Asset Management Plan

Township of East Zorra-Tavistock

JUNE 2025

psdcitywide

This Asset Management Plan was prepared by:

psdcitywide

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

Key Statistics

$213.6m	2024 Replacement Cost of Asset Portfolio
91%	Percentage of Assets in Fair or Better Condition
Good (70%)	Overall Average Portfolio Condition[1]
76%	Percentage of Assets with Assessed Condition Data
$324,000	Annual Capital Infrastructure Deficit
+0.5% Annually	Tax Increase per Household per Year (for 5 Years) to Fully Fund Proposed Levels of Service

[1] Weighted by replacement cost.

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1 Executive Summary

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

1.1 Scope

This Asset Management Plan (AMP) identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Township of East Zorra-Tavistock can ensure that public infrastructure is managed to support the sustainable delivery of municipal services. Figure 1 outlines the asset categories included in this AMP:

Figure 1 Core and Non-Core Asset Categories

Core Assets

- Road Network
- Bridges & Culverts
- Stormwater Network

Non-Core Assets

- Buildings
- Land Improvements
- Vehicles
- Machinery & Equipment

1.2 Compliance

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

1.3 Findings

The overall replacement cost of the asset categories included in this AMP totals $213.6 million. Weighted by replacement cost, 91% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 76% of assets. For the remaining 24% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

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

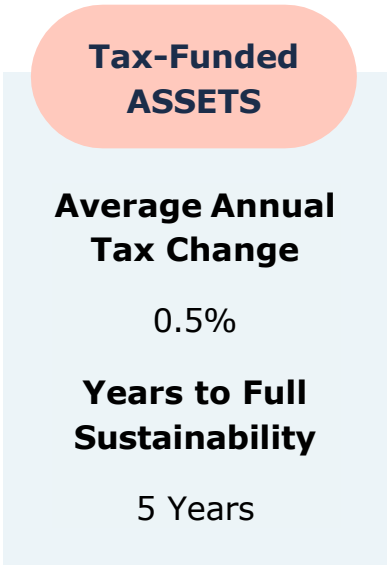
To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Township's average annual capital requirement totals $2,695,000. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $2,371,000 towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $324,000.

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

1.4 Recommendations

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

Figure 2 Proposed Tax Change



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

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

2 Introduction & Context

2.1 Community Profile

Table 1 Township of East Zorra-Tavistock Community Profile

Census Characteristic	Township of East Zorra-Tavistock[2]	Ontario
Population 2021	7,841	14,223,942
Population Change 2016-2021	10.2%	5.8%
Total Private Dwellings	3,055	5,929,250
Population Density	32.4 / km^2	15.9 / km^2
Land Area	241.96 km^2	892,411.76 km^2

The Township of East Zorra-Tavistock is located in southwestern Ontario. Established in 1975 through the amalgamation of the Township of East Zorra and the Village of Tavistock, it forms part of Oxford County. Geographically, East Zorra-Tavistock is strategically positioned between the cities of London and Kitchener and is just north of Woodstock.

This Township boasts a rich tapestry of communities, including Braemar, Cassel, East Zorra, Hickson, Huntingford, Innerkip, Perry Mine, Perrys Lake, Strathallan, Tavistock, Tollgate, and Willow Lake. The primary economic driver in East Zorra-Tavistock is agriculture, characterized by a number of innovative farms and farm gate stands that attract visitors from near and far. The local economy is further enriched by a strong community culture, epitomized by events such as the renowned World Crokinole Championship.

Accessibility is a key feature of East Zorra-Tavistock. The township enjoys proximity to major highways, including the 401, 402, and 403, making it an ideal location for travel and transport. Additionally, several airports are located nearby, and the area

[2] As per 2021 Census from Statistics Canada.

is serviced by the Canadian Pacific and Canadian National Rail Lines, enhancing its connectivity.

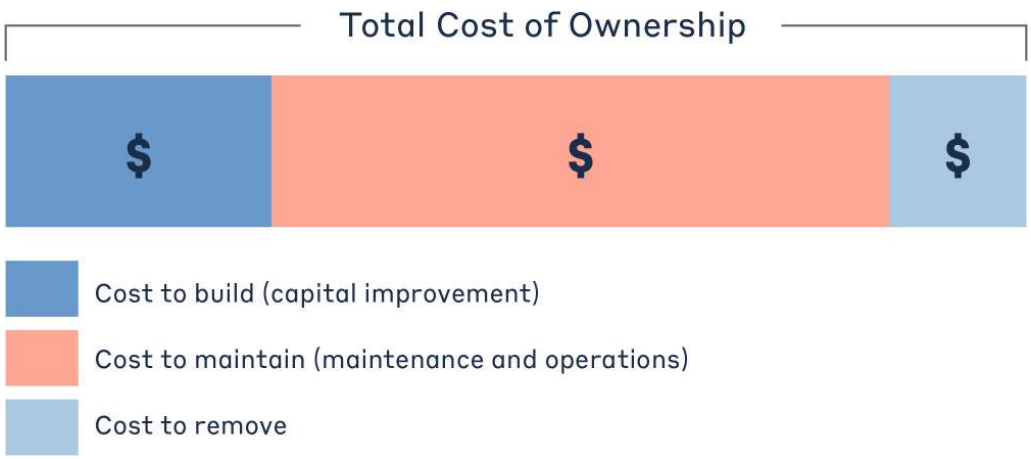
Residents of East Zorra-Tavistock benefit from the Township's blend of small-town charm and convenient access to urban amenities, resulting in a high quality of life. The community's welcoming atmosphere, combined with its robust infrastructure, makes it an appealing place to live, work, and visit.

2.2 Asset Management Overview

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

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

Figure 3 Total Cost of Asset Ownership



These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of broader asset management

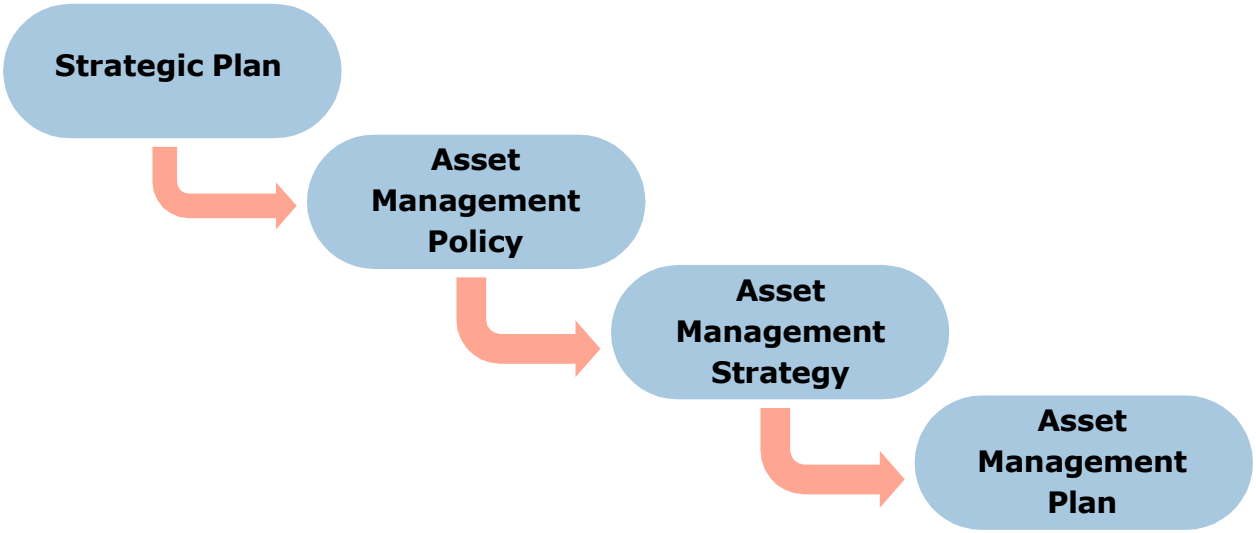
program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

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

2.2.1 Foundational Asset Management Documentation

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

Figure 4 Foundational Asset Management Documents



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

Strategic Plan

The Township's current Strategic Plan for 2024-2028 aims to build a connected and forward-thinking community, grounded in its history while shaping a bright future.

Developed through collaboration with council, staff, and residents, the plan reflects community input from open houses and online engagement. It focuses on six strategic priorities:

- Financial Sustainability
- Infrastructure Maintenance and Enhancement
- Good Governance
- Service Delivery Optimization
- Community Vitality
- Environmental Awareness

These priorities are designed to meet both current and future needs, supporting long-term growth and resilience while fostering community well-being and cultural vibrancy.

The values outlined in the Strategic Plan are as follows:

- Accountability
- Inclusivity
- Integrity
- Respect
- Sustainability
- Teamwork

Asset Management Policy

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

The Township updated its asset management policy on July 6, 2022 through Report #DT2022-01. Staff had previously worked with PSD on the original policy adopted in 2019 and are satisfied that the policy reflects a broad-based approach to Asset Management that East-Zorra Tavistock can embrace and take forward.

Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the

activities required to meet these objectives. It provides greater detail than the policy on how the Township plans to achieve asset management objectives through planned activities and decision-making criteria.

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

Asset Management Plan

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

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

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

2.2.2 Key Concepts in Asset Management

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

Lifecycle Management Strategies

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

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

There are several field intervention activities that are available to extend the life of an asset. These activities can be placed into one of three categories: maintenance, rehabilitation, and replacement. The following table provides a description of each type of activity and the general difference in cost.

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

Table 2 Lifecycle Management: Typical Lifecycle Interventions

Lifecycle Activity	Cost	Typical Associated Risks
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	**$$$**	♦ Useful life may not be extended as expected; ♦ May be costlier overall when assessed against full reconstruction or replacement; ♦ Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction Asset end-of-life activities that often	**$$$$$**	♦ Incorrect or unsafe disposal of existing asset; ♦ Costs associated with asset retirement obligations;

Lifecycle Activity	Cost	Typical Associated Risks
involve the complete replacement of assets		♦ 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;

The Township's approach to lifecycle management is described within each asset category outlined in this AMP. Staff will continue to evolve and innovate current practices for developing and implementing proactive lifecycle strategies to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

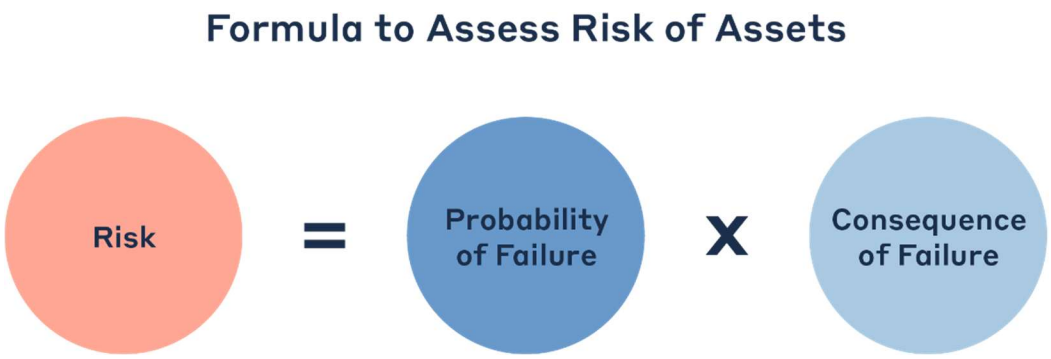
Risk & Criticality

Quantitative Risk

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

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

Figure 5 Risk Equations



The approach for quantitative risk used in this AMP relies on a calculable measurement of risk associated with each asset. The probability and consequence of failure are each scored from one to five, producing a minimum risk index of one for the lowest risk assets, and a maximum risk index of 25 for the highest risk assets.

Probability of Failure

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

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

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

1. Identification of *available* attribute data *suitable* for determining the probability of failure for selected assets. In some instances, available asset data may be limited requiring a more simplified PoF model, at least initially.
    - This process often identifies opportunities for asset data enhancements and/or data collection. Asset enhancement considerations commonly relate to data quality dimensions which are outlined in – Data Quality Dimensions.
2. Determination of the type of risk that applies to the selected attribute.

- Condition, Design Capacity, Economic, Environmental, Health and Safety, Operational, Social, Strategic

3. Where there are multiple parameters included in the PoF model, determine suitable weighting of each parameter.
    - Weighting allows the model to recognize that each factor may impact the probability of failure to a different degree. Where the weight is higher, the impact that factor has on the model increases too.

Consequence of Failure

Estimating criticality also requires identifying the types of consequences that the organization and community may face from an asset's failure, and the magnitude of those consequences. Consequences of asset failure will vary across the infrastructure portfolio; the failure of some assets may result primarily in high direct financial cost but may pose limited risk to the community. Other assets may have a relatively minor financial value, but any downtime may pose significant health and safety hazards to residents.

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

Table 3 Risk Analysis: Types of Consequences of Failure

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

Type of Consequence	Description
	community stakeholders, adverse media coverage, and reputational damage to the community and the Township.
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 asset failure on the community's long-term strategic objectives, including economic development, business attraction, etc.

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

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

Qualitative Risk

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

Understanding the Nuances

- **Human Expertise and Experience:** Rather than solely relying on historical data or mathematical models, qualitative risk assessments tap into the insights of experienced staff and stakeholders. Their first-hand knowledge can highlight emerging issues—such as gaps in asset data or unanticipated maintenance challenges—that might be overlooked in quantitative reviews.

- **Contextual Factors:** Municipalities face a range of unique challenges including aging infrastructure, rapid growth, and climate change impacts. Qualitative assessments take into account the specific context of the community, such as local environmental conditions, regulatory landscapes, and historical performance of assets.

Methodological Approach

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

Strategic Benefits

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

By grounding the assessment process in real-world expertise and contextual analysis, qualitative risk evaluation becomes an essential tool for developing resilient, adaptive, and well-informed asset management strategies. This ensures

that municipalities are not only prepared to handle current challenges but are also equipped to navigate the uncertainties of the future.

Levels of Service

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

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

Community Levels of Service

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

Technical Levels of Service

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

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

Current and Proposed Levels of Service

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

Once current levels of service have been measured, proposed levels of service over a 10-year period should be established, in accordance with O. Reg. 588/17.

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

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

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

2.3 Scope & Methodology

2.3.1 Asset Categories for this AMP

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

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

Figure 6 Tax Funded Asset Categories

2.3.2 Data Effective Date

It is important to note that this plan is based on data as of **December 2024**; therefore, it represents a snapshot in time using the best available processes, data, and information at the Township. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.3.3 Defining Replacement Costs

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

User-Defined Cost and Cost Per Unit

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

Cost Inflation / CPI Tables

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

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

2.3.4 Estimated Service Life & Service Life Remaining

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

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

Figure 7 Service Life Remaining Calculation

2.3.5 Average Annual Requirement

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

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

Why the AAR matters:

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

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

Table 4 Average Annual Requirement Example

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

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

2.3.6 Reinvestment Rate

As assets age and deteriorate, they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment

rate is a measurement of available or required funding relative to the total replacement cost.

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

Figure 8 Target Reinvestment Rate Calculation

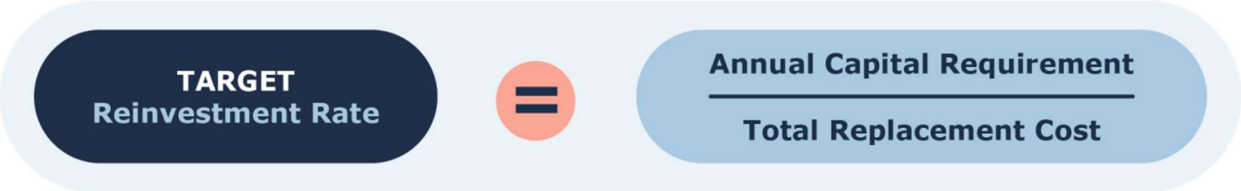
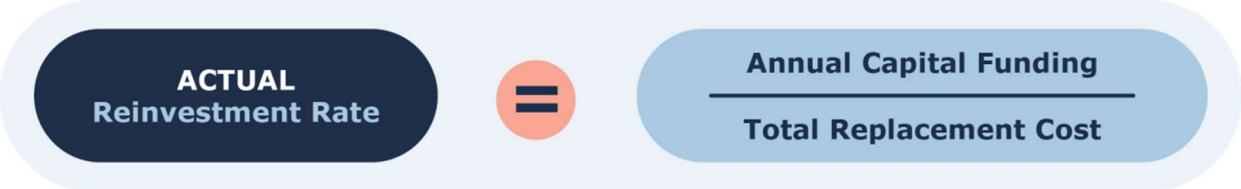


Figure 9 Actual Reinvestment Rate Calculation



2.3.7 Establishing Asset Condition

An incomplete or limited understanding of asset 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.

Table 5 Standard Condition Rating Scale

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, conditions below standard, large portion of system exhibits significant deterioration	20-40
Very Poor	Unfit for sustained service	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	0-20

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

2.3.8 Evaluating Quantitative Risk

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

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

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

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

Table 7 Example of Risk Matrix

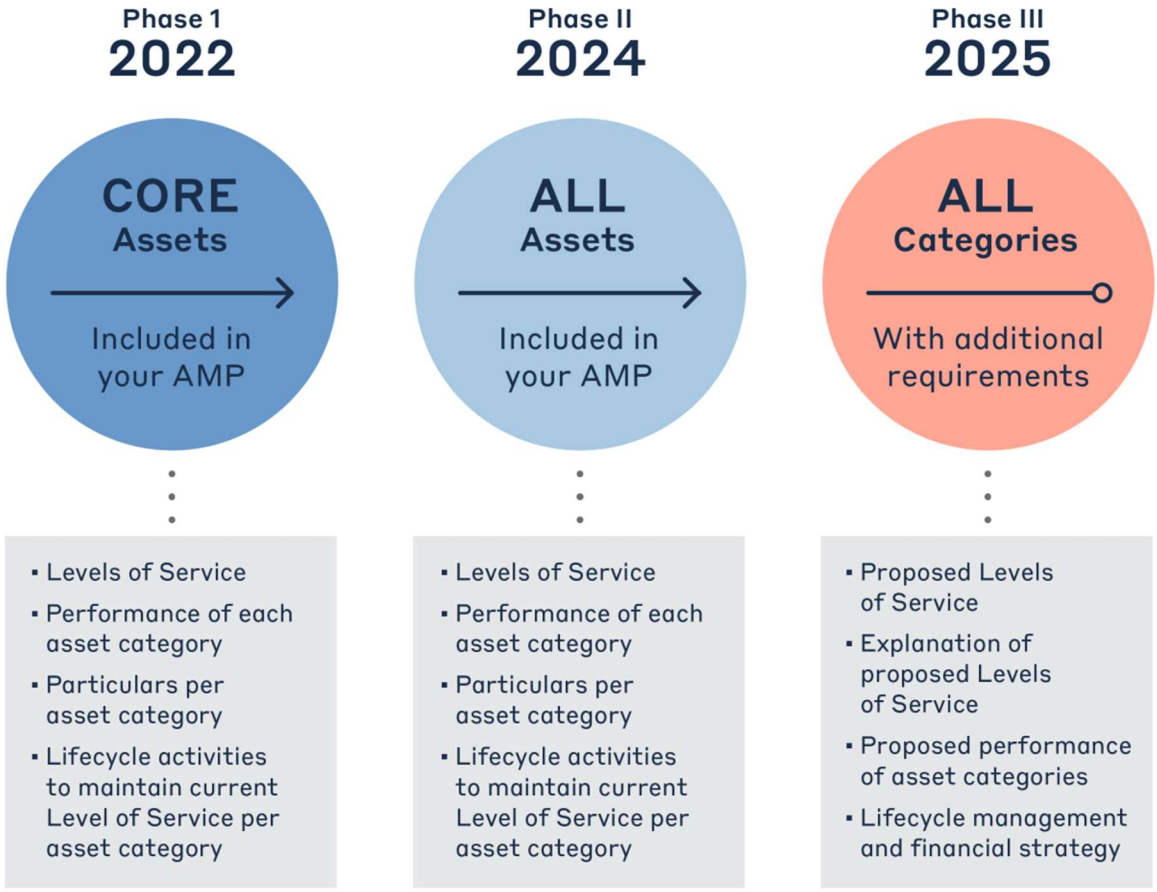
Consequence of Failure	1	2	3	4	5
5	# Assets Quantity Cost	# Assets Quantity Cost	# Assets Quantity Cost	# Assets Quantity Cost	# Assets Quantity Cost
4	# Assets Quantity Cost	# Assets Quantity Cost	# Assets Quantity Cost	# Assets Quantity Cost	# Assets Quantity Cost
3	# Assets Quantity Cost	# Assets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

Probability of Failure

2.4 Ontario Regulation 588/17

As part of the Infrastructure for Jobs and Prosperity Act, 2015, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17)[3]. Along with creating better performing organizations, more livable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them. Figure 10 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

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



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

2.4.1 O. Reg. 588/17 Compliance Review

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	5.1 – 11.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	5.1 – 11.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	5.3 – 11.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	5.2 – 11.2	Complete
Description of the municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	5.2 – 11.2	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	5.7 – 11.7	Complete
Current performance measures in each category	S.5(2), 2	5.7 – 11.7	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	5.4 – 11.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix B	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	12.1	Complete

Portfolio Overview

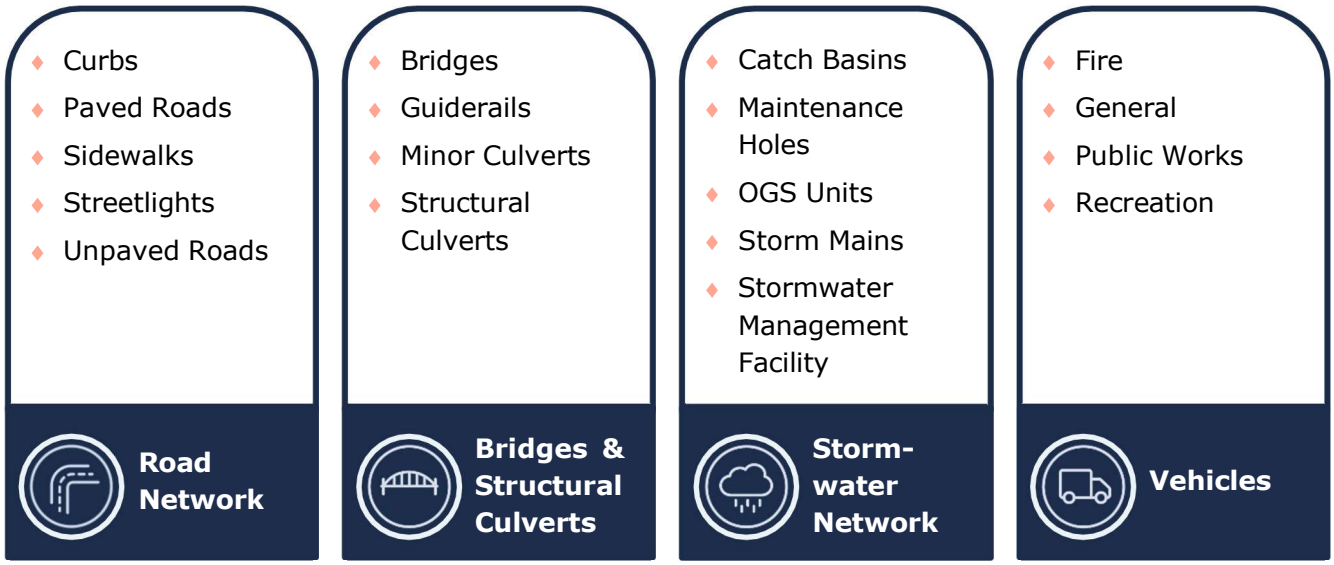
3 State of the Infrastructure

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

Figure 11 Asset Hierarchy and Data Classification



3.2 Portfolio Overview

3.2.1 Total Replacement Cost of Asset Portfolio

The seven asset categories analyzed in this Asset Management Plan have a total current replacement cost of $213.6 million. This estimate was calculated using user-defined costing, as well as inflation of historical or original costs to current date. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today. Table 8 provides a detailed breakdown of replacement cost and average annual requirement[4] by asset category. Figure 12 illustrates the replacement cost of each asset category; at 38%

[4]For further clarification on Average Annual Requirement (AAR), see section 2.3.5 Average Annual Requirement.

