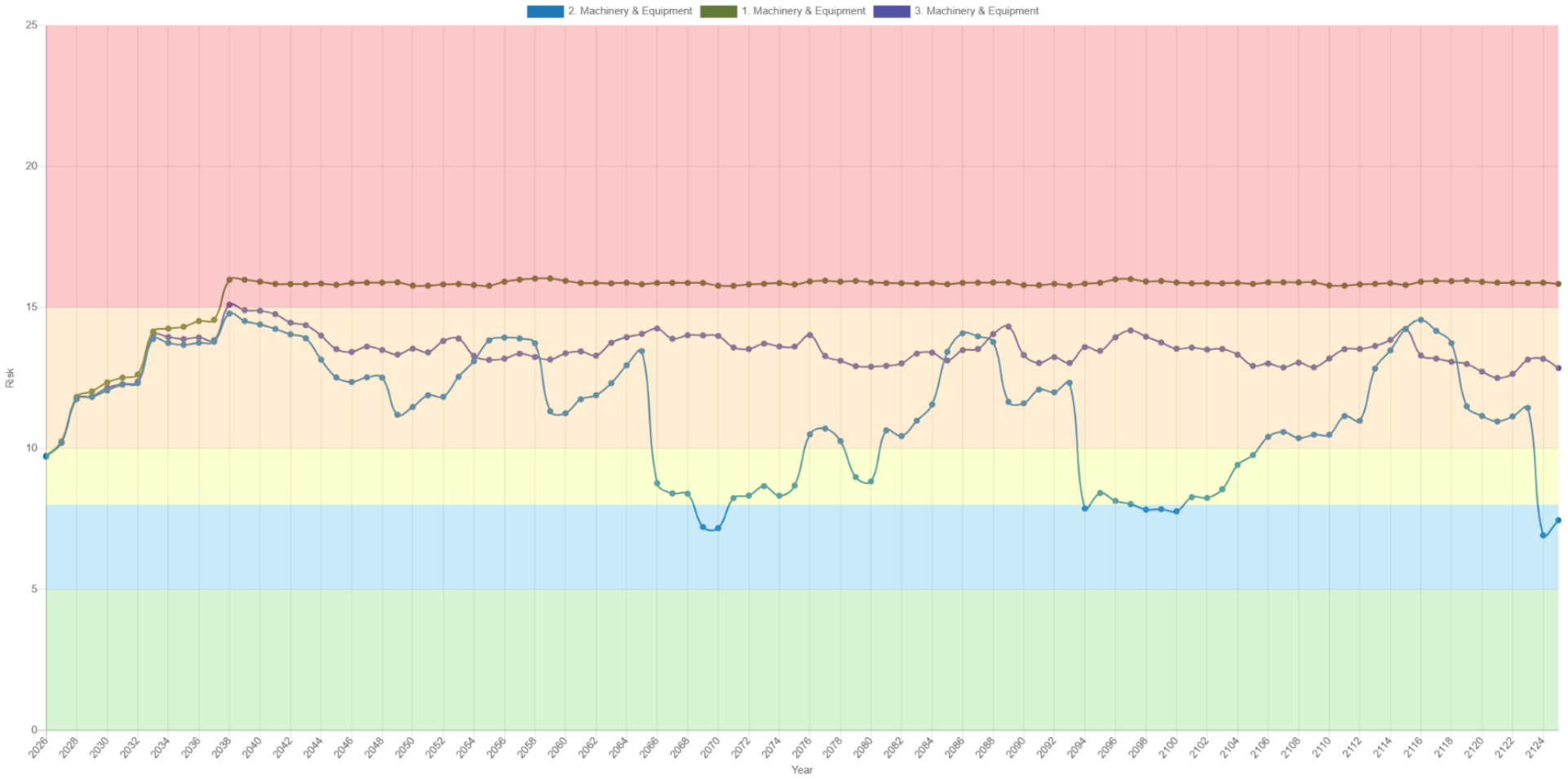
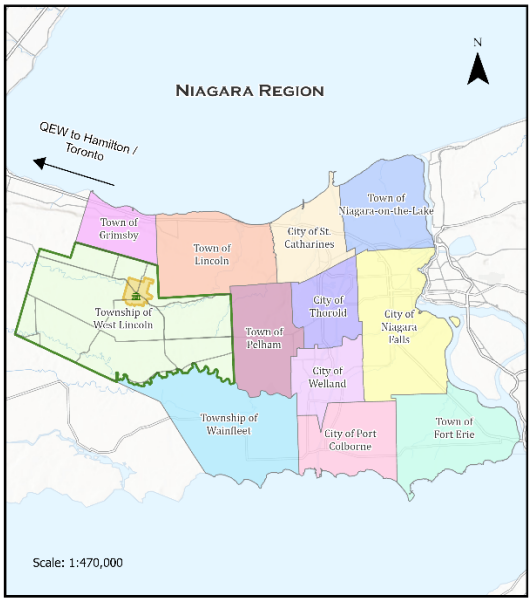


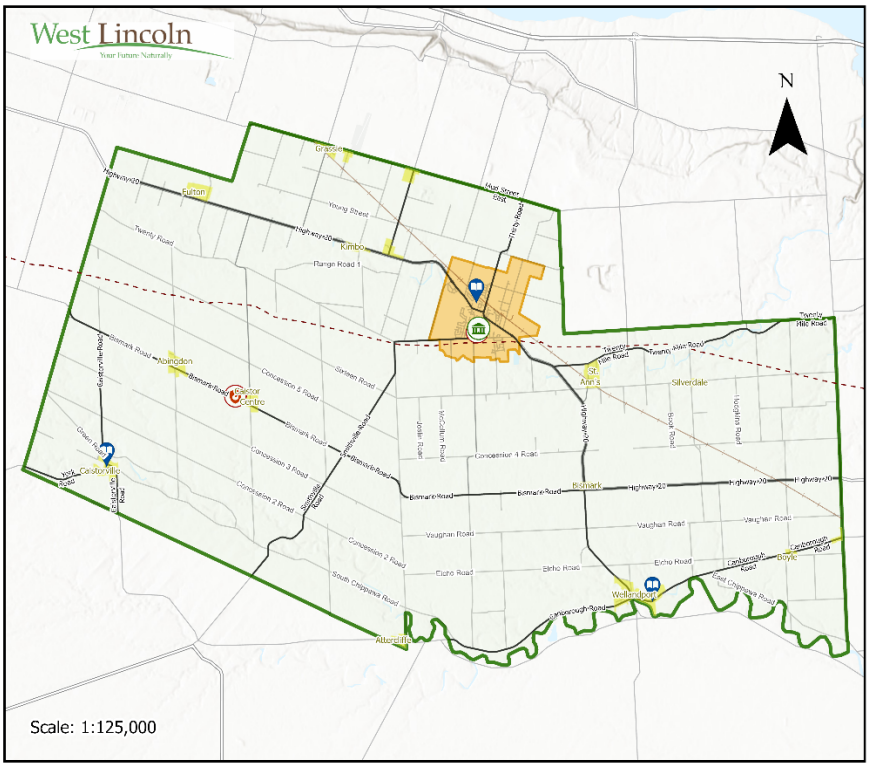
Figure 91 Risk by PLOS Scenario: Machinery & Equipment