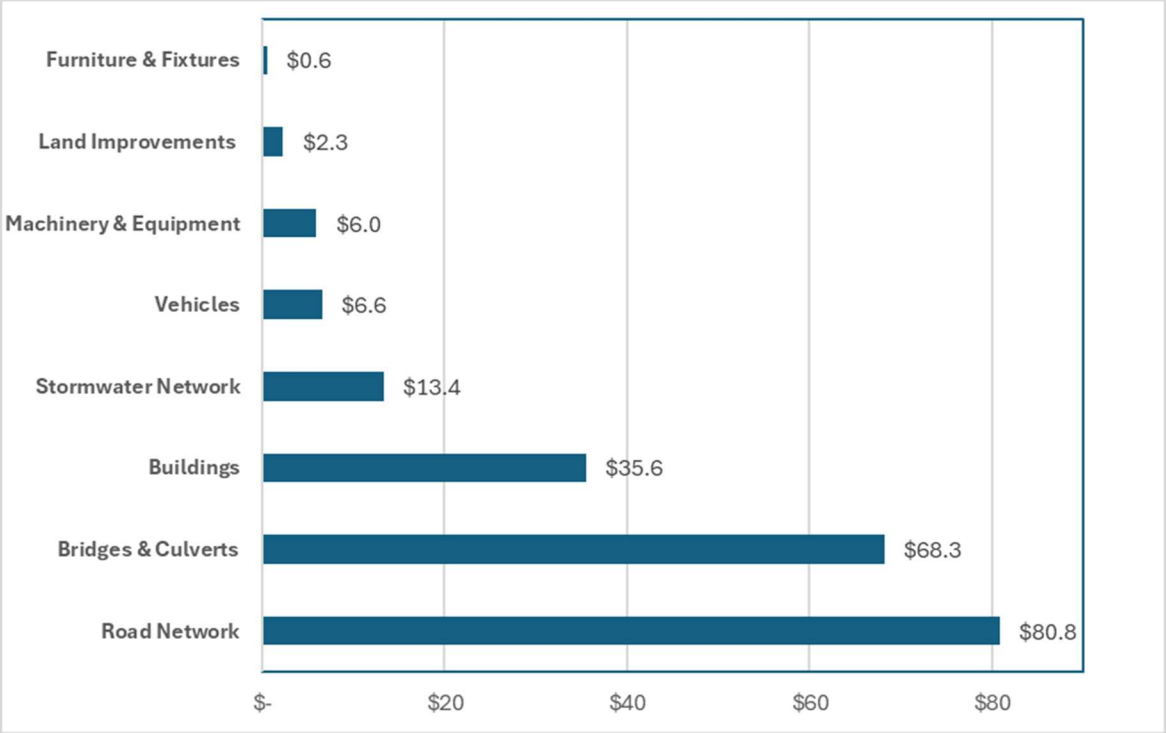
of the total portfolio, the road network assets form the largest share of the Township's asset portfolio, followed by closely by bridges and structural culverts at 32%. Furniture and fixtures is its own line item in the following tables but is discussed in the machinery and equipment section.

Table 8 Detailed Asset Inventory Valuation: Portfolio Overview

Category	Replacement Cost	Replacement Cost Method	% of Total[5]	AAR[4]
Road Network	$80,841,942	Cost per Unit	38%	$1,001,000
Bridges & Culverts	$68,268,269	User-Defined	32%	$263,000
Buildings	$35,561,437	User-Defined	17%	$483,000
Stormwater Network	$13,367,429	User-Defined	6%	$221,000
Vehicles	$6,612,217	User-Defined	3%	$356,000
Machinery & Equipment	$5,990,670	User-Defined	3%	$232,000
Land Improvements	$2,346,749	Cost per Unit	1%	$87,000
Furniture & Fixtures	$628,107	Cost per Unit	0%	$52,000
TOTAL	**$213,616,820**		**100%**	**$2,695,000**

[5] Weighted by replacement cost.

Figure 12 Current Replacement Cost: Portfolio Overview



3.2.2 Target vs. Actual Reinvestment Rate

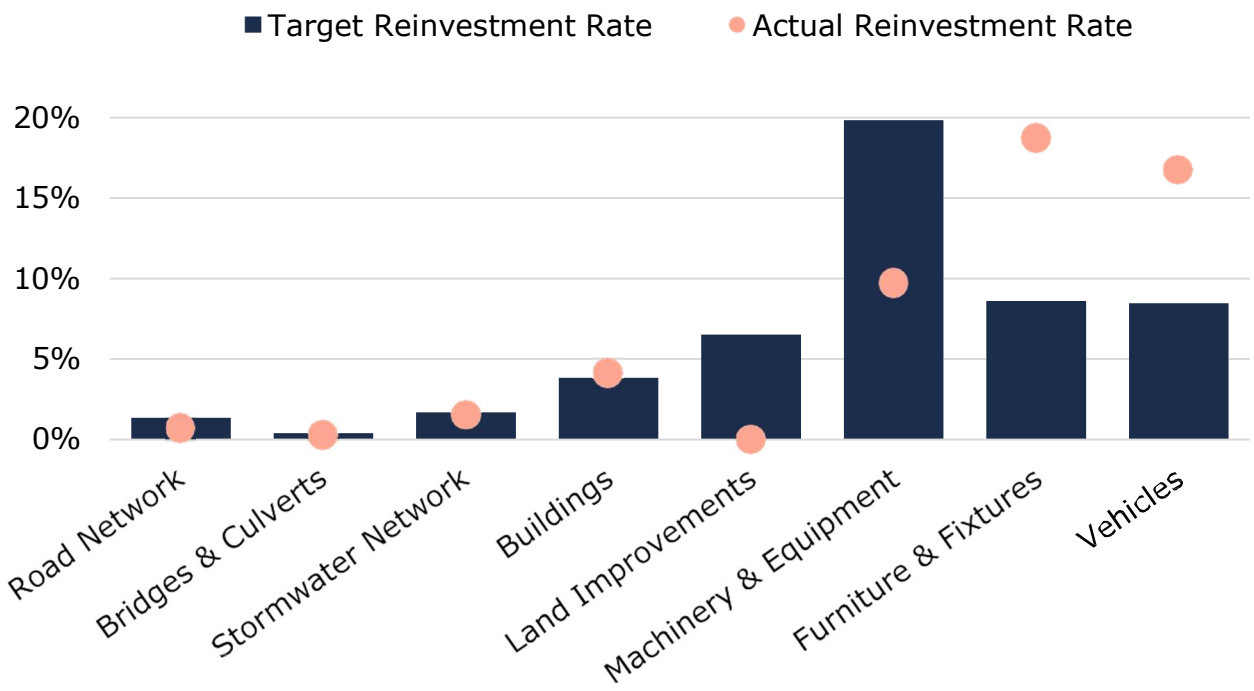
The chart below depicts funding gaps by comparing the target to the current reinvestment rate. To meet the existing long-term capital requirements, the Township requires an annual capital investment of $2,695,000, for a target portfolio reinvestment rate of 1.56%. Currently, annual investment from sustainable revenue sources is $2,371,000, for a current portfolio reinvestment rate of 1.38%. This leads to an annual infrastructure budget deficit of $324,000. Target and current re-investment rates by asset category are detailed below.

Table 9 Current vs. Target Reinvestment Rate: Portfolio Overview

Category	Target Reinvestment Rate	Actual Reinvestment Rate	Difference
Road Network	1.35%	0.39%	**-0.96%**
Bridges & Culverts	0.40%	0.04%	**-0.36%**
Stormwater Network	1.69%	1.52%	**-0.17%**

Category	Target Reinvestment Rate	Actual Reinvestment Rate	Difference
Buildings	3.83%	4.12%	**+0.30%**
Land Improvements	6.52%	0.00%	**-6.52%**
Machinery & Equipment	19.83%	9.74%	**-10.09%**
Furniture & Fixtures	8.61%	18.72%	**+10.11%**
Vehicles	8.46%	16.74%	**+8.29%**
TOTAL	**1.56%**	**1.14%**	**-0.42%**

Figure 13 Current vs. Target Reinvestment Rate: Portfolio Overview



3.2.3 Condition of Asset Portfolio

Figure 14 Asset Condition: Portfolio Overview

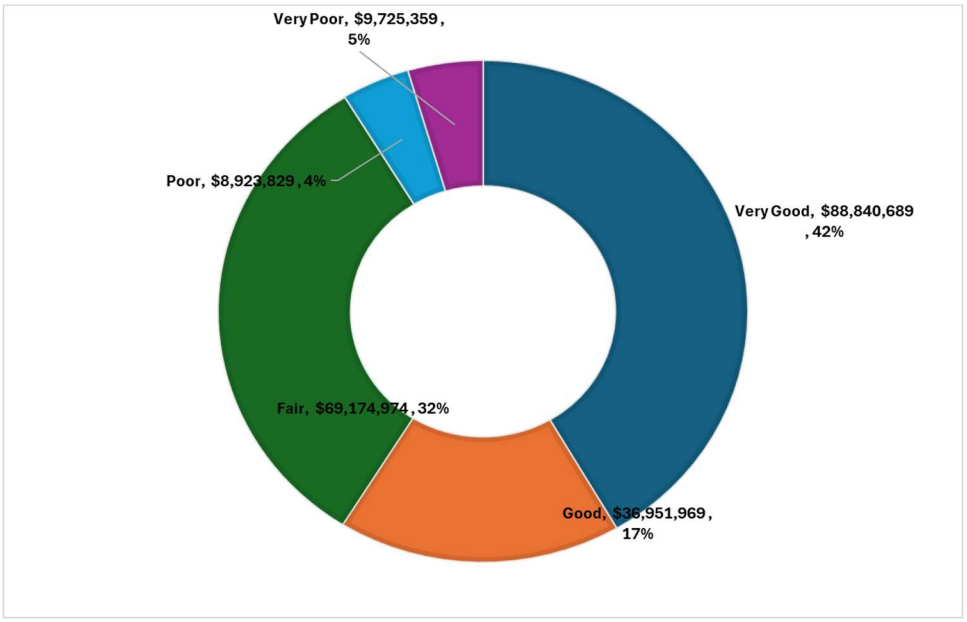
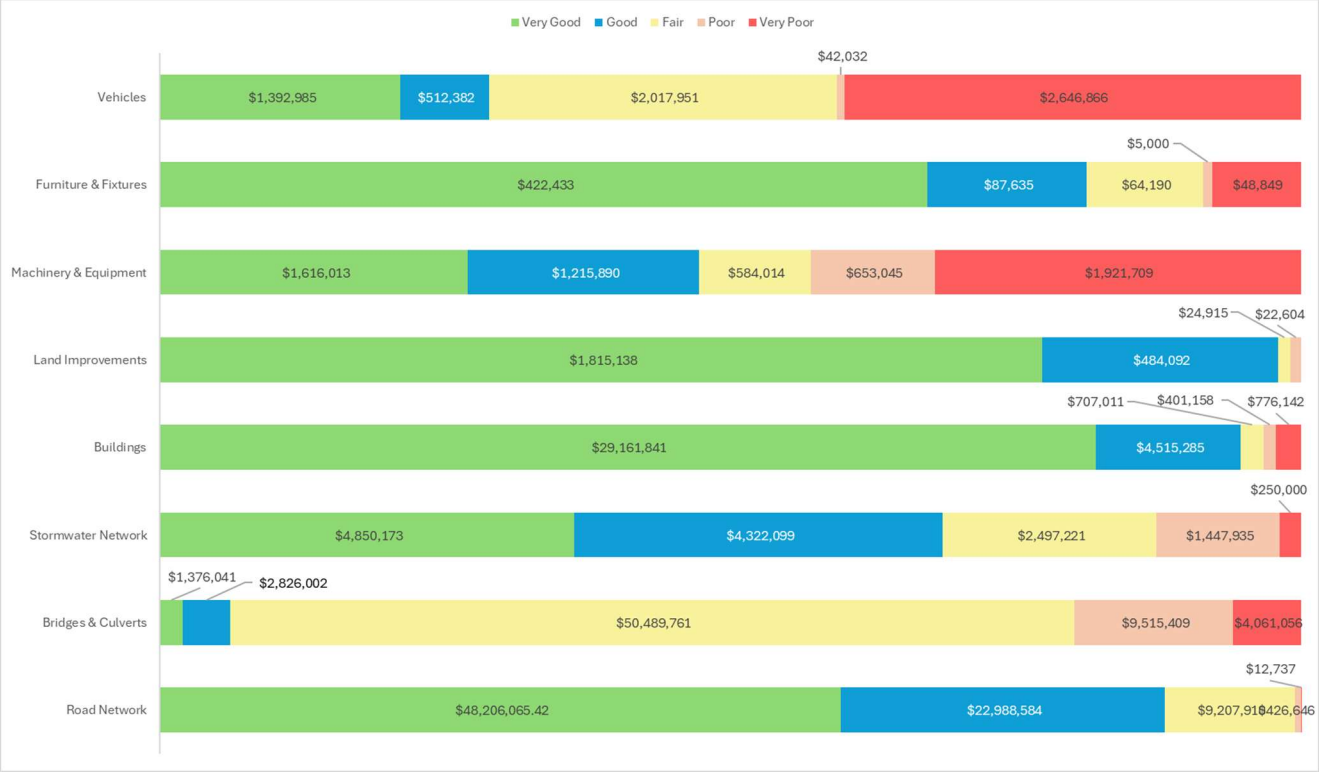


Figure 14 and Figure 15 summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition and age-based analysis,

91%[6] of the Township's infrastructure portfolio is in fair or better condition, with the remaining 9%[6] in poor or lower condition, and an overall condition rating of 70%[6]. Typically, assets in poor or lower condition may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

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

Figure 15 Asset Condition: Portfolio Overview by Category



Condition data was available for all of the road network and bridges and culverts, and the majority of land improvements, machinery and equipment, and furniture and fixtures assets. For all remaining assets, age was used as an approximation of condition for these assets. Age-based condition estimations can skew data and lead to potential under- or overstatement of asset needs.

[6] Average weighted by replacement cost.

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

As further illustrated in Figure 15 at the category level, while all categories excluding bridges and culverts is primarily in fair or better condition, the large replacement value of the bridges and culverts heavily affects the overall portfolio condition. See Table 11 for details on how condition data was derived for each asset segment.

Table 10 Detailed Asset Condition: Portfolio Overview

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition
Road Network	$439,383	1%	$80,402,559	99%	Good (78%)
Bridges & Culverts	$9,994,465	15%	$58,273,804	85%	Fair (45%)
Stormwater Network	$1,697,935	13%	$11,669,494	87%	Good (65%)
Buildings	$1,177,300	3%	$34,384,137	97%	Good (71%)
Land Improvements	$22,604	1%	$2,324,145	99%	Good (74%)
Machinery & Equipment	$2,574,754	43%	$3,415,916	57%	Fair (59%)
Furniture & Fixtures	$53,849	9%	$574,258	91%	Fair (57%)
Vehicles	$2,688,898	41%	$3,923,319	59%	Fair (45%)
TOTAL	**$18,649,189**	**9%**	**$194,967,631**	**91%**	**Good (70%)**

Source of Condition Data

This AMP relies on assessed condition for 76% 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 11 below identifies the source of condition data used throughout this AMP.

Table 11 Source of Condition Data: Portfolio Overview

Asset Category	% Assessed[7]	Source of Condition Data
Road Network	99%	2021 Road Needs Study
Bridges & Culverts	100%	2023 OSIMs Report
Stormwater Network	24%	Internal Staff
Buildings	47%	Internal Staff
Land Improvements	75%	Internal Staff
Machinery & Equipment	60%	Internal Staff
Furniture & Fixtures	54%	Internal Staff
Vehicles	0%	N/A
TOTAL	**76%**	

3.2.4 Risk & Criticality

Using the risk equation and preliminary risk models, Figure 16 shows how assets across the different asset categories are stratified within the 1-25 risk rating ranges while Table 12 provides a breakdown of the probability of failure, consequence of failure, and risk ratings by asset category.

Figure 16 Risk Ratings: Portfolio Overview

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$64,117,874	$86,848,071	$31,119,819	$22,878,840	$8,929,668
(30%)	(40%)	(15%)	(11%)	(4%)

[7] Percentage of the assets within the category with condition assessment data, weighted by replacement cost.

Table 12 Probability of Failure, Consequence of Failure, and Risk Rating: Portfolio Overview by Category

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Road Network	1.82 / 5	3.34 / 5	6.13 / 25
Bridges & Culverts	3.25 / 5	2.63 / 5	8.53 / 25
Stormwater Network	2.38 / 5	2.64 / 5	5.95 / 25
Buildings	2 / 5	2.54 / 5	4.1 / 25
Land Improvements	2.46 / 5	2.96 / 5	7.1 / 25
Machinery & Equipment	2.8 / 5	2.58 / 5	6.97 / 25
Furniture & Fixtures	2.79 / 5	2.8 / 5	7.53 / 25
Vehicles	2.41 / 5	3.76 / 5	8.66 / 25
TOTAL	**2.44 / 5**	**2.96 / 5**	**6.95 / 25**

The analysis shows that based on current risk models, approximately 3% of the Township's assets, with a current replacement cost of approximately $5.6 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 most essential to the Township.

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

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

Similarly, assets with very high condition ratings can receive a moderate to high-risk rating despite a low probability of failure. These assets may be deemed as highly critical to the Township based on their costs, economic importance, social

significance, and other factors. Continued calibration of an asset's criticality and regular data updates are needed to ensure these models more accurately reflect an asset's actual risk profile.

3.2.5 Service Life Remaining

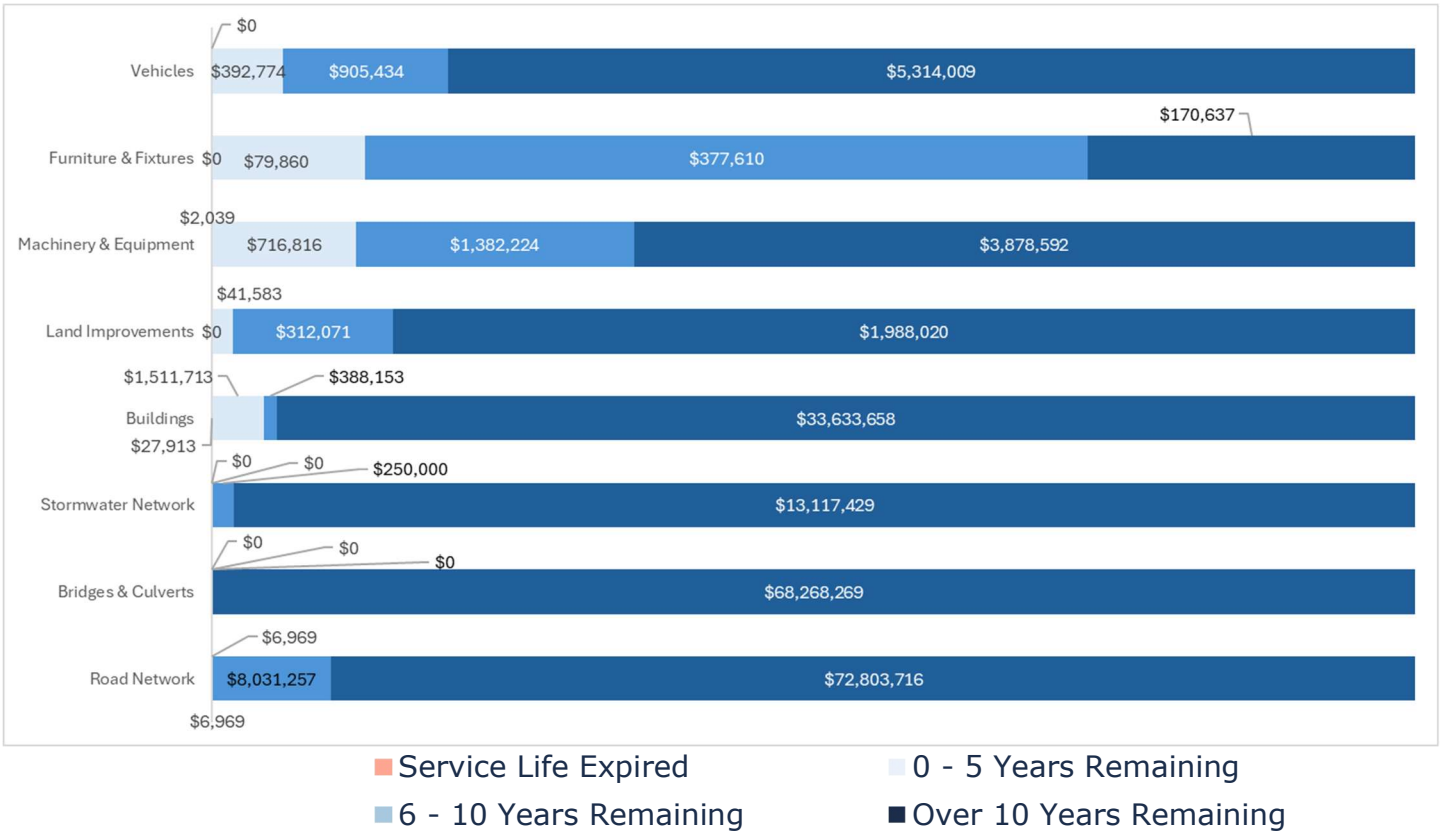
Table 13 summarizes the service life remaining for the Township's asset categories.

Table 13 Service Life Remaining: Portfolio Overview

Asset Category	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
Road Network	$7k	$7k	$8.0m	$72.8m
Bridges & Culverts	-	-	-	$68.3m
Stormwater Network	-	-	$250k	$13.1m
Buildings	$28k	$1.5m	$388k	$33.6m
Land Improvements	-	$41k	$312k	$2.0m
Machinery & Equipment	$2k	$716k	$1.4m	$3.9m
Furniture & Fixtures	-	$80k	$378k	$171k
Vehicles	-	$393k	$905k	$5.3m
TOTAL	**$37k**	**$2.7m**	**$11.6m**	**$199.1m**

Over the next ten years, 6.76% of the asset portfolio (weighted by replacement cost) will require replacement. This is illustrated in Figure 17 below.

Figure 17 Service Life Remaining: Portfolio Overview



3.2.6 Forecasted Capital Requirements

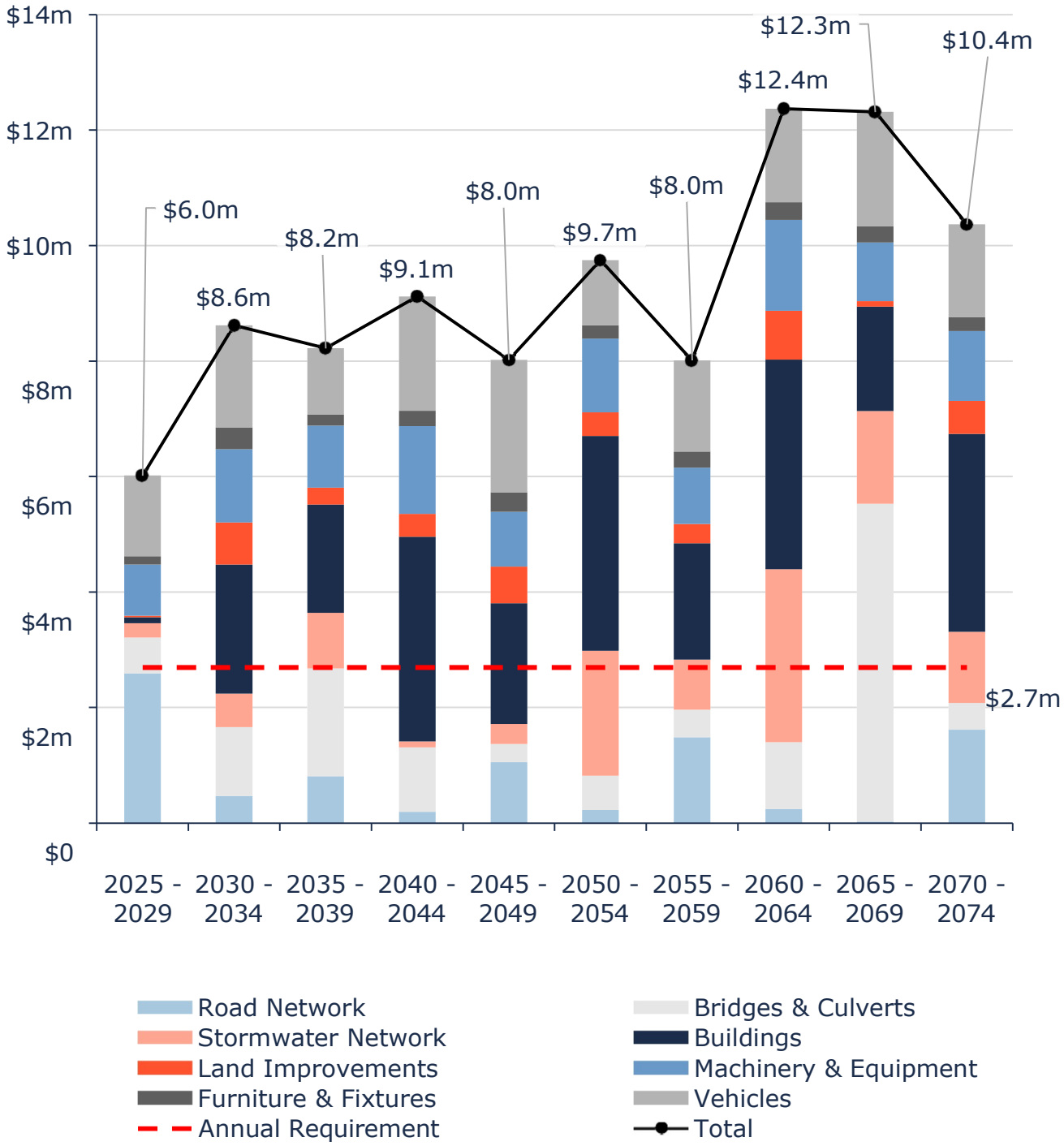
Aging assets require maintenance, rehabilitation, and replacement. Replacement requirements for all asset categories analyzed in this AMP have been conducted over a 50-year time horizon. To achieve and maintain the capital replacement needs for the proposed levels of service, an average of $2.7 million is required each year (red dotted line).

Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. This figure relies on age and available condition data.

The $800,000 annual requirement for roads has been included in the $2.7 million figure, though planned activities are not included in any of the five-year periods as road activities defer to the 2021 Road Needs Study for planning. Activities for

curbs, sidewalks, and streetlights are included in the five-year segments in Figure 18.

Figure 18 Capital Replacement Needs: Portfolio Overview 2025-2074



Additionally, there is currently only an approximately $37,000 backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

It is unlikely that all such assets are in a state of disrepair, requiring immediate replacements. This makes continued and expanded targeted and consistent condition assessments integral. Risk frameworks, proactive lifecycle strategies, and levels of service targets should continue to be used to prioritize projects, continuously refining estimates for ongoing capital needs, and helping to select the right treatment for each asset.

4 Proposed Levels of Service Analysis

4.1 Overview

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

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

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

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

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

4.1.2 Considerations

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

Financial Impact Assessments

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

Infrastructure Condition Assessments

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

Service Metrics

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

Service Impact Assessments

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

Key Lifecycle Activities

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

Risk Management

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

Infrastructure Condition Enhancements

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

Timelines

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

Stakeholder Engagement

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

Flexibility

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

- Financial state of the municipality
- Availability of grants
- Significant increases or decreases in population
- Changes in political priorities
- Changes in resident priorities
- New technologies
- Changes in legislation

- Any proposed changes to LOS should be flexible and able to adapt to changes listed above, and other unforeseen circumstances

4.2 Proposed Levels of Service Scenarios

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

Although all three scenarios were considered, the Township adopted a segment-by-segment approach in determining its path forward. As a result, there was a mix between maintaining the target baseline condition and maintaining certain segments at +5% of the target baseline condition.

4.2.1 Scenario Development & Selection

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

To begin, the Township used the current average condition of each asset group (such as roads, buildings, and other municipal infrastructure) as a reference point to help determine appropriate baseline condition targets. However, these current conditions were used as a guide rather than a fixed rule. In some cases, a more consistent and strategic target was applied, for instance, setting a 50% minimum overall condition target for all Township buildings rather than creating a separate target for each facility.

Once these baseline condition targets were confirmed (see Table 14 below), the Township used the Decision Support (DS) module within the Citywide Asset Management software to model different asset management scenarios over a 50-

year period. These scenarios were built to maintain the selected baseline condition as the service level goal and determine the resulting AAR[8].

Table 14 Baseline Conditions: PLOS

Category	Segment	Baseline Condition
Bridges & Culverts	Bridges	65%
	Guiderails	65%
	Minor Culverts	40%
	Structural Culverts	65%
Buildings	89 Loveys	50%
	Arena	50%
	Hickson Firehall	50%
	Hickson Park	50%
	Hickson Shop	50%
	Innerkip Community Centre	50%
	Innerkip Firehall	50%
	Innerkip Park	50%
	Memorial Hall	50%
	Public Utilities Commission Building	50%
	Queen's Park	50%
	Tavistock Firehall	50%
	Tavistock Shop	50%
Furniture & Fixtures	89 Loveys	50%
	Arena	50%
	East Zorra-Tavistock Office	50%
	Hickson Park	50%

[8] For further clarification on Average Annual Requirement (AAR), see section 2.3.5 Average Annual Requirement.

Category	Segment	Baseline Condition
	Innerkip Community Centre	50%
	Innerkip Park	50%
	Memorial Hall	50%
	Queen's Park	50%
	Tavistock Firehall	50%
Land Improvements	89 Loveys	50%
	Arena	50%
	Hickson Firehall	50%
	Hickson Park	50%
	Hickson Shop	50%
	Innerkip Firehall	50%
	Innerkip Park	50%
	Memorial Hall	50%
	Public Utilities Commission Building	50%
	Queen's Park	50%
	Stonegate Park	50%
	Tavistock Firehall	50%
	Tavistock Shop	50%
Machinery & Equipment	89 Loveys	50%
	Arena	50%
	East Zorra-Tavistock Office	50%
	Fire	70%
	Hickson Firehall	70%
	Hickson Park	50%
	Hickson Shop	50%
	Innerkip Community Centre	50%

Category	Segment	Baseline Condition
	Innerkip Firehall	70%
	Innerkip Park	50%
	Memorial Hall	50%
	Public Works	50%
	Queen's Park	50%
	Recreation	50%
	Tavistock Firehall	70%
	Tavistock Shop	50%
	Curbs	65%
Road Network	Paved Roads	75%[9]
	Sidewalks	65%
	Streetlights	65%
	Catch Basins	50%
	Maintenance Holes	50%
Stormwater Network	OGS Units	50%
	Storm Mains	50%
	Stormwater Management Facility	50%
	Fire	70%
Vehicles	General	50%
	Public Works	50%
	Recreation[10]	-

The DS tool helps predict when assets will need major rehabilitation or replacement. When an asset reaches the point where work is recommended, the software checks whether completing that work would cause the **overall average**

[9] In alignment with the 2021 Road Needs Study.
[10] Recreation vehicles were not considered as part of the PLOS process as they are inherited from other departments once an asset has reached its replacement threshold.

condition of all assets in the scenario to fall below the target. If the target would still be met without immediate action, the work is deferred to the following year and reviewed again. This method reduces unnecessary spending by allowing the Township to postpone work that is not yet critical—without lowering the overall quality of service.

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

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

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

In some instances, the AAR may not change from scenario to scenario. This can happen for two reasons:

1. A low number of assets are included in the scenario and therefore there are fewer opportunities for rehabilitation/replacement deferral
2. There is a very low condition threshold for replacement.
    - Even if the average condition of all assets in the scenario drops below the set target, an activity cannot be performed until the replacement threshold for an individual asset is met. DS will not plan a replacement early.
    - For example, if the replacement threshold for all assets in a scenario is 0%, even if the overall average condition continues to drop further and further below the target condition each year, until an asset hits a 0% condition it cannot be replaced.

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

Table 15 provides the AAR for each of the scenarios outlined above. The final selection for each segment is highlighted in green.

Table 15 AAR for Scenarios: PLOS

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
Bridges & Culverts	Bridges	$124,816	$124,816	$124,816	$124,816
	Guiderails	$22,393	$22,393	$22,393	$22,393
	Minor Culverts	$54,244	$62,097	$69,006	$77,412
	Structural Culverts	$53,263	$53,263	$53,263	$53,263
	Total	**$254,715**	**$262,568**	**$269,478**	**$277,884**
Buildings	89 Loveys	$186,808	$186,808	$196,676	$264,737
	Arena	$128,844	$134,856	$137,391	$140,785
	Hickson Firehall	$9,380	$9,420	$9,661	$10,351
	Hickson Park	$9,254	$9,381	$9,503	$10,817
	Hickson Shop	$25,597	$28,688	$31,217	$34,298
	Innerkip Community Centre	$17,438	$18,191	$18,610	$19,505
	Innerkip Firehall	$8,094	$8,374	$8,374	$9,493

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
	Innerkip Park	$7,845	$8,101	$8,176	$9,071
	Memorial Hall	$20,564	$21,170	$21,900	$22,438
	Public Utilities Commission Building	$4,560	$4,562	$4,562	$5,352
	Queen's Park	$20,410	$22,420	$23,752	$26,375
	Tavistock Firehall	$13,494	$13,596	$13,596	$15,281
	Tavistock Shop	$10,363	$10,688	$11,447	$13,174
	Total	**$462,652**	**$476,255**	**$494,865**	**$581,677**
Furniture & Fixtures	89 Loveys	$19,072	$19,832	$20,720	$21,500
	Arena	$9,146	$9,193	$9,193	$9,377
	East Zorra-Tavistock Office	$3,512	$3,825	$4,035	$4,269
	Hickson Park	$1,249	$1,249	$1,249	$1,347
	Innerkip Community Centre	$2,384	$2,384	$2,384	$2,431
	Innerkip Park	$5,046	$5,046	$5,046	$5,719

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
	Memorial Hall	$8,630	$8,630	$8,630	$8,803
	Queen's Park	$1,669	$1,669	$1,669	$1,781
	Tavistock Firehall	$648	$648	$648	$661
	Total	**$51,356**	**$52,475**	**$53,574**	**$55,887**
Land Improvements	89 Loveys	$8,117	$9,850	$9,850	$11,112
	Arena	$643	$643	$643	$721
	Hickson Firehall	$137	$157	$157	$186
	Hickson Park	$12,712	$13,386	$13,803	$15,244
	Hickson Shop	$115	$115	$115	$130
	Innerkip Firehall	$222	$222	$222	$225
	Innerkip Park	$18,567	$18,606	$18,606	$21,537
	Memorial Hall	$73	$73	$73	$83
	Public Utilities Commission Building	$14	$14	$14	$25

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
	Queen's Park	$36,591	$36,591	$36,735	$40,870
	Stonegate Park	$3,483	$3,483	$3,483	$3,957
	Tavistock Firehall	$1,099	$1,099	$1,099	$1,114
	Tavistock Shop	$2,587	$2,587	$2,587	$2,652
	Total	**$84,360**	**$86,825**	**$87,387**	**$97,857**
Machinery & Equipment	89 Loveys	$82,378	$82,614	$82,614	$82,614
	Arena	$26,119	$27,358	$27,405	$27,412
	East Zorra-Tavistock Office	$22,724	$23,241	$23,552	$24,316
	Fire	$6,404	$6,404	$6,404	$6,523
	Hickson Firehall	$17,947	$17,947	$17,947	$17,947
	Hickson Park	$586	$586	$586	$597
	Hickson Shop	$9,224	$9,224	$9,224	$9,583
	Innerkip Community Centre	$11	$11	$11	$11
	Innerkip Firehall	$15,317	$15,317	$15,317	$15,367

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
	Innerkip Park	$782	$782	$782	$798
	Memorial Hall	$21	$21	$21	$21
	Public Works	$9,116	$9,309	$9,583	$10,358
	Queen's Park	$196	$196	$196	$200
	Recreation	$5,313	$5,419	$5,419	$5,527
	Tavistock Firehall	$13,340	$13,340	$13,340	$14,000
	Tavistock Shop	$18,892	$20,314	$21,651	$23,750
	Total	**$228,370**	**$232,083**	**$234,050**	**$239,025**
Road Network	Curbs	$48,533	$51,140	$53,419	$62,236
	Paved Roads[11]	$600,000	$800,000	$1,000,000	$1,300,000
	Sidewalks	$113,523	$117,072	$120,519	$126,074
	Streetlights	$31,932	$32,827	$33,676	$34,549
	Total	**$793,988**	**$1,001,039**	**$1,207,614**	**$1,522,859**

[11] Values adjusted to align with 2021 Road Needs Study

Category	Segment	Average Annual Requirement			
		-5% Condition	Maintain Baseline	+5% Condition	No Target
Stormwater Network	Catch Basins	$43,147	$43,147	$43,147	$64,607
	Maintenance Holes	$10,203	$11,258	$12,423	$14,214
	OGS Units	$1,176	$1,176	$1,176	$1,733
	Storm Mains	$94,310	$104,517	$113,649	$129,912
	Stormwater Management Facility	$60,970	$61,034	$61,034	$61,035
	Total	**$209,807**	**$221,132**	**$231,429**	**$271,501**
Vehicles	Fire	$169,127	$169,127	$169,127	$169,127
	General	$35,151	$36,920	$36,920	$37,242
	Public Works	$142,420	$150,075	$154,510	$160,060
	Total	**$346,698**	**$356,122**	**$360,557**	**$366,429**
TOTAL		**$2,431,945**	**$2,688,499**	**$2,938,953**	**$3,413,116**

4.2.2 Lifecycle Changes

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

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

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

4.2.3 Affordability/Achievability

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

For a more in-depth breakdown, see Section 13.

4.2.4 Changes to Community and Technical Levels of Service

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

4.2.5 Proposed LOS Risks

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

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

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

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

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

Category Analysis: Core Assets

5 Road Network

The Township's road network has a current replacement cost of $74.3 million, distributed primarily to paved and unpaved roads. The Township also owns and manages other supporting infrastructure and capital assets, including curbs, sidewalks, and streetlights.

5.1 Inventory & Valuation

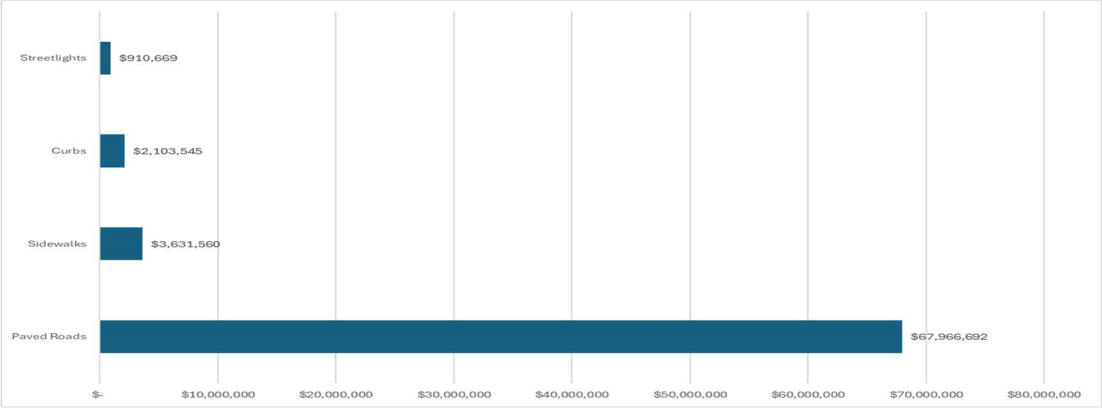
Table 16 summarizes the quantity and current replacement cost of the Township's various road network assets as managed in its primary asset management register, Citywide.

Table 16 Detailed Asset Inventory: Road Network

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR[12]
Curbs	50	KM	$2,103,545	Cost per Unit	$51,000
Paved Roads	89.1	KM	$67,966,692	Cost per Unit	$800,000
Sidewalks	28	KM	$3,631,560	Cost per Unit	$117,000
Streetlights	683	Assets	$910,669	Cost per Unit	$33,000
Unpaved Roads	136.5	KM	Not Planned for Replacement[13]		
TOTAL			**$74,612,466**	**Cost per Unit**	**$1,001,000**

[12] Average Annual Capital Requirement (AAR). For further details, see section 2.3.5 Average Annual Requirement.
[13] Gravel roads undergo perpetual operating and maintenance activities. If maintained properly, they can theoretically have a limitless service life. As this asset is not funded by capital dollars, it is not included.

Figure 19 Portfolio Valuation: Road Network



5.2 Asset Condition

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

- The Township conducts daily visual patrols for road assets, noting any deficiencies on paper, and performs inspections ranging from once per week to once per month, with Class 3 roads inspected weekly, Class 5 roads inspected monthly, and all other roads inspected biweekly.
- Compliance to Minimum Maintenance Standards (MMS) are used to gauge the condition of the paved roads and determine whether mid-life activities or replacement are required.

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

Table 17 Condition Ranges: Paved Roads – Road Network

Condition Ranges	Description
Very Good (80% – 100%)	♦ New or recently rehabilitated pavement, with no significant defects. ♦ Smooth surface with no visible cracks, rutting, or deterioration. ♦ Excellent drainage and stable shoulders.

Condition Ranges	Description
	♦ Minimal maintenance required beyond routine inspections. ♦ Long expected service life with preventive maintenance. 
Good (70% – 80%)	♦ Minor cracking and minimal surface distress, with good ride quality. ♦ No significant rutting or potholes. ♦ Drainage functions well, with stable shoulders and ditches. ♦ Periodic crack sealing or surface treatment can maintain condition. ♦ No major rehabilitation required in the near future. 
Fair (65% – 70%)	♦ Moderate cracking, surface wear, and minor rutting, but road remains serviceable.

Condition Ranges	Description
	♦ Some patched areas and minor potholes, but no immediate safety risks. ♦ Drainage is mostly functional, with some minor erosion or edge distress. ♦ Surface treatments or overlays needed to extend pavement life. ♦ Routine maintenance required to slow further deterioration. 
Poor (45% – 65%)	♦ Major cracking and moderate to severe rutting, affecting ride quality. ♦ Widespread patching and pothole formation requiring frequent repairs. ♦ Drainage issues and edge failures, leading to erosion and shoulder deterioration. ♦ Structural integrity weakened, with potential load restrictions. ♦ Requires resurfacing or deep rehabilitation to restore function.

Condition Ranges	Description
	
Very Poor (0% –45%)	♦ Severe pavement failures, including large potholes, deep rutting, and widespread alligator cracking. ♦ Significant surface distortion and heaving, making travel unsafe. ♦ Extensive base failure, with visible pumping, settlement, and subgrade exposure. ♦ Frequent maintenance required, but rehabilitation is no longer cost-effective. ♦ Requires full-depth reconstruction or major rehabilitation. 

As illustrated in Figure 20, the majority of the Township's road network asset categories are in fair or better condition.

Figure 20 Asset Condition: Road Network

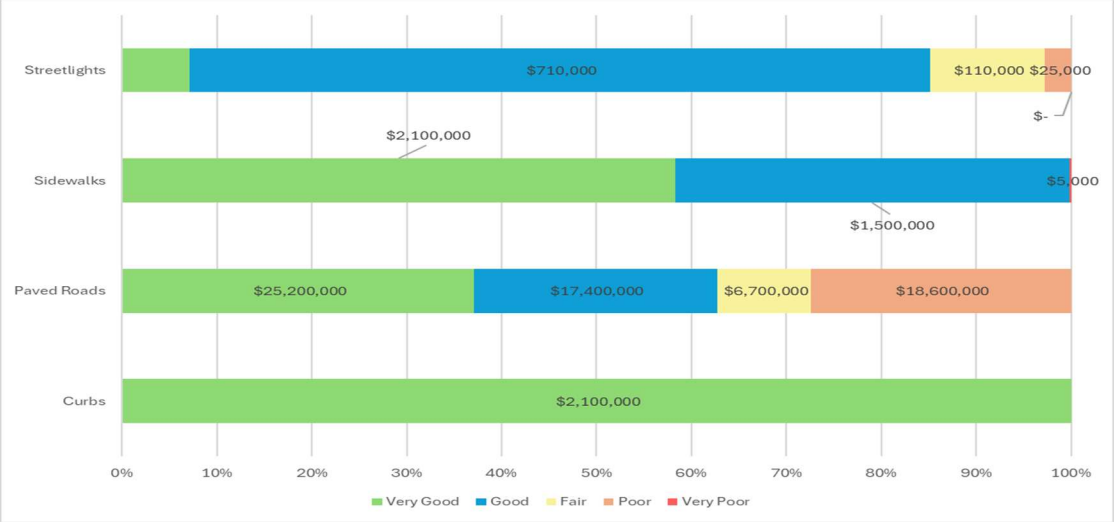


Table 18 summarizes the replacement cost-weighted condition of the Township's road network portfolio. Based primarily on assessed condition data, 100% of road network portfolio is in fair or better condition. Assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Table 18 Asset Condition: Road Network by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[14]
Curbs	$0	0%	$2,103,545	99%	Very Good (100%)
Paved Roads	$409,037	1%	$67,557,655	99%	Good (85%)
Sidewalks	$5,768	0%	$3,625,792	100%	Good (79%)
Streetlights	$24,578	3%	$886,091	97%	Fair (67%)
TOTAL	**$439,383**	**1%**	**$74,173,083**	**99%**	**Good (78%)**

Condition data was available for 99% of road network, based on replacement costs; age was used to estimate conditions for the remaining 1% of assets.