Appendix D – Level of Service Maps & Photos

Roads Network Map

TOWNSHIP OF WEST LINCOLN MAP





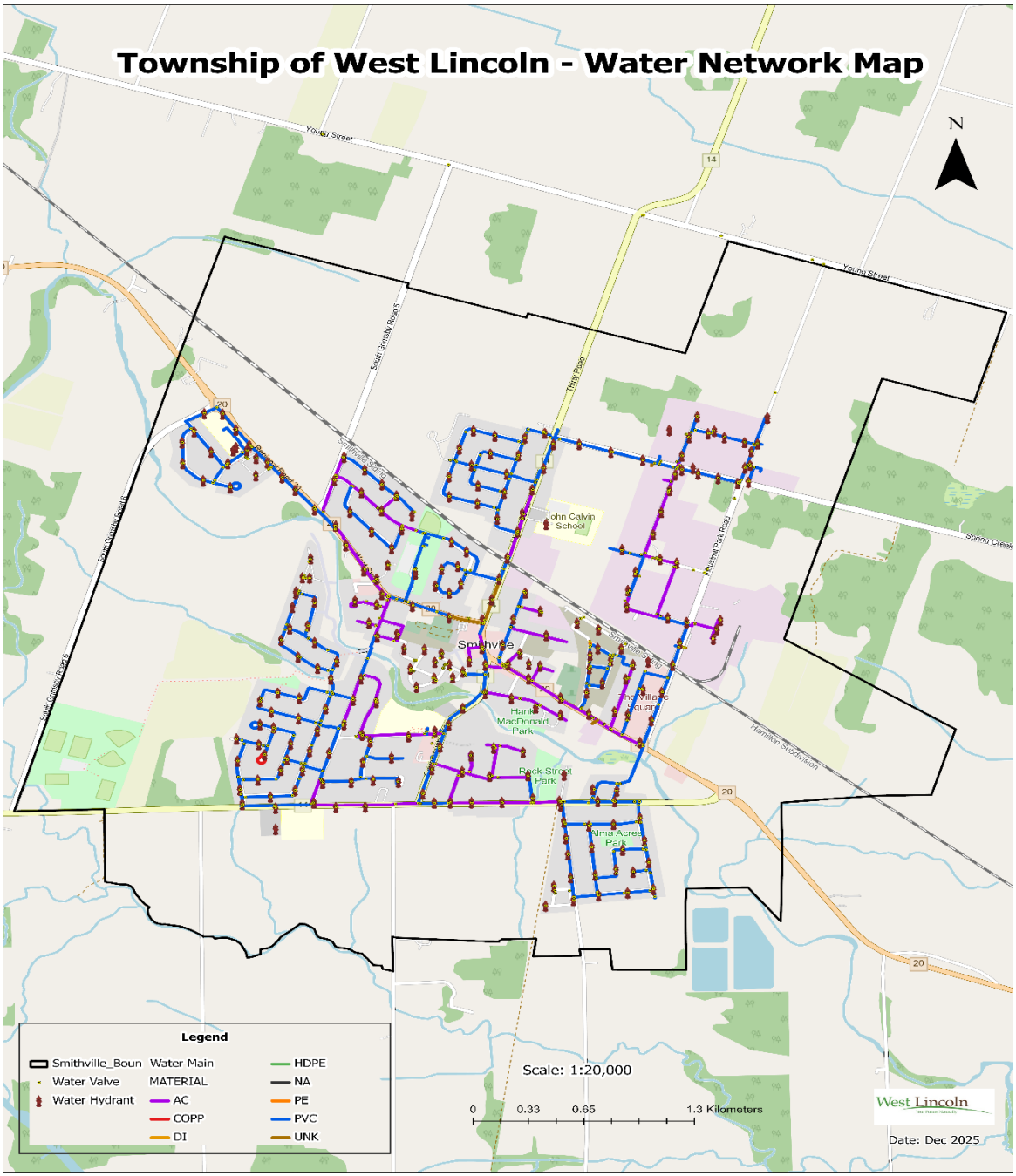
Legend

Municipal Boundaries
- Fort Erie
- Grimsby
- Lincoln
- Niagara Falls
- Niagara-on-the-Lake
- Pelham
- Port Colborne
- St. Catharines
- Thorold
- Wainfleet
- Welland
- West Lincoln