[14] Weighted by replacement cost.

5.3 Age Profile

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

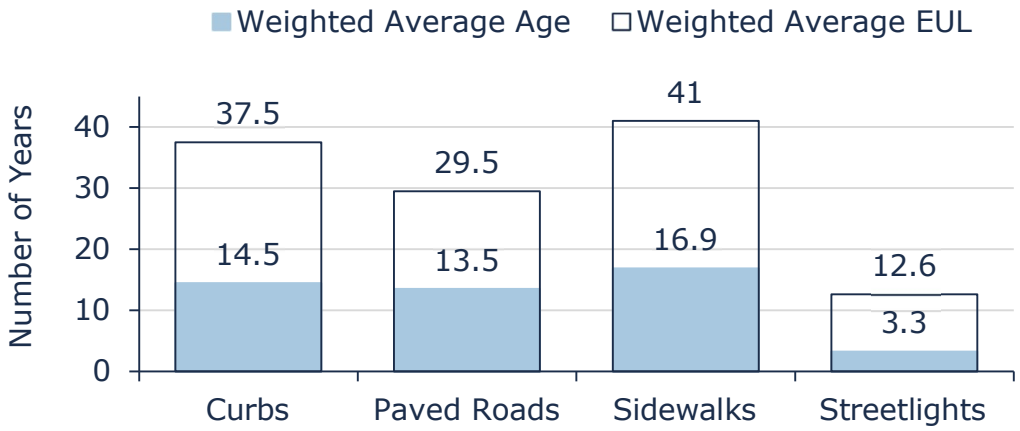
In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning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

Table 19 summarizes and Figure 21 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 19 Detailed Asset Age: Road Network

Segment	Weighted Average EUL	Weighted Average Age
Curbs	37.5	14.5
Paved Roads	29.5	13.5
Sidewalks	41.0	16.9
Streetlights	12.6	3.3

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



Age analysis shows that on average all asset segments have not yet reached the midpoint of their design life.

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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

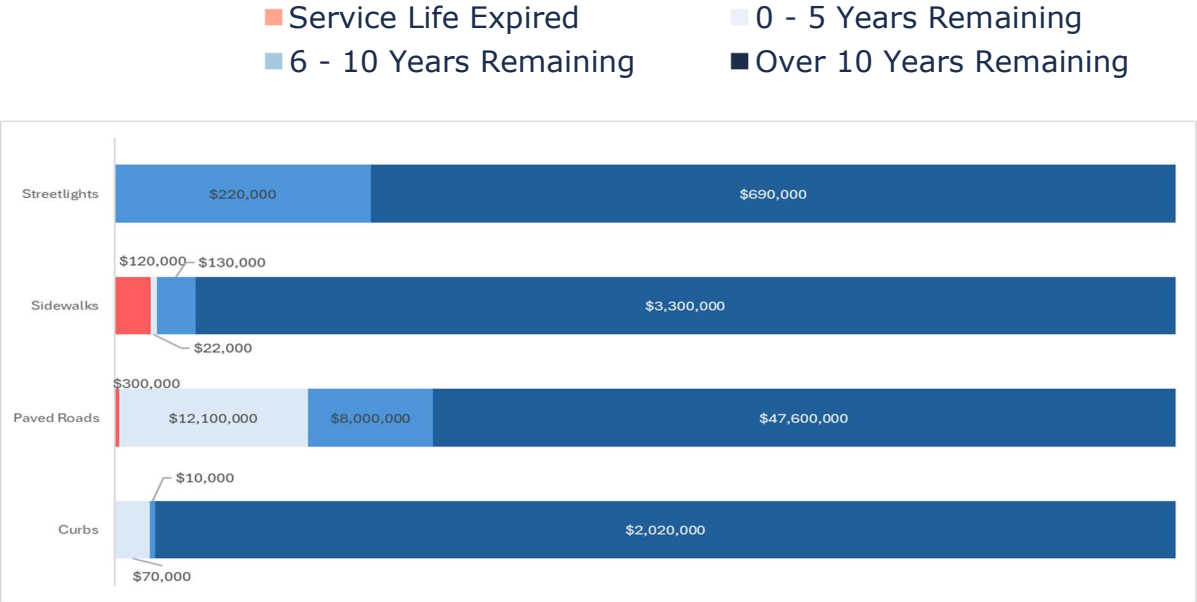
5.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 5% of assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 20 Service Life Remaining: Road Network

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
Curbs	-	$70k	$10k	$2.0m
Paved Roads	$300k	$12.1m	$8.0m	$47.6m
Sidewalks	$120k	$22k	$130k	$3.3m
Streetlights	-	-	$220k	$690k
TOTAL	**$420k**	**$12.2m**	**$836k**	**$53.6m**

Figure 22 Service Life Remaining: Road Network



5.5 Current Approach to Lifecycle Management

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

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

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

Table 21 Lifecycle Management Strategy: Road Network (Rural Paved Roads)

Rural Paved Roads		
Event Name	**Event Class**	**Event Trigger**
Resurfacing	Maintenance	Year 14
Full Reconstruction	Replacement	0 to 30 Condition

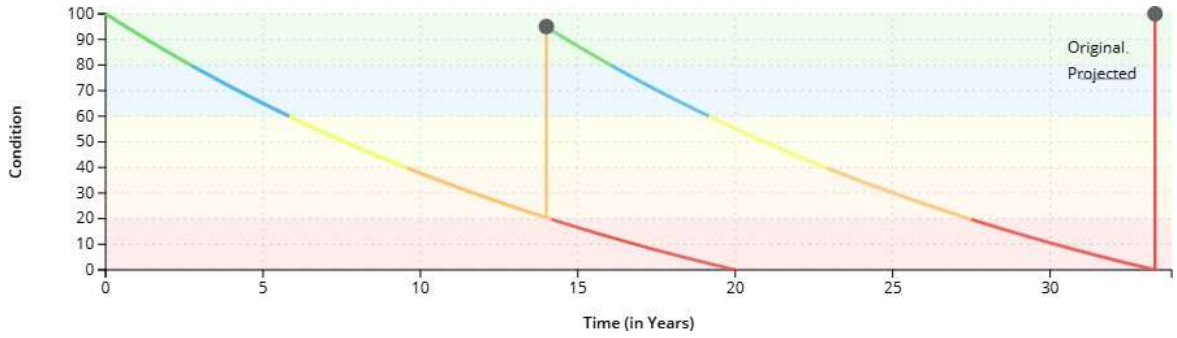
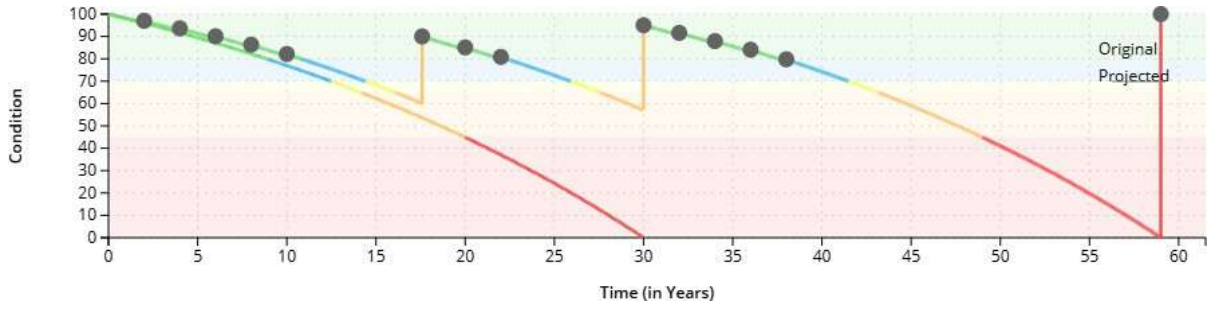


Table 22 Lifecycle Management Strategy: Road Network (Urban Paved Roads)

Urban Paved Roads		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Maintenance	Years 2, 4, 6, 8, 10
Resurfacing	Rehabilitation	60 Condition
Crack Sealing	Maintenance	Years 20, 22
Major Rehabilitation	Rehabilitation	Year 30
Crack Sealing	Maintenance	Years 32, 34, 36, 38
Full Reconstruction	Replacement	0 to 40 Condition

Urban Paved Roads



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

Table 23 Lifecycle Management Strategy: Road Network

Activity Type	Description of Current Strategy
Maintenance & Testing	Minimum Maintenance Standards (MMS) Regulations are followed for Road Network assets
	Inspections for roads range from once per week to once per month. Class 5 roads are inspected once per month, Class 3 roads are inspected once per week, and the remaining roads are inspected every two weeks
	The Township conducts daily visual patrols for road assets. Any deficiencies observed from patrols are noted on paper
	The most recent Roads Needs Study (RNS) was completed in 2021 which was the first one completed within the Township. The Township plans to budget for a RNS to be completed every 5 years
	The Township completes crack sealing on paved roads as needed
	Gravel roads are re-graveled on a two-year cycle. Half of the Township's gravel roads are re-graveled each year, and the remaining gravel roads are completed the following year

Activity Type	Description of Current Strategy
	Ditching on roads is completed on an as-needed basis
	Chloride brine solution is applied to gravel roads once per year to suppress dust
Rehabilitation	Rural paved roads are surface treated every 14 years until a full road reconstruction is required
	Urban paved roads are generally resurfaced mid-life, followed by a major rehabilitation treatment 5 – 10 years later, such as a mill and pave
Replacement	Major road repair and reconstruction are prioritized by pavement condition, recommendations from 2021 Road Needs Study, and staff judgement.
	Asset replacements are coordinated with other underground assets renewal whenever reasonably possible.

5.6 Forecasted Long-Term Replacement Needs

Analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements total $1.0 million for all assets in the road network category. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The $800,000 annual requirement for roads has been included in the $1.1 million figure, though planned activities are not included in any of the five-year periods as road activities defer to the 2021 Road Needs Study for planning.

The 10-year capital requirements expanded in Appendix B have accounted for removing an accumulation of outstanding works and continuing to rehabilitate or replace assets in alignment with the proposed levels of service, but these backlogged activities can be distributed across a larger timeframe to allow for a more realistic budget while adjusting to the proposed levels of service target.

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

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

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

5.7 Risk Analysis

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

5.7.1 Quantitative Risk

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

Figure 24 Risk Matrix: Road Network (Roads)

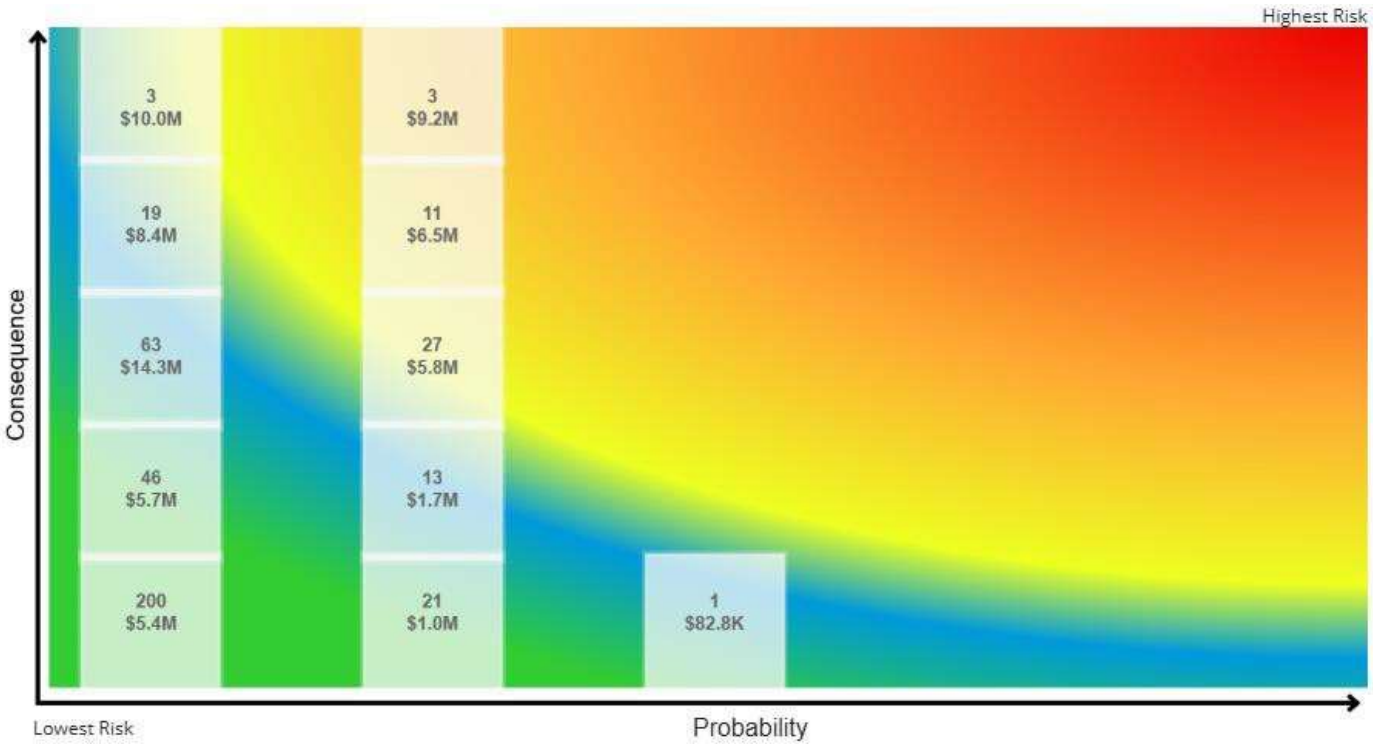
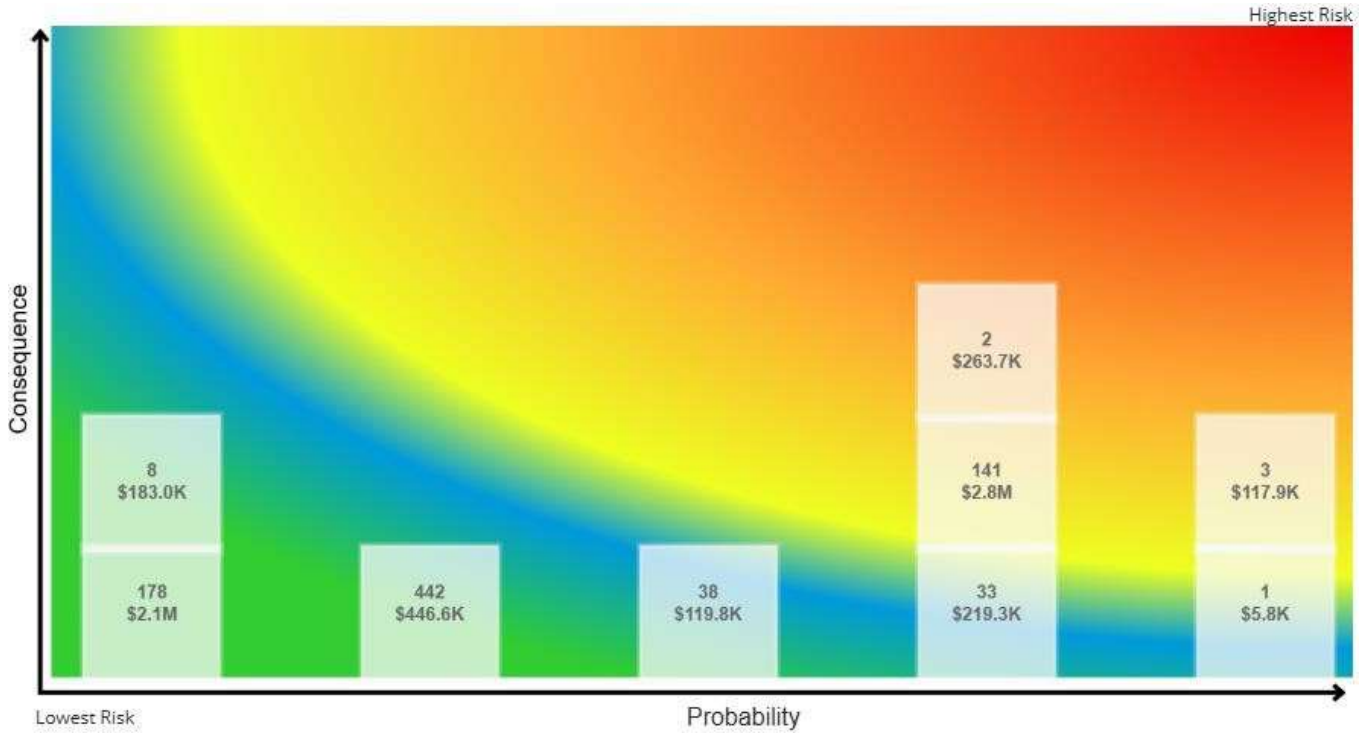


Figure 25 Risk Matrix: Road Network (Remaining Assets)



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

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

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

Figure 26 Risk Rating Ranges: Road Network

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$34,097,103	$20,312,613	$13,593,288	$12,838,939	$0
(42%)	(25%)	(17%)	(16%)	(0%)

Table 24 Probability of Failure, Consequence of Failure, Risk Ratings: Road Network by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Curbs	1.12 / 5	1.41 / 5	1.61 / 25
Paved Roads	1.56 / 5	1.84 / 5	2.96 / 25
Sidewalks	1.85 / 5	1.87 / 5	3.46 / 25
Streetlights	3.05 / 5	1.4 / 5	4.28 / 25
TOTAL	**2.24 / 5**	**1.59 / 5**	**3.48 / 25**

Overall, the average risk rating for road network assets is 3.48, which is considered Very Low.

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

5.7.2 Qualitative Risk

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

Climate Change & Extreme Weather Events

An increase in the frequency and intensity of precipitation events can result in flooding of sections of the road network. The drainage capacity of the road network is not sufficient to withstand heavy stormwater runoff, particularly on low-lying roads. Further issues can arise as a result of flooding and poor drainage including accelerated deterioration caused by freeze/thaw cycles. To improve asset resiliency, Staff should identify problem areas and improve drainage through enhanced lifecycle strategies.

Capital Funding Strategies

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

5.8 Current Levels of Service

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

5.8.1 Community Levels of Service

Table 25 O. Reg. 588/17 Community Levels of Service: Road Network

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps of the road network in the Township and its level of connectivity	See Appendix C for maps.
Quality	Description or images that illustrate the different levels of road class pavement condition	The Township completed a Road Needs Study in the summer of 2021 in coordination with Applied Research Associates Incorporated. The scope of work included assessing the condition of all roads (both paved and unpaved) and all sidewalk assets and collecting additional asset information including length, width, area, surface type and construction quality. Every road asset in scope received a pavement condition index (PCI) score between 0-100 and every sidewalk received a condition score between 0-10. Road appurtenances like curbs, regulatory signs, guide rails and ditches were also assessed for condition based on a 5-point scale of Very good to Very poor.
Affordable	The road network is managed cost-effectively for the expected level of service.	The Township conducts a variety of maintenance (e.g., crack sealing, re-gravelling, ditching), testing (e.g., RNS), rehabilitation (e.g., surface treatment, mill, and pave), and

Service Attribute	Qualitative Description	Current LOS (2023)
		replacement activities on their road network. These activities work to ensure that the Township's assets are maintained in the best possible condition based on available resources.
Safe & Regulatory	The road network is managed in accordance with minimum maintenance standards and all other regulatory requirements.	The Township maintains their road network assets in accordance with MMS (O. Reg. 239/02). This includes monitoring the weather, with increased frequency between October and April, and responding to snow and ice accumulation on roadways within the time permitted based on the snow depth.

5.8.2 Technical Levels of Service

Table 26 O. Reg. 588/17 Technical Levels of Service: Road Network

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0 lane km/km^2
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	55.69 lane kilometers/ 241.96 land area 0.23 lane km/km^2
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	358 lane kilometers/ 241.96 land area 1.48 lane km/km^2
Quality	Average pavement condition index for paved roads in the Township	74%

Service Attribute	Technical Metric	Current LOS (2023)
	Average surface condition for unpaved roads in the Township (e.g., excellent, good, fair, poor)	Fair
Performance	% of road network assets in fair or better condition	70%
	% of road network assets in poor or lower condition	30%
	Actual annual capital budget: average required annual capital requirements	($537,000: $1,001,000) (0.54 : 1)

5.9 Proposed Levels of Service

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

Table 27 outlines the proposed LOS scenarios that were analyzed for the road network. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 27 Proposed LOS: Road Network

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Curbs	60%	65%	70%	-	Maintain
	$48,533	$51,140	$53,419	$62,236	
Paved Roads	70%	75%	80%	-	Maintain
	$600,000	$800,000	$1,000,000	$1,300,000	

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Sidewalks	60%	65%	70%	-	Maintain
	$113,523	$117,072	$120,519	$126,074	
Streetlights	60%	65%	70%	-	Maintain
	$31,932	$32,827	$33,676	$34,549	
TOTAL	**$793,988**	**$1,001,039**	**$1,207,614**	**$1,522,859**	**$1,001,039**

6 Bridges & Culverts

The Township's bridges and culverts have a current replacement cost of $65.0 million.

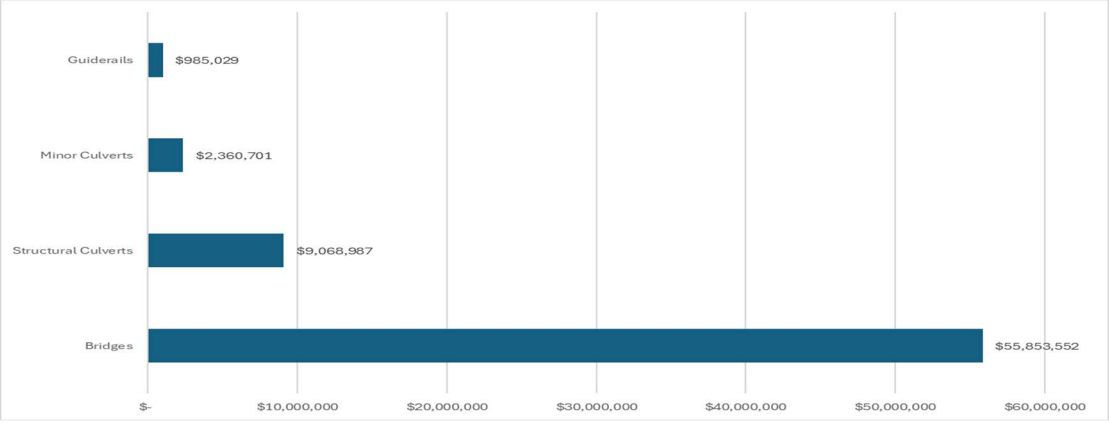
6.1 Inventory & Valuation

Table 28 summarizes the quantity and current replacement cost of bridges and culverts.