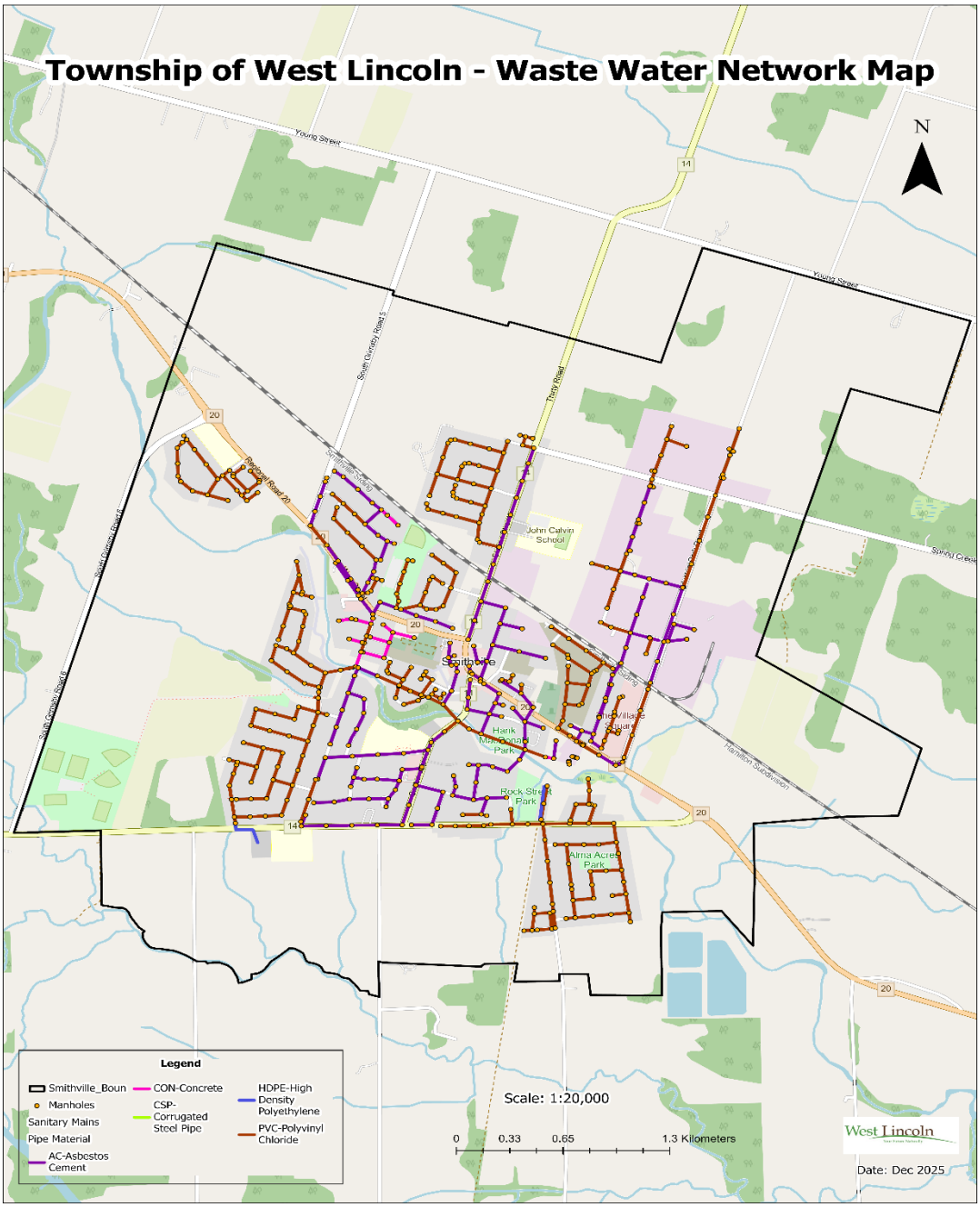
- Township Amin Building
- Fire Stations
- Library Branches
- Hamlet Settlement Area
- Roads
- Railway Canadian Pacific
- Regional Road
- Smithville Urban Boundary
- Enbridge

Date: Sept 2024

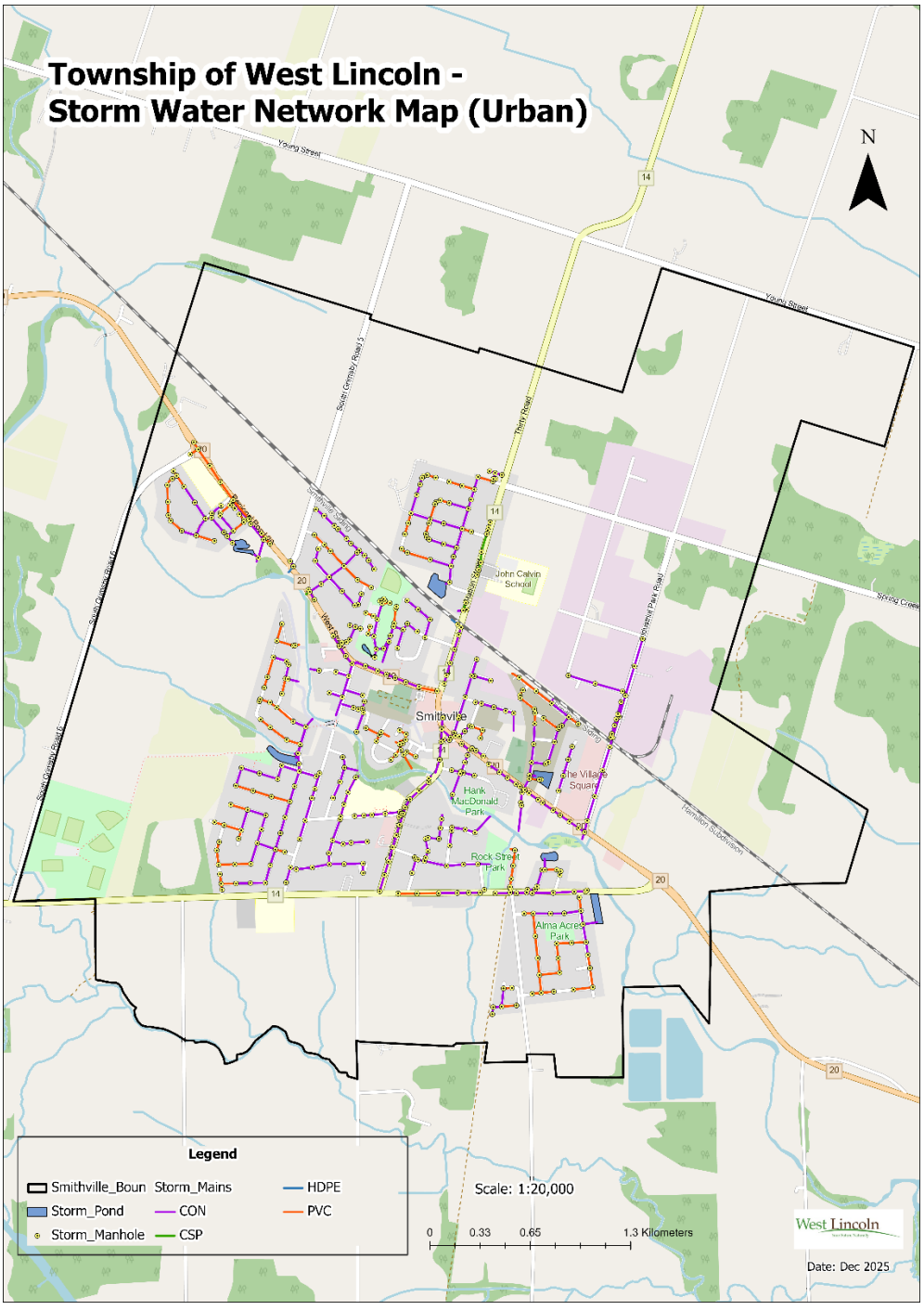
Water Network Map



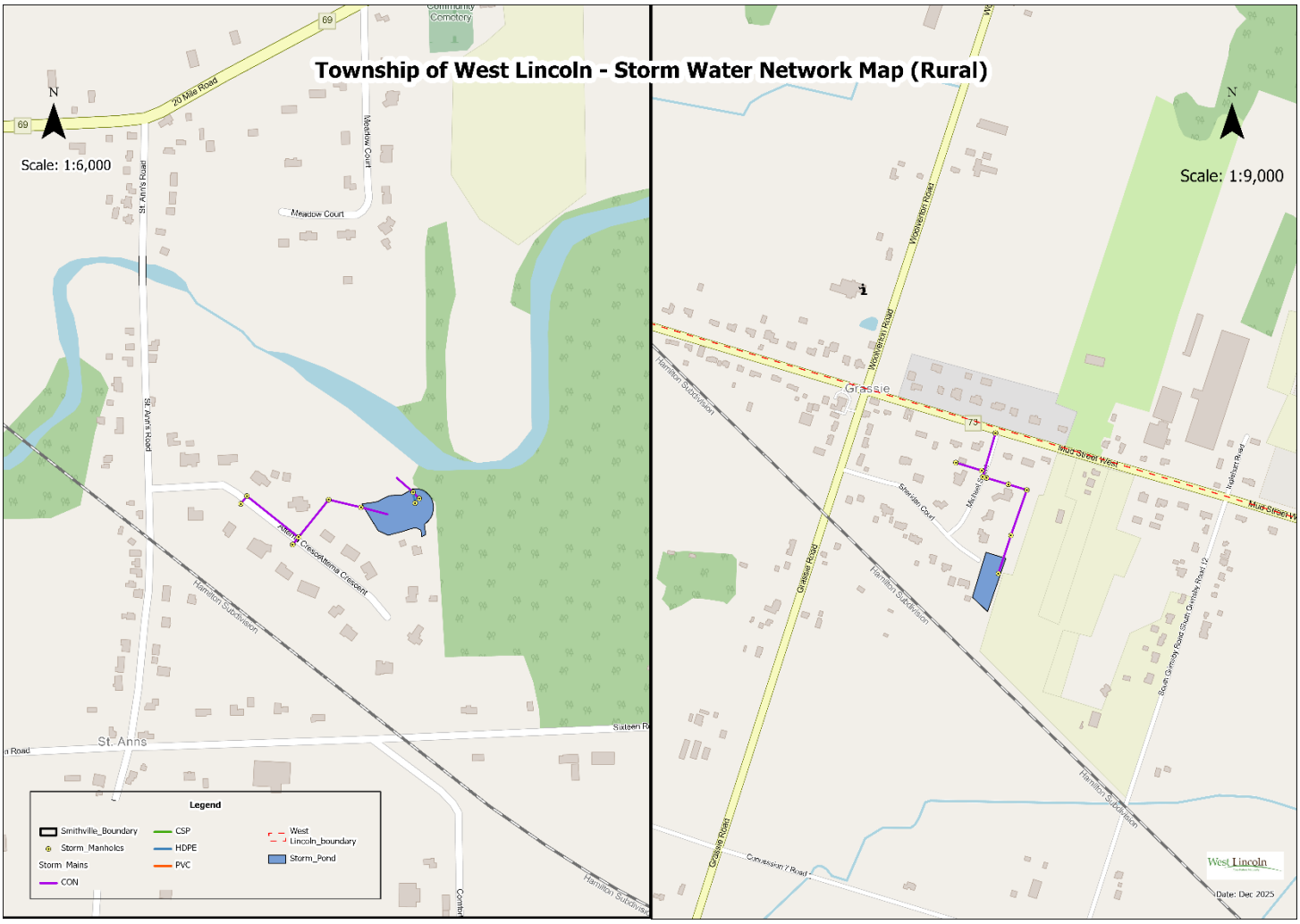
Sanitary Network Map



Storm Network – Urban



Storm Network – Rural



Bridges & Culverts

Example of a Bridge in a 'Very Good' Condition:

South Grimsby Road

Figure 92 Photos of a bridge in a 'very good' condition: South Grimsby Road

Example of a Bridge in a 'Good' Condition:

Tober Road Bridge

Figure 93 Photos of a bridge in 'good' condition: Tober Road Bridge

Example of a Bridge in a 'Poor Condition:

Roy Bridge

Figure 94 Photos of a culvert in 'poor' condition: Roy Bridge

Example of a Bridge in Very Poor Condition:

Baldwin Road Bridge

Figure 95 Photos of a culvert in 'very poor' condition: Baldwin Road Bridge

Appendix E – Risk Rating Criteria

Probability of Failure

Asset Category	Risk Classification	Risk Critera	Value/Range	Probability of Failure Score
Paved Roads	Economic (100%)	Condition	75 - 100	1-Rare
			61- 74	2-Unlikely
			50 - 60	3-Possible
			40 - 49	4-Likely
			0 - 39	5-Almost Certain

Table 48 Probability of Failure Criteria: Water Mains

Asset Category	Risk Classification	Risk Critera	Value/Range	Probability of Failure Score
Bridges & Culverts	Economic (100%)	Condition	81 - 100	1-Rare
			71- 80	2-Unlikely
			61- 70	3-Possible
			50 - 60	4-Likely
			0 - 49	5-Almost Certain