Table 28 Detailed Asset Inventory: Bridges & Culverts

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR[15]
Bridges	29	Assets	$55,853,552	User-Defined	$125,000
Guiderails	2	KM	$985,029	Cost per Unit	$22,000
Minor Culverts	16	KM	$2,360,701	User-Defined	$62,000
Structural Culverts	18	Assets	$9,068,987	User-Defined	$53,000
TOTAL			**$68,268,269**		**$263,000**

Figure 27 Portfolio Valuation: Bridges & Culverts



[15] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

6.2 Asset Condition

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

- Bridges and culverts are inspected during route patrols, with annual internal inspections that include bridge washing and roadside trimming.
- Lifecycle activities are guided by mandated structural inspections per the Ontario Structure Inspection Manual (OSIM), with rehabilitation recommendations prioritized based on risk assessment and integrated into the asset management system, using data from the 2021 OSIM report by K. Smart Associates.

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

Table 29 Bridge Condition Index (BCI) Ranges

Condition Ranges (BCI)	Description
Very Good (90 – 100)	♦ New or recently rehabilitated structure, with no significant defects. ♦ Deck, beams, bearings, and abutments in excellent condition, with no visible wear. ♦ Efficient drainage, minimal surface wear, and no corrosion issues. ♦ Meets or exceeds all safety and design standards. ♦ Minimal maintenance required beyond routine inspections.
Good (70 – 90)	♦ Minor surface wear and some cosmetic deterioration, such as light scaling or superficial cracking. ♦ Deck, joints, and bearings in good working condition, with no major structural concerns. ♦ Minimal corrosion or wear on steel and concrete elements.

Condition Ranges (BCI)	Description
	♦ Routine inspections and preventive maintenance needed to extend lifespan. ♦ No major rehabilitation required in the near future.
Fair (60 – 70)	♦ Moderate wear and surface deterioration, including minor cracking, spalling, and some exposed reinforcing steel. ♦ Deck and joints in functional condition, but requiring increased maintenance. ♦ Bearings, beams, and abutments showing early signs of corrosion or wear. ♦ No immediate safety concerns, but planning for future rehabilitation needed. ♦ Regular maintenance and potential repairs required to maintain serviceability.
Poor (40 – 60)	♦ Advanced deterioration of structural components, with noticeable concrete scaling, cracking, or steel corrosion. ♦ Deck, beams, or bearings showing significant wear, affecting bridge performance. ♦ Localized section loss on steel or concrete elements, requiring close monitoring. ♦ Possible minor load restrictions, but structure remains functional. ♦ Major rehabilitation or strengthening required in the near term.
Very Poor (0 – 40)	♦ Severe structural deterioration, including major section loss, deep cracking, and exposed or corroded reinforcing steel. ♦ Significant deck and beam damage, with failing expansion joints, delaminated concrete, and spalling.

Condition Ranges (BCI)	Description
	♦ Major safety concerns, including load restrictions or risk of failure. ♦ Frequent water leakage and erosion, undermining abutments, or footings. ♦ Immediate rehabilitation or full replacement required.

Figure 28 summarizes the replacement cost-weighted condition of the Township's bridges and culverts. Based on the Township's recent Ontario Structures Inspection Manual (OSIM) assessments, 85% of bridges and culverts are in fair or better condition. Some elements or components of these structures may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition. 15% of the bridges and culverts portfolio is currently in poor or lower condition; assets components reaching this condition rating in the future may require replacement in the immediate or short term.

Figure 28 Asset Condition: Bridges & Culverts

Condition is further detailed in Table 30, based on in-field condition assessments from the most recent OSIMs report. Bridges and structures with a poor or lower rating (i.e., a bridge condition index of less than 60) are not necessarily unsafe for regular use. The OSIM ratings are designed to identify repairs needed to elevate condition ratings to a fair or higher.

Table 30 Asset Condition: Bridges & Culverts by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[16]
Bridges	$7,532,322	13%	$48,321,230	87%	Fair (64%)
Guiderails	$157,010	16%	$828,019	84%	Good (77%)
Minor Culverts	$1,189	0%	$2,359,512	100%	Poor (44%)
Structural Culverts	$2,303,944	25%	$6,765,043	75%	Poor (54%)
TOTAL	**$9,994,465**	**15%**	**$58,273,804**	**85%**	**Poor (54%)**

6.3 Age Profile

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

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

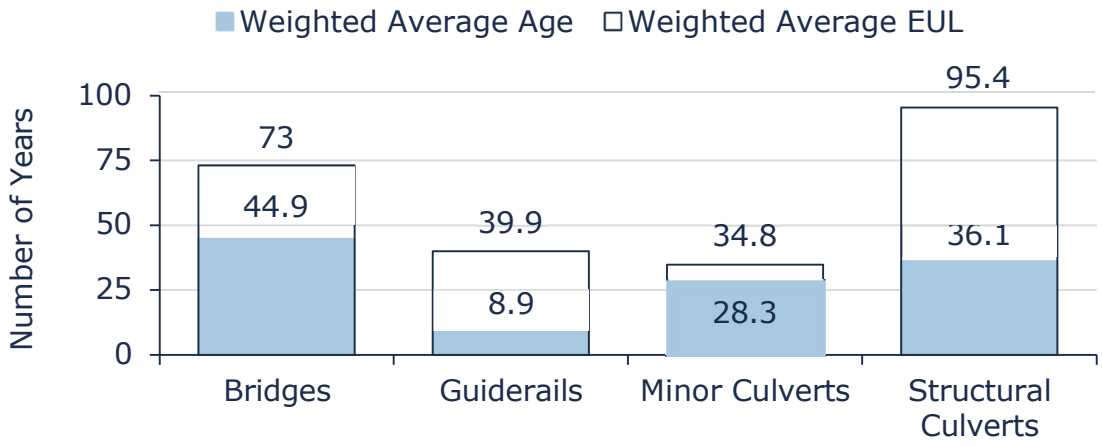
Table 31 summarizes and Figure 29 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

[16] Weighted by replacement cost.

Table 31 Detailed Asset Age: Bridges & Structural Culverts

Segment	Weighted Average EUL	Weighted Average Age
Bridges	73.0	44.9
Guiderails	39.9	8.9
Minor Culverts	34.8	28.3
Structural Culverts	95.4	36.1

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



Age analysis reveals that on average, bridges have consumed a little more than half of the majority of their estimated useful life, minor culverts are reaching the latter end of their design life, and guiderails and structural culverts are in the earlier stages of their design life.

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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type

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

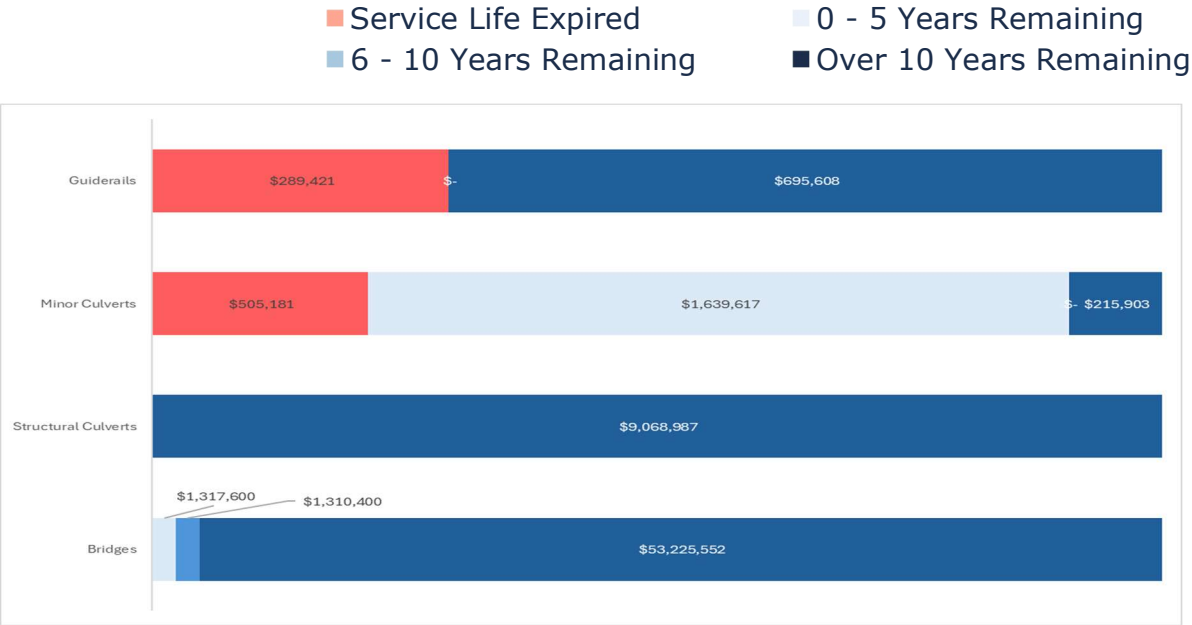
6.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 1% of assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 32 Service Life Remaining: Bridges & Culverts

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
Bridges	-	$1.3m	$1.3m	$53.2m
Guiderails	-	-	-	$9.1m
Minor Culverts	$505k	$1.6m	-	$216k
Structural Culverts	$289k	-	-	$696k
Total	**$794k**	**$2.9m**	**$1.3m**	**$63.2m**

Figure 30 Service Life Remaining: Bridges & Culverts



6.5 Current Approach to Lifecycle Management

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

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

Table 33 Lifecycle Management Strategy: Bridges & Culverts

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation / Replacement	Bridges & Culverts inspections are completed during route patrols.
	Internal inspections are completed once per year which includes bridge washing and roadside trimming.
	Lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM). This includes

Activity Type	Description of Current Strategy
	recommended rehabilitations projects. The Township carefully considers the recommendations from the OSIM but prioritizes implementation based on risk assessment to determine the most crucial actions to be taken. OSIM Report recommendations are appended to assets in the asset management software system and represented in this report's findings.
	Data, including recommended rehabilitation activities, dates, and estimated costs, in this report is as per the OSIM report completed in 2021 by K. Smart Associates.

6.6 Forecasted Long-Term Replacement Needs

Analysis was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets Database, the Township's primary asset management system and asset register.

The Township's average annual requirements for bridges and culverts total $263,000. 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.

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

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

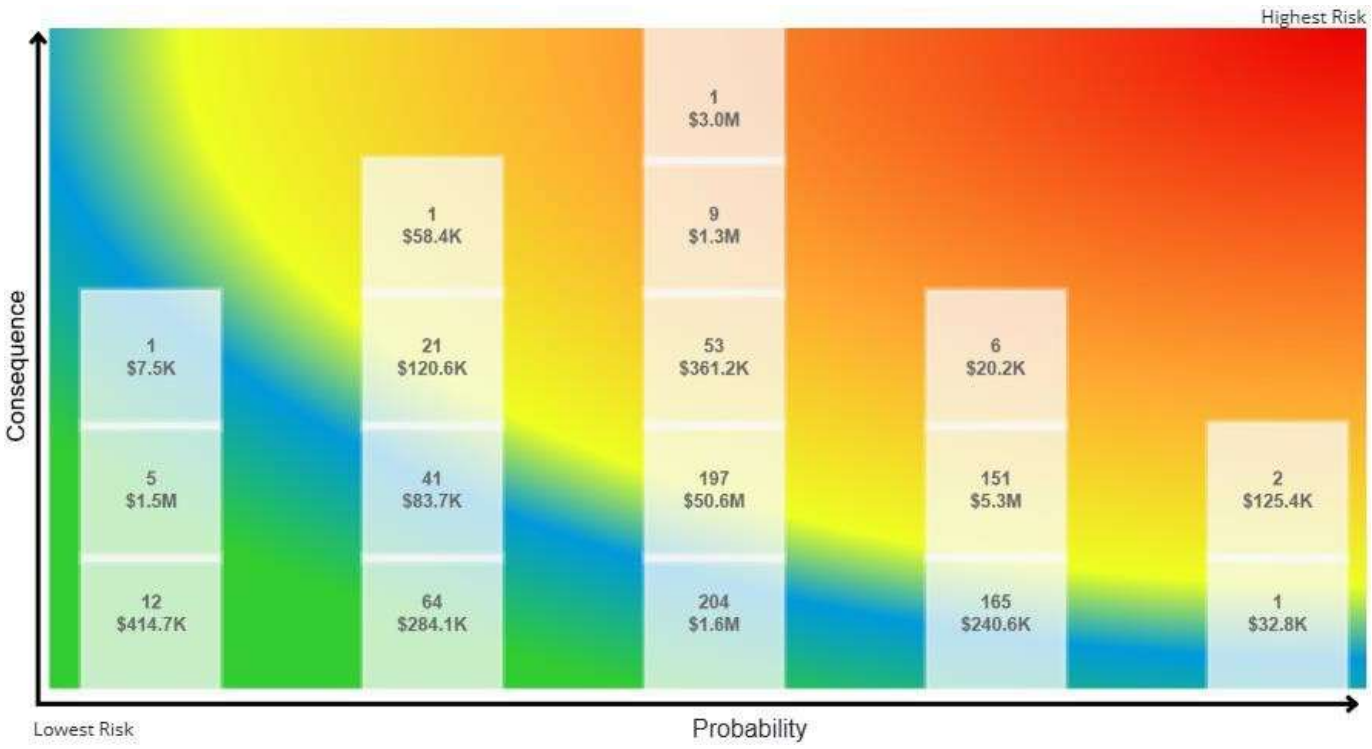
6.7 Risk Analysis

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

6.7.1 Quantitative Risk

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

Figure 32 Risk Matrix: Bridges & Culverts



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

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

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

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

Figure 33 Risk Rating Ranges: Bridges & Culverts

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$2,296,039	$54,735,724	$3,957,861	$5,299,977	$2,489,867
(3%)	(80%)	(6%)	(8%)	(3%)

Table 34 Probability of Failure, Consequence of Failure, Risk Ratings: Bridges & Culverts by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Bridges	2.77 / 5	2.77 / 5	7.81 / 25
Guiderails	2.10 / 5	1.13 / 5	2.41 / 25
Minor Culverts	3.76 / 5	1.82 / 5	6.57 / 25
Structural Culverts	3.02 / 5	2.33 / 5	6.93 / 25
TOTAL	**3.70 / 5**	**1.84 / 5**	**6.52 / 25**

Overall, the average risk rating for bridges and culverts is 6.52, which is considered Moderate.

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

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

6.7.2 Qualitative Risk

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

- Missed opportunities for cost savings and increases in lifecycle costs
- Deferral of vital projects, or further lending and borrowing
- Accelerated asset deterioration and premature failure, which may lead to public health and safety hazards, and disruption of services to the Township's residential and commercial base
- A decline in public satisfaction with the Township's service standards and the resulting reputational damage
- Bridges are inherently vital to the Township's transportation infrastructure, and their failures can disconnect communities, lead to public health and safety incidents, and can impede the efficient flow of residential and commercial traffic

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

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

Climate Change & Extreme Weather Events

Increased freeze and thaw cycles along with increased occurrence of ice jams pose significant risks for bridges within a municipality. More frequent freeze and thaw cycles can weaken the bridge's structural elements, leading to cracking and deterioration of the bridge's surface. Additionally, when ice jams form around the bridge, they obstruct the normal flow of water, causing water levels to rise upstream. The accumulation of water can exert excessive pressure on the bridge, potentially leading to damage and

compromising its stability. The combination of freeze and thaw cycles and ice jams increases the likelihood of bridge damage. The Township should implement effective monitoring and maintenance programs to ensure the integrity of bridges during the winter months.

Demographic Change & Community Expectations

The presence of new residents from larger municipalities expecting a higher level of service poses notable risks to the smaller municipality. As these new residents bring with them increased public expectations concerning municipal assets and services, the Township may face challenges in meeting these elevated standards due to limited funding and staffing resources. This mismatch between expectations and available resources can strain the Township's ability to maintain service quality. This may require the Township to increase funding for accommodating resident demands which may not be supported by the residents. The Township must proactively address these discrepancies and engage in effective communication and resource management to accommodate the needs of both new and existing residents.

6.8 Current Levels of Service

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

6.8.1 Community Levels of Service

Table 35 O. Reg. 588/17 Community Levels of Service: Bridges & Culverts

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description of the traffic that is supported by Township bridges (e.g., heavy	Bridges and structural culverts are a key component of the municipal transportation network. None of the Township's structures have loading or dimensional

Service Attribute	Qualitative Description	Current LOS (2023)
	transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	restrictions meaning that a variety of vehicle types, including heavy transport, motor vehicles, emergency vehicles and cyclists can cross them without restriction.
Quality	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	See Appendix C.
Safe & Regulatory	Bridges and culverts provide safe vehicular and/or pedestrian passage, and all structures are fully compliant with regulatory requirements.	All bridges and structural culverts are inspected every two years by a third-party engineering firm. The last assessment in 2021 was completed by K. smart Associates. Following on-site inspections, the Township was provided with a report detailing the asset's elements, inspection findings, intervention recommendations, and the opinion of asset condition.
Affordable	Bridges and culverts are managed cost-effectively to meet the established level of service	Lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM). This includes recommended rehabilitations projects. The Township carefully considers the recommendations from the OSIM but prioritizes implementation based on risk assessment to determine the most crucial actions to be taken. OSIM Report recommendations are appended to assets in the asset management software system and represented in this report's findings.

6.8.2 Technical Levels of Service

Table 36 O. Reg. 588/17 Technical Levels of Service: Bridges & Culverts

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of bridges in the Township with loading or dimensional restrictions	0%
Quality	Average bridge condition index value for bridges in the Township	58
	Average bridge condition index value for structural culverts in the Township	56
Safe & Regulatory	% of bridges and structural culverts inspected every two years	100%
Affordable	Annual O & M budget	$32,000
Performance	% of assets in fair or better condition	6%
	% of assets in poor or lower condition	94%
	Actual annual capital budget : average required annual capital requirements	$182,000 : $263,000 (0.69 : 1)

6.9 Proposed Levels of Service

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

Table 37 outlines the proposed LOS scenarios that were analyzed for bridges and culverts. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 37 Proposed LOS: Bridges & Culverts

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Bridges	60%	65%	70%	-	+5% Condition
	$124,816	$124,816	$124,816	$124,816	
Guiderails	60%	65%	70%	-	Maintain
	$22,393	$22,393	$22,393	$22,393	
Minor Culverts	35%	40%	45%	-	Maintain
	$54,244	$62,097	$69,006	$77,412	
Structural Culverts	60%	65%	70%	-	Maintain
	$53,263	$53,263	$53,263	$53,263	
TOTAL	**$254,715**	**$262,568**	**$269,478**	**$277,884**	**$262,568**

7 Stormwater Network

The Township's stormwater network has a current replacement cost of $13.1 million.

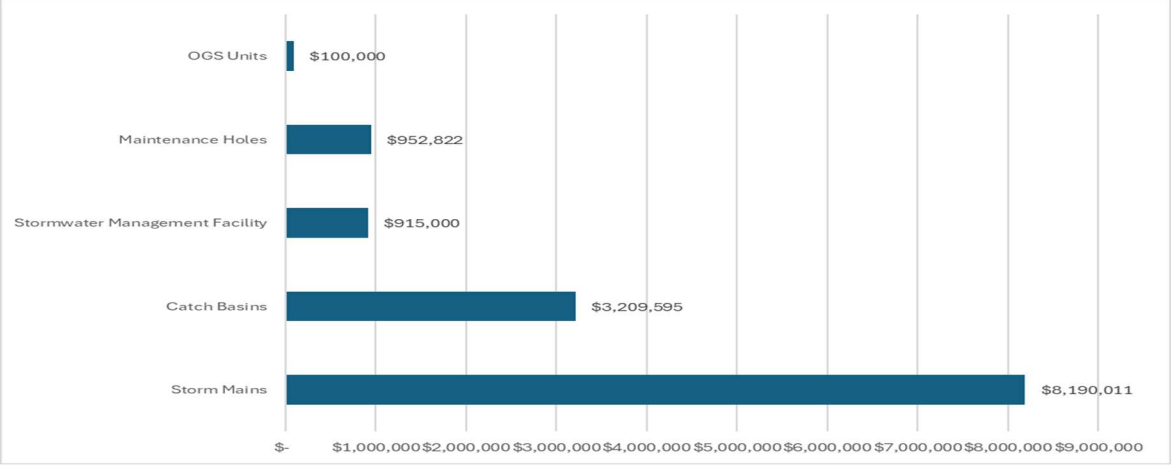
7.1 Inventory & Valuation

Table 38 summarizes the quantity and current replacement cost of stormwater network assets.

Table 38 Detailed Asset Inventory: Stormwater Network

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR[17]
Catch Basins	1,214	Assets	$3,209,595	User-Defined	$43,000
Maintenance Holes	209	Assets	$952,822	User-Defined	$11,000
OGS Units	3	Assets	$100,000	User-Defined	$1,000
Storm Mains	22	KM	$8,190,011	User-Defined	$105,000
Stormwater Management Facility	7	Assets	$915,000	User-Defined	$61,000
TOTAL			**$13,367,428**		**$221,000**

[17] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.



7.2 Asset Condition

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

- Staff primarily rely on the age and material of storm mains to determine the projected condition of underground assets.
- There are no formal condition assessment programs in place for the water network. Visual assessments are conducted on a regular basis and defects are noted.

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

Table 39 Condition Ranges: Stormwater Network

Condition Ranges	Description
Very Good (80% – 100%)	♦ New or well-maintained system, with all components functioning optimally. ♦ No flooding, pooling, or capacity concerns, even during heavy rainfall. ♦ Pipes, culverts, and catch basins are clear of debris and in excellent condition.

Condition Ranges	Description
	♦ Stable drainage channels and outfalls with no erosion or infrastructure risks. ♦ Minimal maintenance required beyond routine inspections and cleaning.
Good (60% – 80%)	♦ Effective drainage with minimal pooling or slow runoff after storms. ♦ Infrastructure is in good shape, with only minor signs of wear such as light corrosion or small cracks. ♦ Minimal sediment buildup and blockages, with regular maintenance keeping the system functional. ♦ Stable outfalls and drainage channels, with little erosion or scouring. ♦ Routine maintenance and minor repairs ensure continued performance.
Fair (40% – 60%)	♦ Occasional drainage issues, such as slow runoff or minor standing water after storms. ♦ Pipes and structures show signs of wear, but no immediate structural concerns. ♦ Moderate sediment accumulation in stormwater ponds, ditches, or pipes. ♦ Some erosion and minor infrastructure damage that require monitoring. ♦ Regular maintenance and future planning needed to prevent further decline.
Poor (20% – 40%)	♦ Regular flooding or ponding in low-lying areas, especially during heavy rainfall. ♦ Aging pipes, culverts, and drains with visible corrosion, cracks, or joint failures.

Condition Ranges	Description
	♦ Moderate blockages from debris, sediment, or root intrusion, requiring frequent maintenance. ♦ Erosion and scouring present near outfalls and channels, threatening infrastructure stability. ♦ System requires significant repairs or partial replacements to improve function.
Very Poor (0% – 20%)	♦ Frequent and severe flooding due to major blockages, collapsed pipes, or inadequate capacity. ♦ Severely damaged or failing infrastructure, including cracked or collapsed culverts, pipes, and catch basins. ♦ Significant sediment buildup, erosion, or vegetation overgrowth, reducing flow efficiency. ♦ High risk of property damage and environmental contamination due to untreated runoff. ♦ Requires immediate emergency repairs or full system replacement.