Table 49: Probability of Failure: Bridges & Culverts

Asset Category	Risk Classification	Risk Critera	Value/Range	Probability of Failure Score
Sanitary Mains	Economic (100%)	Condition (50%)	80 - 100	1-Rare
			60- 79	2-Unlikely
			40 - 59	3-Possible
			20 - 39	4-Likely
			0 - 19	5-Almost Certain
		Slope (%) (30%)	2-1	1-Rare
			<1	2-Unlikely
			<0.4	3-Possible
			<0.2	4-Likely
			0	5-Almost Certain
		Material (20%)	HDPE, PVC	1-Rare
			CSP	2-Unlikely
			CON, DI	3-Possible
			AC	4-Likely

Table 50 Probability of Failure Criteria: Stormwater Mains

Asset Category	Risk Classification	Risk Critera	Value/Range	Probability of Failure Score
Water Mains	Economic (100%)	Asset Age (Years) (50%)	20 or less	1-Rare
			40 or less	2-Unlikely
			60 or less	3-Possible
			80 or less	4-Likely
			100 or less	5-Almost Certain
		Breaks/Segment (30%)	2	1-Rare

Asset Category	Risk Classification	Risk Critera	Value/Range	Probability of Failure Score
			4	2-Unlikely
			6	3-Possible
			8	4-Likely
			10	5-Almost Certain
		Material (20%)	HDPE, PVC	1-Rare
			CON	2-Unlikely
			CSP, DI	3-Possible
			AC	4-Likely

Table 51: Probability of Failure: Water Mains

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score
All other assets	Economic (100%)	Condition	80-100	1-Rare
			60-79	2-Unlikely
			40-59	3-Possible
			20-39	4-Likely
			0-19	5-Almost Certain

Table 52 Probability of Failure Criteria: All Other Assets

Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Paved Roads	Economic (60%)	Replacement Cost	0-$25,000	1-Insignificant
			$25,001 - $50,000	2-Minor
			$50,001 - $100,0000	3-Moderate
			$100,001 - $150,000	4-Major
			$300,000+	5-Severe
	Operational (40%)	Maintenance Class	5 and 6	1-Insignificant
			4	2-Minor
			3	3-Moderate

Table 53 Consequence of Failure criteria: Road Surfaces

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Bridges & Culverts	Economic (60%)	Replacement Cost with Events	0-$100,000	1-Insignificant
			$100,001 - $250,000	2-Minor
			$250,001 - $750,0000	3-Moderate
			$750,001 - $1,000,000	4-Major
			$1,000,000+	5-Severe
	Operational (40%)	Priority Rating (50%)	Adequate	2-Minor
			6-10 Years	3-Moderate
			1-5 Years	4-Major
			NOW	5-Severe
		Implementation Ranking (50%)	No Ranking	1-Insignificant
			Low	2-Minor

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
			Medium	3-Moderate
			High	4-Major

Table 54: Consequence of Failure: Bridges & Culverts

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Sanitary Mains	Economic (100%)	Replacement Cost	0-$10,000	1-Insignificant
			$10,001 - $20,000	2-Minor
			$20,001 - $50,000	3-Moderate
			$50,001 - $100,000	4-Major
			$100,001+	5-Severe

Table 55 Consequence of Failure Criteria: Sanitary Sewer Mains

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Water Mains	Economic (70%)	Replacement Cost	0-$10,000	1-Insignificant
			$20,001 - $50,000	2-Minor
			$50,001 - $100,000	3-Moderate
			$100,001 - $500,000	4-Major
			$500,001+	5-Severe
	Operational (30%)	Diameter (mm)	100 or less	1-Insignificant
			150 or less	2-Minor
			250 or less	3-Moderate
			350 or less	4-Major
			500 or less	5-Severe

Table 56 Consequence of Failure Criteria: Water Mains

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Stormwater Mains	Economic (40%)	Replacement Cost	0-$10,000	1-Insignificant
			$20,001 - $50,000	2-Minor
			$50,001 - $100,0000	3-Moderate
			$100,001 - $500,000	4-Major
			$500,001+	5-Severe

Table 57 Consequence of Failure Criteria: Stormwater Mains

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
All other Assets	Economic	Replacement Cost	0-$10,000	1-Insignificant

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
	(100%)	(100%)	$10,001 - $250,000	2-Minor
			$250,001 - $50,0000	3-Moderate
			$500,001 - $1,000,000	4-Major
			$1,000,001+	5-Severe

Table 58 Consequence of Failure Criteria: All Other Assets