Figure 35 summarizes the replacement cost-weighted condition of the Township's stormwater network. Based primarily on age-based condition, 87% of stormwater network assets are in fair or better condition. Some elements or components of these structures may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition. The remaining 13% are currently in poor or lower condition. Assets components reaching this condition rating in the future may require replacement in the immediate or short term.

Figure 35 Asset Condition: Stormwater Network

Condition is further detailed in Table 40.

Table 40 Asset Condition: Stormwater Network by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[18]
Catch Basins	$67,500	2%	$3,142,096	98%	Good (67%)
Maintenance Holes	$32,500	3%	$920,322	97%	Good (71%)
OGS Units		0%	$100,000	100%	Very Good (81%)
Storm Mains	$1,347,935	16%	$6,842,076	84%	Fair (58%)
Stormwater Management Facility	$250,000	27%	$665,000	73%	Fair (47%)
TOTAL	**$1,697,935**	**13%**	**$11,669,494**	**87%**	**Good (67%)**

[18] Weighted by replacement cost.

7.3 Age Profile

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

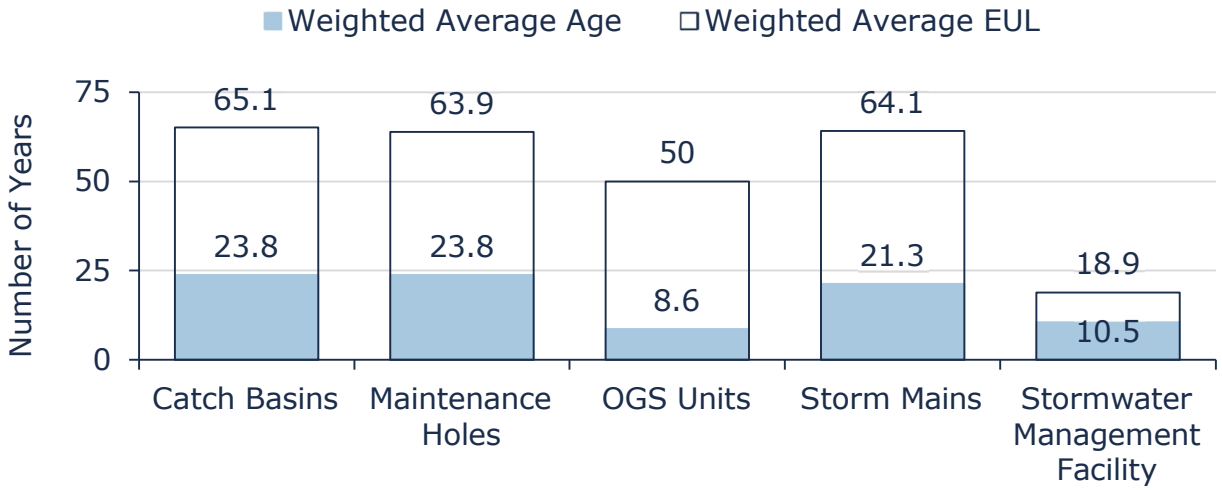
In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning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

Table 41 summarizes and Figure 36 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 41 Detailed Asset Age: Stormwater Network

Segment	Weighted Average EUL	Weighted Average Age
Catch Basins	65.1	23.8
Maintenance Holes	63.9	23.8
OGS Units	50.0	8.6
Storm Mains	64.1	21.3
Stormwater Management Facility	18.9	10.5

Figure 36 Estimated Useful Life vs. Asset Age: Stormwater Network



Age analysis reveals that on average, all segments are in the earlier stages of their design life except for the stormwater management facility, which is slight past the midway point.

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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type

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

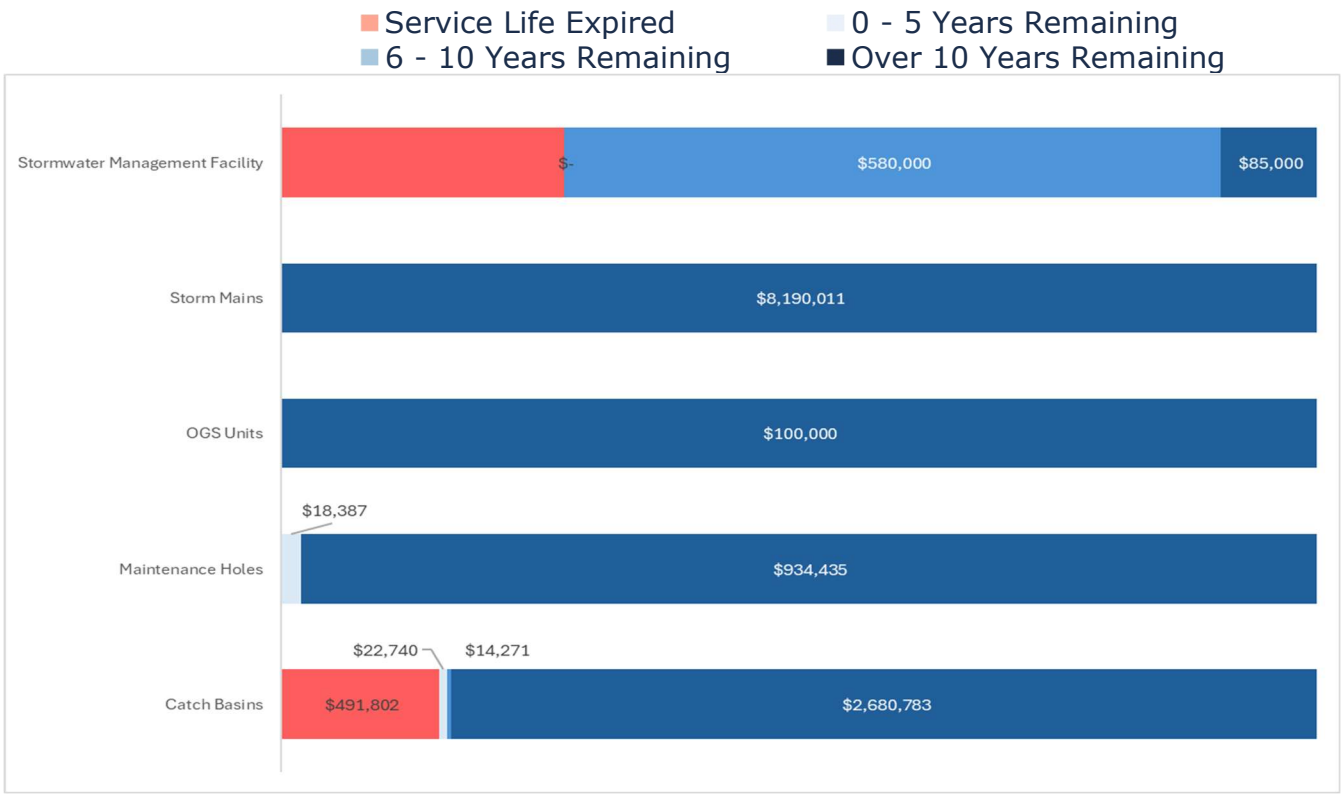
7.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 6% of assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 42 Service Life Remaining: Stormwater Network

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
Catch Basins	$492k	$23k	$14k	$2.7m
Maintenance Holes	-	$18k	-	$934k
OGS Units	-	-	-	$100k
Storm Mains	-	-	-	$8.2m
Stormwater Management Facility	$250k	-	$580k	$85k
TOTAL	**$742**	**$41k**	**$594k**	**$12.0m**

Figure 37 Service Life Remaining: Stormwater Network



7.5 Current Approach to Lifecycle Management

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

The following table outlines the Township's current lifecycle management strategy for stormwater network assets.

Table 43 Lifecycle Management Strategy: Stormwater Network

Activity Type	Description of Current Strategy
Maintenance	Inspections are performed on municipal drains, but storm mains are not included within this process.
	During the road patrol process culverts are inspected to identify any signs of settlement or washout.
	Catch basins in the roadway are cleaned once per year by a hired contractor. Significant deficiencies are noted but no formal report is completed for each catch basin.
Rehabilitation / Replacement	Stormwater mains and catch basins are typically replaced/reconstructed at end-of-life and/or in coordination with other asset replacements (roads).

7.6 Forecasted Long-Term Replacement Needs

Replacement requirements and analysis for the Township's stormwater network was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and register.

The Township's average annual requirements for the stormwater network total $221,000. 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.

Major spikes occur in the 2050-2054 and 2060-2064 sections. 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.

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

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

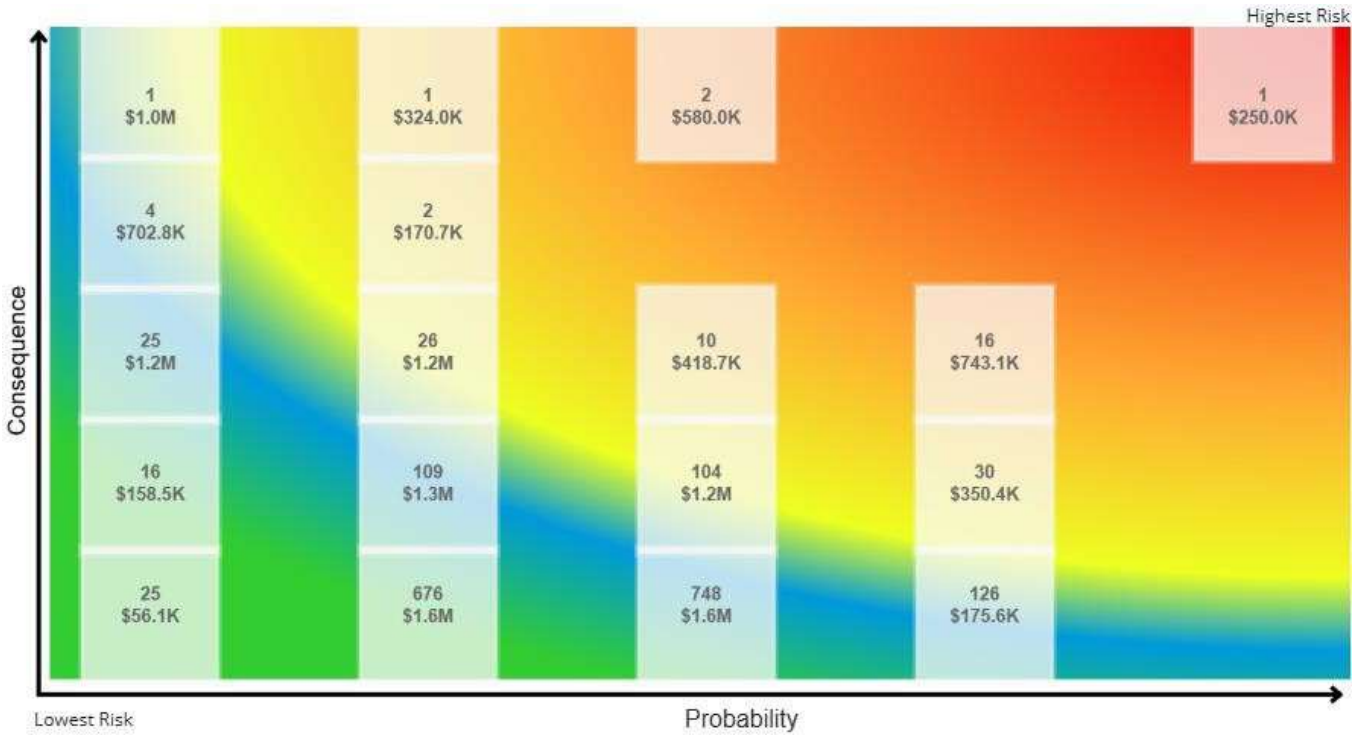
7.7 Risk Analysis

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

7.7.1 Quantitative Risk

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

Figure 39 Risk Matrix: Stormwater Network



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

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

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

Figure 40 Risk Rating Ranges: Stormwater Network

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$6,103,782	$3,634,559	$1,475,137	$1,323,951	$830,000
(46%)	(27%)	(11%)	(10%)	(6%)

Table 44 Probability of Failure, Consequence of Failure, Risk Ratings: Stormwater Network by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Catch Basins	2.66 / 5	1.06 / 5	2.81 / 25
Maitenance Holes	2.37 / 5	1.19 / 5	2.78 / 25
OGS Units	1.67 / 5	2.67 / 5	4.33 / 25
Storm Mains	2.82 / 5	1.59 / 5	4.35 / 25
Stormwater Management Facility	3.00 / 5	3.43 / 5	11.0 / 25
TOTAL	**2.68 / 5**	**1.24 / 5**	**3.28 / 25**

Overall, the average risk rating for stormwater network is 3.28, which is considered Low.

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

7.7.2 Qualitative Risk

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

Climate Change & Extreme Weather Events

Climate change and the increase in rainfall intensity pose significant risks to a stormwater network within the Township. The drainage

capacity may be challenged, as future stormwater runoff may increase beyond the previously designed resiliency. If the capacity is exceeded, it can result in culvert failure, road washouts, erosion, and flood damages. Proactive maintenance and replacement of the stormwater system, in addition upgrades in problem areas, will reduce the risk of damages due to climate change and increased rainfall intensity.

Changing Regulations

Changing regulations, including updates to design standards and assessment certification programs are considered a risk within the stormwater network. These changes may impact personnel qualifications and introduce new requirements that challenge existing infrastructure practices which can lead to potential compliance and adaptation issues for the Township.

7.8 Current Levels of Service

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

7.8.1 Community Levels of Service

Table 45 O. Reg. 588/17 Community Levels of Service: Stormwater Network

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include map, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater system.	See Appendix C.

Service Attribute	Qualitative Description	Current LOS (2023)
Affordable	Stormwater services are affordable and managed at the lowest possible cost for expected level of service.	The Township regularly inspects their municipal drains, and during road patrols culverts are inspected for settlement and washout issues. Annually, roadway catch basins are cleaned by an external contractor.
Sustainability	Stormwater assets are used efficiently, and long-term plans are in place for the sustainability of stormwater services infrastructure.	The average current of the stormwater network as of the data effective date is good (65%). The condition of some stormwater segments is better or worse than others; for example, the OGS unit segment has an average condition of very good (84%) whereas the stormwater management facility has an average condition of poor (37%).

7.8.2 Technical Levels of Service

Table 46 O. Reg. 588/17 Technical Levels of Service: Stormwater Network

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of properties in municipality resilient to a 100-year storm	TBD
	% of the municipal stormwater management system resilient to a 5-year storm	89%[19]
	% of urban catch basins and maintenance holes cleaned annually	90%

[19] This figure assumes that storm mains constructed after 2008 are designed based on 5-year storm for local sewers and 10-year storm event for trunk sewers based on the Tavistock Master Storm System Drainage Plan. It also assumes that 39% of the storm mains constructed prior to 2008 are designed to a 5-year storm. This figure is an estimate based on the best available information available to the Township as of this report. This figure therefore may change as more accurate information becomes available.

Service Attribute	Technical Metric	Current LOS (2023)
Affordable	O&M cost per household	$10.64
Quality	Average condition of stormwater network assets in the Township	Good (65%)
Performance	% of assets in fair or better condition	88%
	% of assets in poor or lower condition	12%
	Actual annual capital budget : average required annual capital requirements	$199,000 : $221,000 (0.90 : 1)

7.9 Proposed Levels of Service

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

Table 47 outlines the proposed LOS scenarios that were analyzed for the stormwater network. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 47 Proposed LOS: Stormwater Network

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
Catch Basins	$43,147	$43,147	$43,147	$64,607	Maintain
Maintenance Holes	$10,203	$11,258	$12,423	$14,214	Maintain
OGS Units	$1,176	$1,176	$1,176	$1,733	Maintain

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
Storm Mains	$94,310	$104,517	$113,649	$129,912	Maintain
Stormwater Management Facility	$60,970	$61,034	$61,034	$61,034	Maintain
TOTAL	**$209,807**	**$221,132**	**$231,429**	**$271,501**	**$221,132**

Category Analysis: Non-Core Assets

8 Buildings

The total current replacement of buildings is $35.6 million.

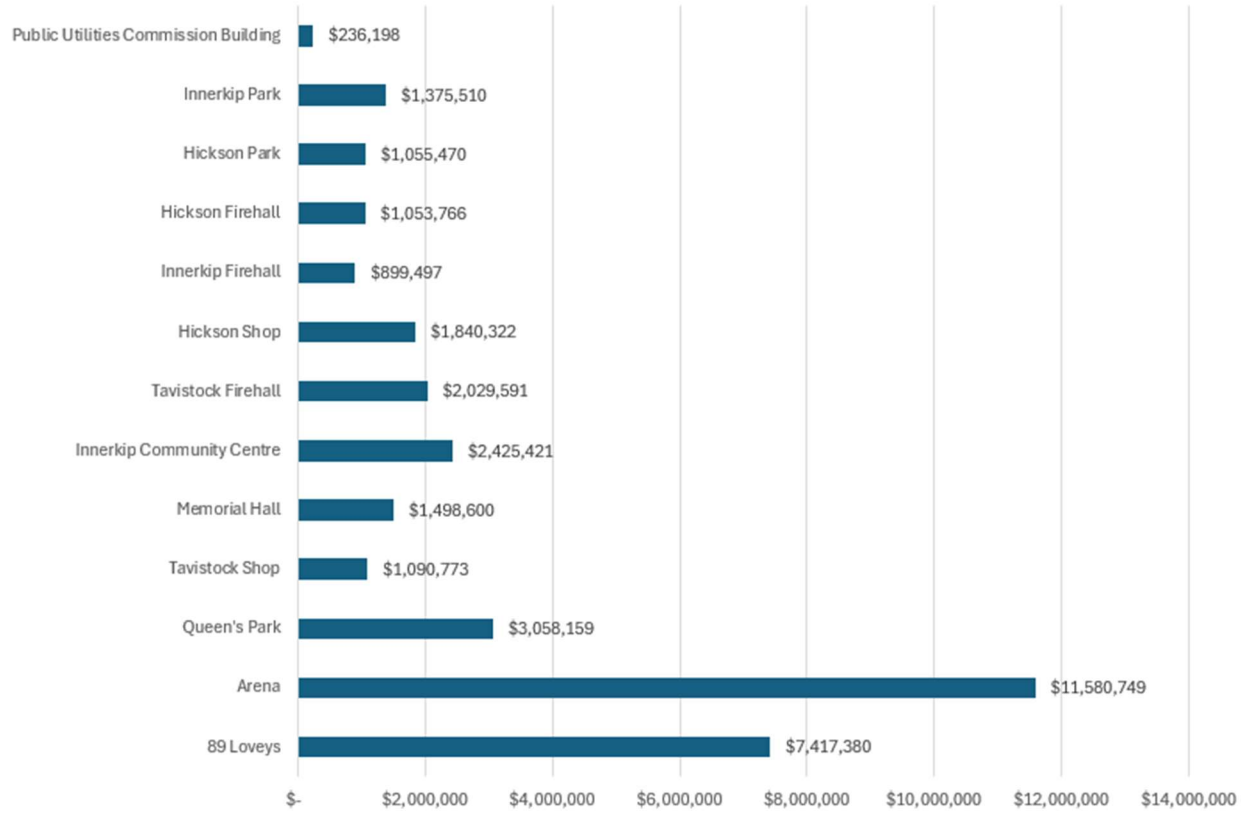
8.1 Inventory & Valuation

Table 48 summarizes the quantity and current replacement cost of all buildings assets available in the Township's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR[20]
89 Loveys	30	Components	$7,417,380	User-Defined	$187,000
Arena	413	Components	$11,580,749	Cost per Unit	$137,000
Hickson Firehall	82	Components	$1,053,766	$300,000	$10,000
Hickson Park	105	Components	$1,055,470	Cost per Unit	$10,000
Hickson Shop	95	Components	$1,840,322	User-Defined	$31,000
Innerkip Community Centre	81	Components	$2,425,421	Cost per Unit	$19,000
Innerkip Firehall	81	Components	$899,497	Cost per Unit	$8,000
Innerkip Park	130	Components	$1,375,510	Cost per Unit	$8,000
Memorial Hall	99	Components	$1,498,600	Cost per Unit	$22,000
Public Utilities Commission Building	59	Components	$236,198	Cost per Unit	$8,000
Queen's Park	116	Components	$3,058,159	Cost per Unit	$22,000
Tavistock Firehall	102	Components	$2,029,591	Cost per Unit	$14,000
Tavistock Shop	59	Components	$1,090,773	Cost per Unit	$11,000
Total			**$35,561,437**		**$487,000**

[20] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Figure 41 Portfolio Valuation: Buildings



8.2 Asset Condition

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets more confidently.

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

Table 49 Condition Ranges: Buildings

Condition Ranges	Description
Very Good (80% – 100%)	♦ Newly built or recently renovated with no visible defects.

Condition Ranges	Description
	♦ Modern, efficient, and fully functional mechanical, electrical, and plumbing systems. ♦ Well-maintained structural elements, finishes, and overall aesthetic. ♦ Minimal maintenance required beyond routine inspections and minor upkeep.
Good (60% – 80%)	♦ Structurally sound with no major defects; minor wear and tear on finishes. ♦ Functional and well-maintained mechanical, electrical, and plumbing systems. ♦ Up-to-date aesthetics, with only minor improvements needed for modernization. ♦ Requires only regular maintenance to keep in good condition.
Fair (40% – 60%)	♦ Some visible signs of aging, such as minor wall cracks, roof wear, or uneven flooring. ♦ Mechanical, electrical, and plumbing systems function but may require repairs or efficiency upgrades. ♦ Cosmetic issues like faded paint, worn flooring, or outdated interior elements. ♦ Routine maintenance and moderate renovations can extend the building's service life.
Poor (20% – 40%)	♦ Noticeable structural issues, such as sagging floors, cracked walls, or roof leaks. ♦ Frequent repairs needed for electrical, plumbing, or HVAC systems due to aging components. ♦ Significant cosmetic wear, including peeling paint, damaged finishes, and outdated fixtures.

Condition Ranges	Description
	♦ Requires major repairs or system upgrades to maintain functionality.
Very Poor (0% – 20%)	♦ Severe structural deterioration, with major foundation issues, roof failures, or extensive wall cracking. ♦ Significant water damage, mold growth, or rot affecting habitability. ♦ Outdated or failing mechanical, electrical, and plumbing (MEP) systems, posing safety risks. ♦ Building is unsafe for occupancy without extensive rehabilitation or potential demolition.

As illustrated in Figure 42 below, the majority of the Township's buildings are in fair or better condition.

Table 50 summarizes the replacement cost-weighted condition of the Township's buildings portfolio. Based on both assessed and age-based condition data, 96% of buildings are in fair or better condition, with the remaining 4% in poor or lower condition.

Condition data was available for 47% of buildings, based on replacement costs; age was used to estimate condition for the remaining 53% of assets.

Figure 42 Asset Condition: Buildings

Table 50 Asset Condition: Buildings by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[21]
89 Loveys	$832,667	11%	$6,584,713	89%	Good (71%)
Arena	$46,361	0%	$11,534,389	100%	Good (71%)
Hickson Firehall	$8,340	1%	$1,045,426	99%	Good (72%)
Hickson Park	$390	0%	$1,055,080	100%	Good (75%)
Hickson Shop	$75,828	4%	$1,764,494	96%	Good (75%)
Innerkip Community Centre	$3,708	0%	$2,421,713	100%	Fair (57%)
Innerkip Firehall	$520	0%	$898,977	100%	Good (74%)
Innerkip Park	$203,379	15%	$1,172,131	85%	Good (73%)
Memorial Hall	$1,200	0%	$1,497,400	100%	Good (62%)
Public Utilities Commision Building	$130	0%	$236,068	100%	Good (68%)
Queen's Park	$3,607	0%	$3,054,552	100%	Good (72%)
Tavistock Firehall	$780	0%	$2,028,811	100%	Good (77%)
Tavistock Shop	$390	0%	$1,090,383	100%	Good (76%)
TOTAL	**$1,177,300**	**3%**	**$34,384,137**	**97%**	**Good (71%)**

[21] Weighted by replacement cost.

8.3 Age Profile

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

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

Table 51 summarizes and Figure 43 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

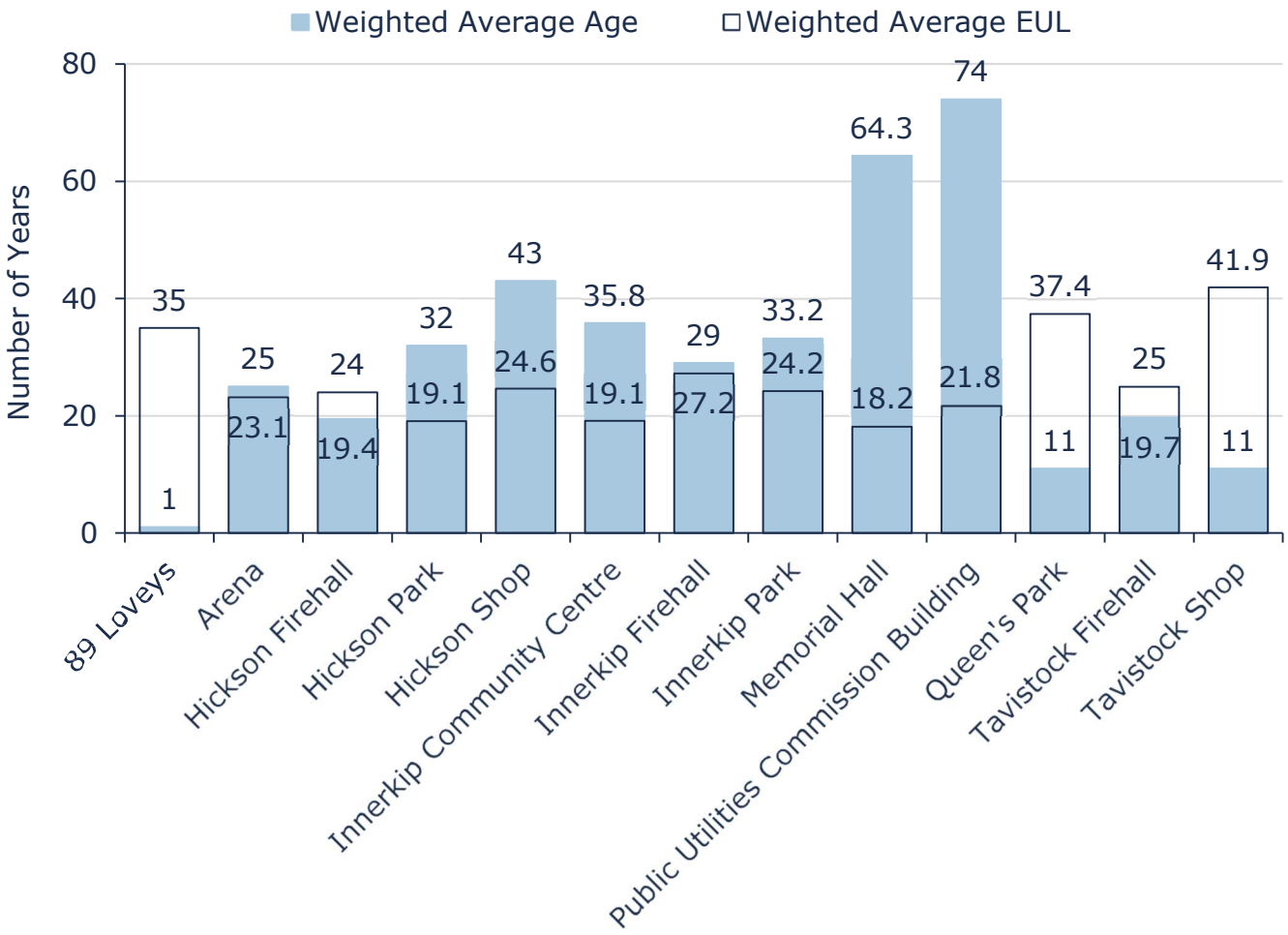
Table 51 Detailed Asset Age: Buildings

Segment	Weighted Average EUL	Weighted Average Age
89 Loveys	35.0	1.0
Arena	23.1	25.0
Hickson Firehall	24.0	19.4
Hickson Park	19.1	32.0
Hickson Shop	24.6	43.0
Innerkip Community Centre	19.1	35.8
Innerkip Firehall	27.2	29.0
Innerkip Park	24.2	33.2
Memorial Hall	18.2	64.3
Public Utilities Commission Building	21.8	74.0
Queen's Park	37.4	11.0
Tavistock Firehall	25.0	19.7
Tavistock Shop	41.9	11.0

Age analysis reveals that, on average, buildings assets are in the early to mid-stages of their serviceable life. It is important to note that meaningful and accurate age analysis of building assets relies heavily on effective componentization. Buildings are complex structures made up of many parts (e.g., roofs, HVAC systems, windows, and foundations), each with its own expected lifespan and maintenance needs. While the weighted average EUL and age in Table 51 and Figure 43 have summarized these components into a single line item for each

facility, each component does have its own specific EUL and age within the Township's asset register.

Figure 43 Estimated Useful Life vs. Asset Age: Buildings



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

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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

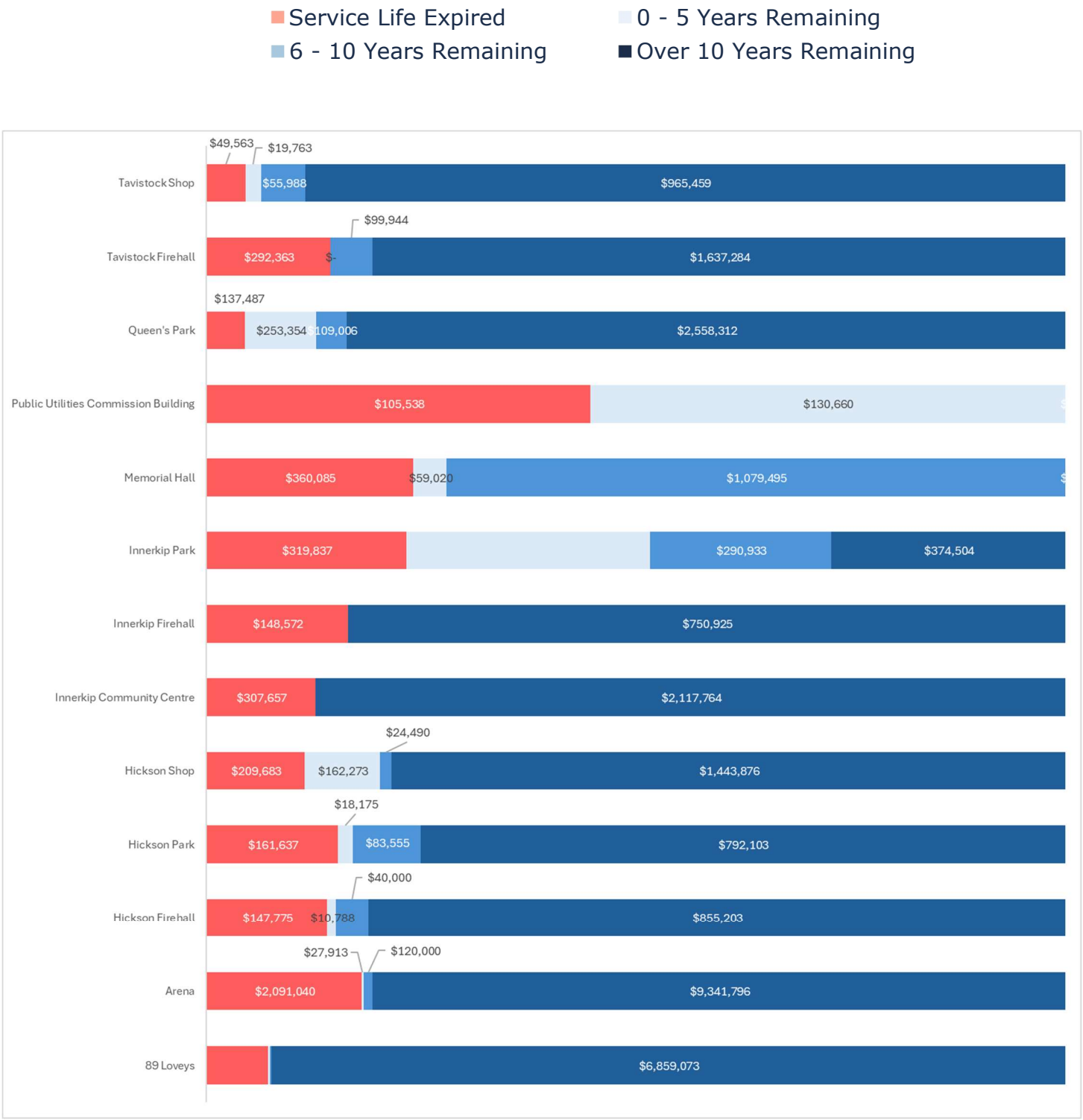
8.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 9% of assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 52 Service Life Remaining: Buildings

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
89 Loveys	$533k	$16k	$10k	$6.9m
Arena	$2.1m	$28k	$120k	$9.3m
Hickson Firehall	$148k	$11k	$40k	$855k
Hickson Park	$162k	$18k	$84k	$792k
Hickson Shop	$210k	$162k	$24k	$1.4m
Innerkip Community Centre	$308k	-	-	$2.1m
Innerkip Firehall	$149k	-	-	$751k
Innerkip Park	$320k	$390k	$291k	$375k
Memorial Hall	$360k	$59k	$1.1m	-
Public Utilities Commission Building	$106k	$131k	-	-
Queen's Park	$137k	$253k	$109k	$2.6m
Tavistock Firehall	$292k	-	$100k	$1.6m
Tavistock Shop	$50k	$20k	-	$965k

Figure 44 Service Life Remaining: Buildings



8.5 Current Approach to Lifecycle Management

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

Table 53 outlines the Township's current lifecycle management strategy for buildings assets.

Table 53 Lifecycle Management Strategy: Buildings

Activity Type	Description of Current Strategy
Maintenance & Inspections	Health and safety inspections are completed for all buildings monthly.
	External inspections for buildings are not in place, but they are being considered for the future budget year. Factors such as energy consumption will be measured within the assessment.
	The Township is currently developing the building condition assessment process but are utilizing the inventory and condition assessments conducted by internal staff in the interim.
	In-house staff completes minor maintenance tasks while relying on contractors for more extensive work. Currently, maintenance activities are completed on in as-needed basis and are reactive in nature. The Township aims to transition from a predominantly reactive approach to a proactive lifecycle strategy for building management.
Rehabilitation / Replacement	The Township is currently facing a backlog of building rehabilitation and replacement projects. Backlog activities are being prioritized and addressed systematically, reducing the list of pending projects over time.
	Rehabilitation and replacement activities are completed on in as-needed basis and are reactive in nature. The Township aims to

Activity Type	Description of Current Strategy
	work towards a proactive lifecycle strategy for building management.

8.6 Forecasted Long-Term Replacement Needs

Replacement requirements and analysis for the Township's buildings portfolio was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements total $483,000 for all buildings. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Forecasted requirements align with the selected proposed levels of service. While there are relatively minor capital requirements over the next five years, the following 5-year segments range from $1.8 million to $3.7 million. 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.

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

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

8.7 Risk Analysis

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

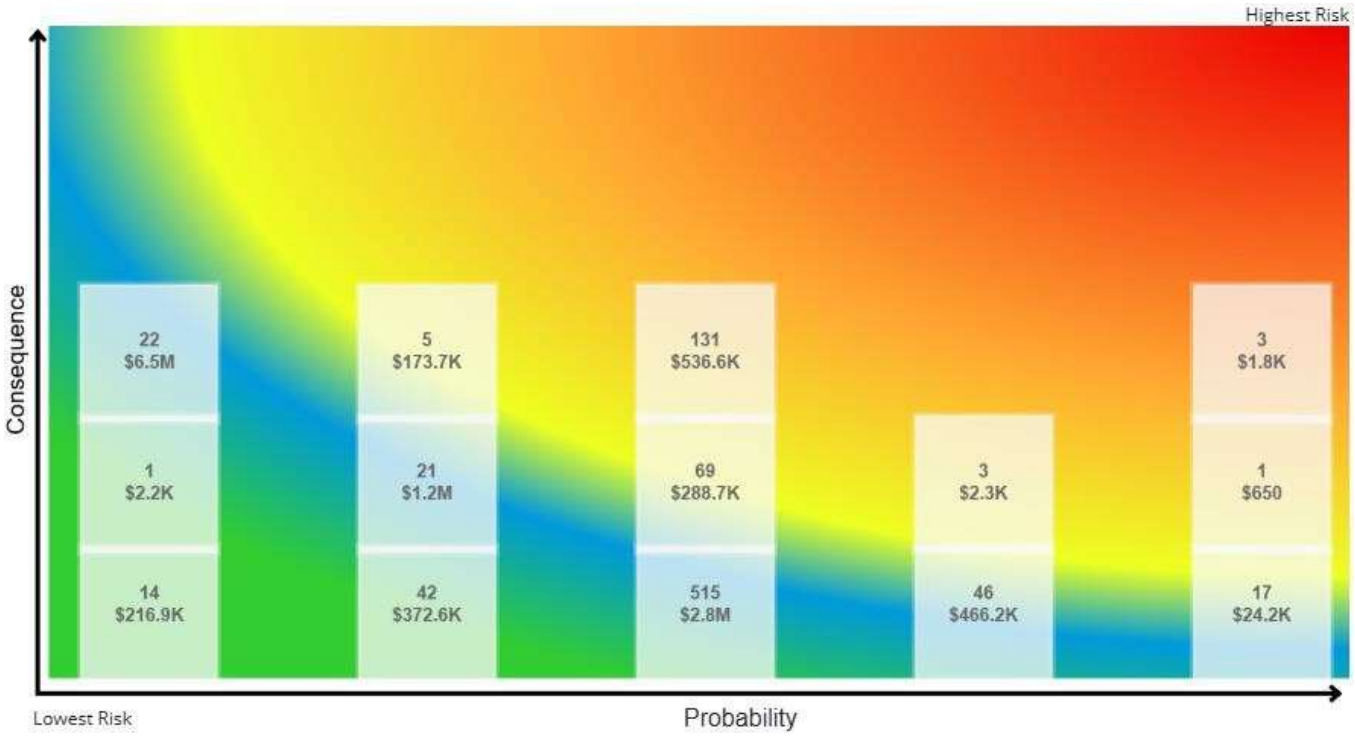
8.7.1 Quantitative Risk

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

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

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

Figure 46 Risk Matrix: Buildings



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

Figure 47 Risk Rating Ranges: Buildings

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$18,106,792	$5,609,998	$10,691,634	$985,882	$167,129
(51%)	(16%)	(30%)	(3%)	(<1%)

Table 54 Probability of Failure, Consequence of Failure, Risk Ratings: Buildings by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
89 Loveys	2.16 / 5	2.61 / 5	4.99 / 25
Arena	3.75 / 5	1.02 / 5	3.78 / 25
Hickson Firehall	3.82 / 5	3.86 / 5	14.76 / 25
Hickson Park	2.95 / 5	1.01 / 5	2.97 / 25
Hickson Shop	3.48 / 5	2.44 / 5	8.47 / 25
Innerkip Community Centre	4.04 / 5	1.02 / 5	4.08 / 25
Innerkip Firehall	3.54 / 5	3.86 / 5	13.65 / 25
Innerkip Park	3.29 / 5	1.01 / 5	3.31 / 25
Memorial Hall	3.91 / 5	1.02 / 5	3.97 / 25
Public Utilities Commission Building	3.75 / 5	1.0 / 5	3.75 / 25
Queen's Park	2.94 / 5	1.03 / 5	2.99 / 25
Tavistock Firehall	3.69 / 5	3.86 / 5	14.25 / 25
Tavistock shop	3.15 / 5	2.44 / 5	7.67 / 25
TOTAL	**3.52 / 5**	**1.72 / 5**	**6.04 / 25**

Overall, the average risk rating for buildings assets is 6.04, which is considered Low.

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

8.7.2 Qualitative Risk

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

Demographic Change & Community Expectations

East Zorra-Tavistock continues to experience steady growth, supported by its close proximity to urban centers such as London, Hamilton, and the Guelph-Kitchener-Waterloo region. As new residents arrive—many from larger municipalities—they may bring with them different expectations regarding service levels and availability. To support this evolving community, the Township is exploring ways to align its facilities and services with emerging needs. Proactive maintenance, timely renewal, and targeted upgrades will help ensure that Township facilities remain responsive, resilient, and well-positioned to serve both current and future residents.

Aging Infrastructure

As Township buildings continue to age, there is a growing need to address the associated maintenance and renewal requirements. Like many municipalities, the Township is managing an increasing backlog of projects, which can present challenges in keeping up with repairs and upgrades. Without timely investment, aging infrastructure may face higher maintenance costs and a greater risk of service disruption over time. By taking a proactive approach—through regular condition assessments, strategic planning, and financial forecasting—the Township can continue to make informed decisions that support the safe, sustainable, and cost-effective rehabilitation of its building assets.

Organizational Change and Capacity

Like many municipalities, the Township is navigating some capacity constraints that can affect building management activities such as condition assessments and long-term planning. While internal expertise continues to grow, there are areas—particularly in specialized building assessments and lifecycle forecasting—where additional support could help enhance efficiency and ensure timely maintenance. Exploring opportunities for staff training and, where needed, bringing in external expertise are potential ways to strengthen the Township's ability to plan for and manage its building assets sustainably and safely.

8.8 Current Levels of Service

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

8.8.1 Community Levels of Service

Table 55 Community Levels of Service: Buildings

Service Attribute	Qualitative Description	Current LOS (2023)
Quality	Buildings are managed cost-effectively to meet the established levels of service	Description of cost saving initiatives in place by the Township: TBD
Safe & Regulatory	Buildings are safe for occupants and do not cause a hazard to the public	On a monthly basis, all facilities are inspected for health and safety. Informally, buildings are inspected by staff during their day-to-day building operation activities.
Sustainable	There are long-term plans in place for the renewal and replacement of facilities assets	Rehabilitation and replacement activities are completed on in as-needed basis and are reactive in nature. The Township aims to work towards a proactive lifecycle strategy for building management.

8.8.2 Technical Levels of Service

Table 56 Technical Levels of Service: Buildings

Service Attribute	Technical Metric	Current LOS (2023)
Quality	O&M cost / # of buildings	$18,463
Safe & Regulatory	Frequency of building inspections by facility	12
Performance	Average condition of buildings assets in the Township	Very Good (82%)
	% of buildings that are in fair or better condition	96%
	% of buildings that are in poor or lower condition	4%
	Actual annual capital budget : average required annual capital requirements	$521,000 : $483,000 (1.08 : 1)

8.9 Proposed Levels of Service

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

Table 57 outlines the proposed LOS scenarios that were analyzed for buildings. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 57 Proposed LOS: Buildings

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
89 Loveys	$186,808	$186,808	$196,676	$264,737	Maintain
Arena	$128,844	$134,856	$137,391	$140,785	+5% Condition
Hickson Firehall	$9,380	$9,420	$9,661	$10,351	+5% Condition
Hickson Park	$9,254	$9,381	$9,503	$10,817	Maintain
Hickson Shop	$25,597	$28,688	$31,217	$34,298	+5% Condition
Innerkip Community Centre	$17,438	$18,191	$18,610	$19,505	+5% Condition
Innerkip Firehall	$8,094	$8,374	$8,374	$9,493	Maintain
Innerkip Park	$7,845	$8,101	$8,176	$9,071	Maintain
Memorial Hall	$20,564	$21,170	$21,900	$22,438	+5% Condition
Public Utilities Commission Building	$4,560	$4,562	$4,562	$5,352	Maintain
Queen's Park	$20,410	$22,420	$23,752	$26,375	Maintain
Tavistock Firehall	$13,494	$13,596	$13,596	$15,281	Maintain

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
Tavistock Shop	$10,363	$10,688	$11,447	$13,174	Maintain
TOTAL	**$462,652**	**$476,255**	**$494,865**	**$581,675**	**$482,709**

9 Land Improvements

The Township's land improvements portfolio has a total current replacement cost of $1.3 million.

9.1 Inventory & Valuation

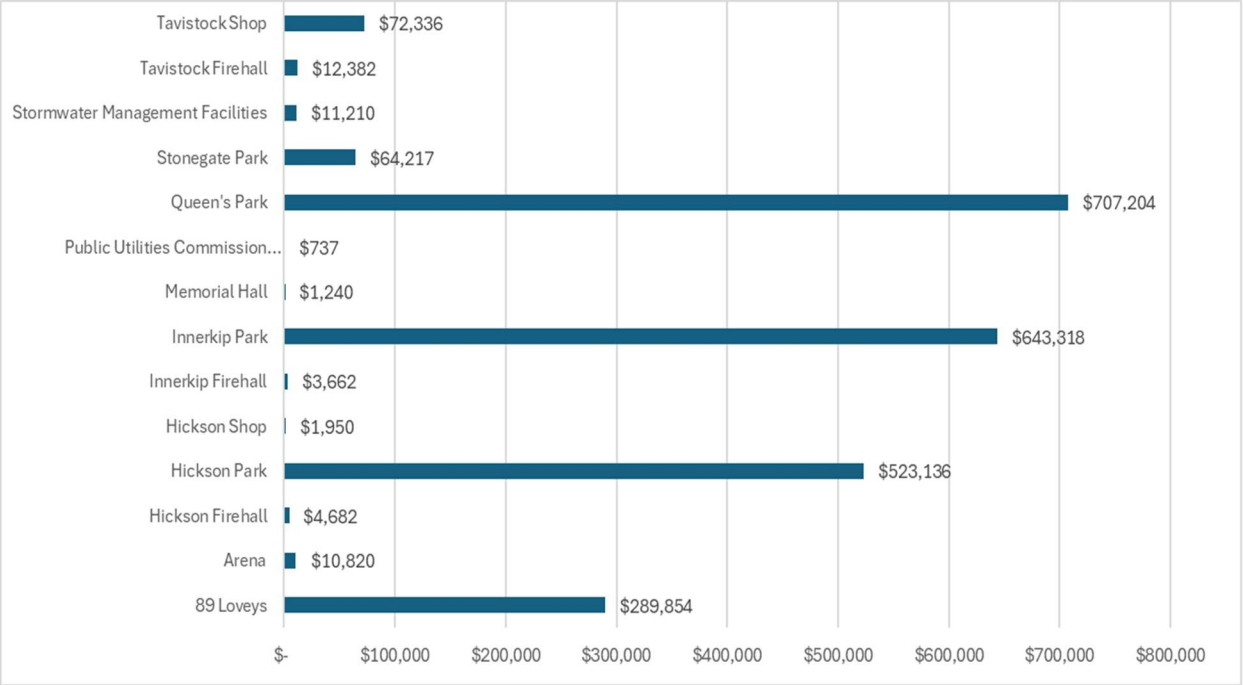
Table 58 summarizes the quantity and current replacement cost of all land improvements assets available in the Township's asset register.

Table 58 Detailed Asset Inventory: Land Improvements

Segment	Quantity	Unit of Measure	Replacement Cost (RC)	Primary RC Method	AAR[22]
89 Loveys	3	Assets	$289,854	User-Defined	$10,000
Arena	39	Assets	$10,820	User-Defined	$1,000
Hickson Firehall	20	Assets	$4,682	Cost per Unit	$0
Hickson Park	125	Assets	$523,136	Cost per Unit	$13,000
Hickson Shop	6	Assets	$1,950	Cost per Unit	$0
Innerkip Firehall	21	Assets	$3,662	Cost per Unit	$0
Innerkip Park	135	Assets	$643,318	Cost per Unit	$19,000
Memorial Hall	10	Assets	$1,240	User-Defined	$0
Public Utilities Commission Building	108	M^2	$737	User-Defined	$0
Queen's Park	141	Assets	$707,204	User-Defined	$37,000
Stonegate Park	95	Assets	$64,217	Cost per Unit	$3,000
Stormwater Management Facility	2	Assets	$11,210	User-Defined	$0
Tavistock Firehall	32	Assets	$12,382	User-Defined	$1,000
Tavistock Shop	7	Assets	$72,336	Cost per Unit	$3,000
Total			**$2,346,749**		**$87,000**

[22] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Figure 48 Portfolio Valuation: Land Improvements



9.2 Asset Condition

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets more confidently.

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

Table 59 Condition Ranges: Land Improvements

Condition Ranges	Description
Very Good (80% – 100%)	♦ The asset is new, recently rehabilitated, or very well maintained. ♦ It functions as intended with no significant signs of deterioration. ♦ No immediate maintenance or repair needs are present. ♦ Examples: A newly installed playground, freshly resurfaced trail, or pristine fencing and landscaping in a public park.
Good (60% – 80%)	♦ The asset is in overall good condition, showing minor wear from regular use. ♦ It is fully operational and meets community expectations for use, safety, and appearance. ♦ Only routine or preventative maintenance is needed. ♦ Examples: A well-maintained sports field, a dock with slight wear on surface materials, or a parking lot with minor surface cracking.
Fair (40% – 60%)	♦ The asset is functional but aging, with noticeable wear and some minor safety or usability concerns. ♦ It meets basic performance standards but may require minor repairs or surface improvements to avoid accelerated decline. ♦ Examples: A trail with minor erosion, faded playground surfacing, or a parking lot with cracked pavement and early signs of edge failure.

Condition Ranges	Description
Poor (20% – 40%)	♦ The asset has serious signs of deterioration and frequent functional issues. ♦ It may still be partially usable but fails to meet service expectations. ♦ Corrective maintenance or planning for replacement should be prioritized. ♦ Examples: A dock with unstable decking, fencing with missing sections, or sports fields with bare patches and poor drainage.
Very Poor (0% – 20%)	♦ The asset is in critical condition with extensive structural or surface deterioration. ♦ It is unsafe, unusable, or completely non-functional, posing a risk to public safety or the environment. ♦ Immediate action is required, including potential closure, major rehabilitation, or full replacement. ♦ Examples: A playground with broken equipment, a trail washed out or impassable, or a parking lot with large potholes and failing subbase.

As illustrated in Figure 49, the majority of the Township's land improvements are in fair or better condition.

Table 60 summarizes the replacement cost-weighted condition of the Township's land improvements portfolio. Using primarily assessed condition, 99% of land improvements are in fair or better condition, with the remaining 1% in poor or lower condition.

While most assets average a fair or better condition, any assets in poor or lower may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Figure 49 Asset Condition: Land Improvements by Segment

Table 60 Asset Condition: Land Improvements by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[23]
89 Loveys	$0	0%	$289,854	100%	Very Good (96%)
Arena	$0	0%	$10,820	100%	Good (62%)
Hickson Firehall	$0	0%	$4,682	100%	Good (73%)
Hickson Park	$0	0%	$523,136	100%	Good (78%)
Hickson Shop	$0	0%	$1,950	100%	Good (76%)
Innerkip Firehall	$0	0%	$3,662	100%	Good (69%)
Innerkip Park	$22,604	4%	$620,714	96%	Good (75%)
Memorial Hall	$0	0%	$1,240	100%	Good (72%)
Public Utilities Commision Building	$0	0%	$737	100%	Good (70%)
Queen's Park	$0	0%	$707,204	100%	Good (75%)
Stonegate Park	$0	0%	$64,217	100%	Good (78%)
Stormwater Management Facility	$0	0%	$11,210	100%	Very Good (91%)
Tavistock Firehall	$0	0%	$12,382	100%	Good (66%)
Tavistock Shop	$0	0%	$72,336	100%	Good (69%)
TOTAL	**$22,604**	**1%**	**$2,324,145**	**99%**	**Good (71%)**

[23] Weighted by replacement cost.

9.3 Age Profile

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

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

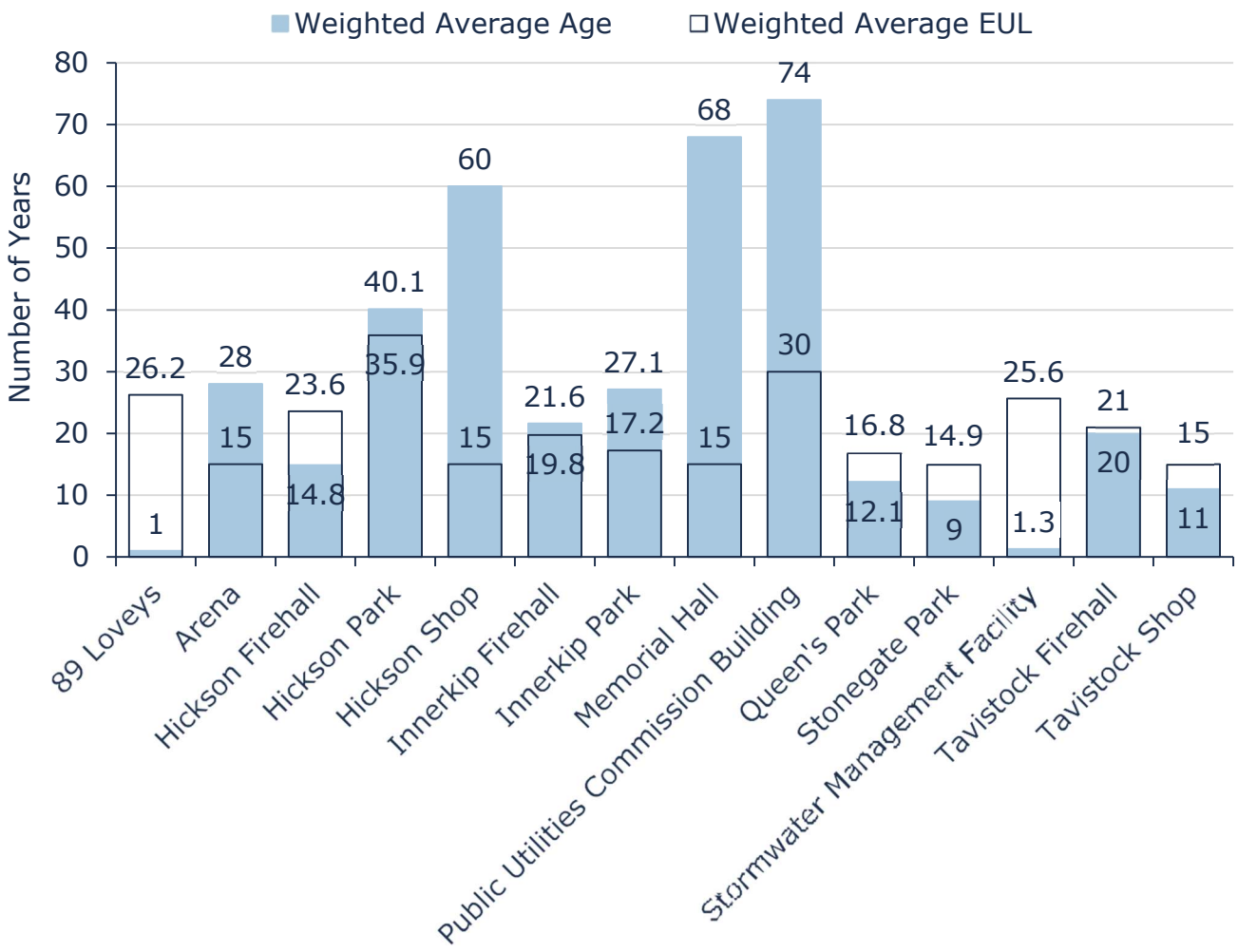
Table 61 summarizes Figure 50 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Table 61 Detailed Asset Age: Land Improvements

Segment	Weighted Average EUL	Weighted Average Age
89 Loveys	26.2	1.0
Arena	15.0	28.0
Hickson Firehall	23.6	14.8
Hickson Park	35.9	40.1
Hickson Shop	15.0	60.0
Innerkip Firehall	19.8	21.6
Innerkip Park	17.2	27.1
Memorial Hall	15.0	68.0
Public Utilities Commission Building	30.0	74.0
Queen's Park	16.8	12.1
Stonegate Park	14.9	9.0
Stormwater Management Facility	25.6	1.3
Tavistock Firehall	21.0	20.0
Tavistock Shop	15.0	11.0

Age analysis reveals that, on average, about half of the land improvements asset segments have surpassed their expected design life.

Figure 50 Estimated Useful Life vs. Asset Age: Land Improvements



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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

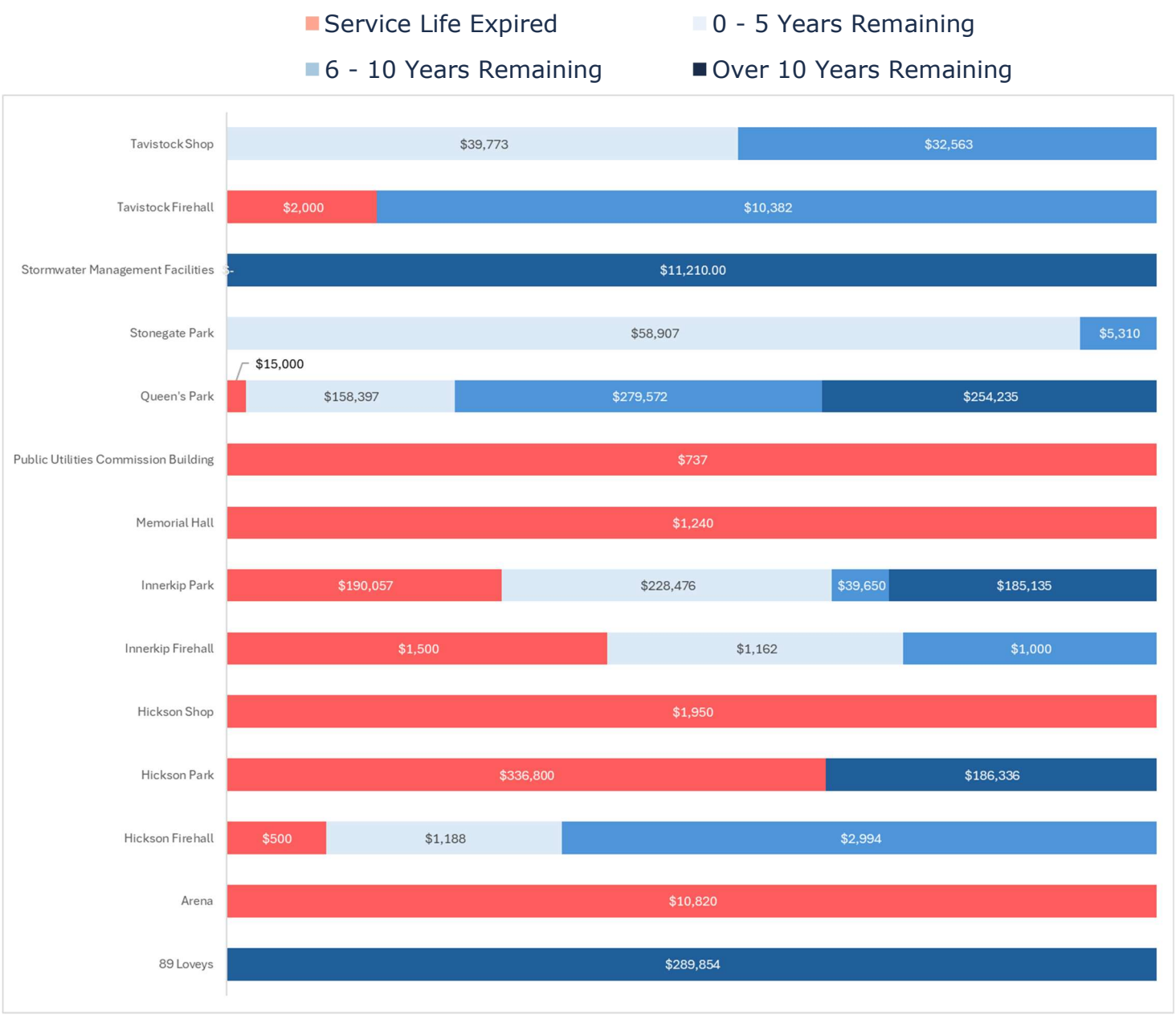
9.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 17% of assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 62 Service Life Remaining: Land Improvements

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
89 Loveys	-	-	-	$290k
Arena	$11k	-	-	-
Hickson Firehall	$0.5k	$1k	$3k	-
Hickson Park	$337k	-	-	$186k
Hickson Shop	$2k	-	-	-
Innerkip Firehall	$2k	$1k	$1k	-
Innerkip Park	$190k	$228k	$40k	$185k
Memorial Hall	$1k	-	-	-
Public Utilities Commission Building	$1k	-	-	-
Queen's Park	$15k	$158k	$280k	$254k
Stonegate Park	-	$59k	$5k	-
Stormwater Management Facilities	-	-	-	$11k
Tavistock Firehall	$2k	-	$10k	-
Tavistock Shop	$561k	$488k	$371k	$927k

Figure 51 Service Life Remaining: Land Improvements



9.5 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that the Township's land improvements assets are performing as expected and

meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

Table 63 outlines the Township's current lifecycle management strategy for land improvements assets.

Table 63 Lifecycle Management Strategy: Land Improvements

Activity Type	Description of Current Strategy
Maintenance & Inspection	Internal staff conducts playground inspections biweekly, with a more comprehensive assessment every month, ensuring regular maintenance and safety checks.
	External field inspections are completed as-needed, sometimes concurrently with the resolution of other issues.
	Monthly inspections are performed on walking trails, monitoring their condition, and addressing any maintenance or safety concerns.
	Sidewalks are inspected once a year to evaluate their condition and ensure public safety.
	Recreation committees regularly inspect and maintain the interior of sport fields' fencing, ensuring the facilities meet safety and quality standards.
	The Township plans to update the parks master plan every five years, which currently identifies needs and aligns with projected enhancements, including additional features and improved accessibility.
	Maintenance of trails and pathways is carried out as needed, ensuring they remain safe and accessible.
Rehabilitation / Replacement	The Township is transitioning towards proactive budgeting for capital replacements, a process that is ongoing as they work to catch up after taking over management responsibilities.
	Replacements of assets are prioritized in alignment with recommendations from the master plan, ensuring efficient allocation of resources.

9.5.1 Township Parks and Recreation Master Plan

The Recreation Master Plan considers several land improvement assets, including community and neighborhood parks, and trails. The report offers several valuable insights in relation to lifecycle management, which include:

- Consider establishing a unique classification system for parks and open spaces, focusing on proximity, enhancing popular uses, diverse programming, community interests, and connectivity.
- Upgrade trail amenities as per the established classification system, including bridges, canopy coverage, parking, signage, and crossings.
- Maintain coordination with the County to balance between new parklands or amenities and their operations and maintenance costs during the planning and development stages.

9.6 Forecasted Long-Term Replacement Needs

Replacement requirements analysis for the Township's land improvements portfolio was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements total is $87,000 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 quite significantly from one 5-year period to another, ranging from $30,000 to $846,000.

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.

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

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

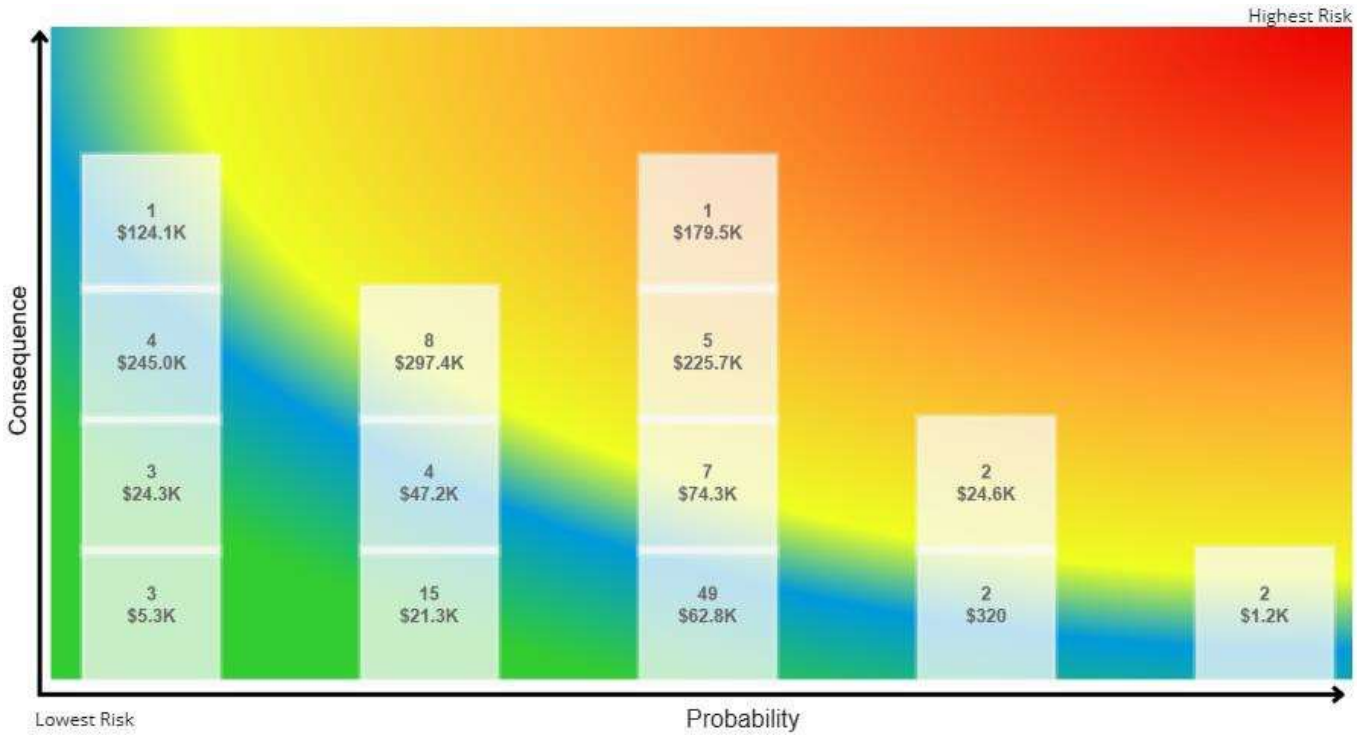
9.7 Risk Analysis

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

9.7.1 Quantitative Risk

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

Figure 53 Risk Matrix: Land Improvements



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

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

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

Figure 54 Risk Rating Ranges: Land Improvements

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$786,624	$789,312	$414,911	$355,902	-
(33%)	(34%)	(18%)	(15%)	(0%)

Table 64 Probability of Failure, Consequence of Failure, Risk Ratings: Land Improvements by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
89 Loveys	1.00 / 5	3.33 / 5	3.33 / 25
Arena	3.61 / 5	1.00 / 5	3.61 / 25
Hickson Firehall	3.13 / 5	1.00 / 5	3.13 / 25
Hickson Park	3.01 / 5	1.41 / 5	3.98 / 25
Hickson Shop	3.32 / 5	1.00 / 5	3.32 / 25
Innerkip Firehall	3.38 / 5	1.00 / 5	3.38 / 25
Innerkip Park	3.25 / 5	1.47 / 5	4.52 / 25
Memorial Hall	3.80 / 5	1.00 / 5	3.80 / 25
Public Utilities Commission Building	3.50 / 5	1.00 / 5	3.50 / 25
Queen's Park	2.92 / 5	1.44 / 5	3.91 / 25
Stonegate Park	2.49 / 5	1.18 / 5	2.92 / 25
Stormwater Management Facilities	1.00 / 5	1.50 / 5	1.50 / 25
Tavistock Firehall	3.40 / 5	1.03 / 5	3.44 / 25
Tavistock Shop	2.74 / 5	1.71 / 5	4.80 / 25
TOTAL	**3.09 / 5**	**1.35 / 5**	**3.92 / 25**

Overall, the average risk rating for land improvements assets is 3.92, which is considered Very Low.

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

9.7.2 Qualitative Risk

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

Climate Change & Extreme Weather Events

Increased freeze and thaw cycles, along with the heightened occurrence of ice jams, pose significant risks for parks, community centers, and facilities within the Township. More frequent freeze and thaw cycles can weaken structural elements, leading to cracking and surface deterioration. Additionally, ice jams can obstruct normal water flow, causing water levels to rise and exert excessive pressure on these structures, potentially leading to damage and compromised stability. The combination of freeze and thaw cycles and ice jams increases the likelihood of damage. The Township should implement effective monitoring and maintenance programs to ensure the integrity of parks, community centers, and facilities during the winter months.

Fiscal Capacity

Over time, infrastructure costs for land improvements such as parks, community centers, and facilities can spike, posing a significant risk to the Township by straining budgets and affecting services. The unpredictability of these costs can lead to financial constraints, potentially deferring projects and compromising the Township's ability to meet the needs of its residents. Delayed or deferred maintenance due to financial constraints may result in the deterioration of these facilities, leading to higher repair costs in the future. To address this risk, the Township should engage in long-term planning, conduct regular assessments, and prioritize preventive maintenance to ensure the longevity of land improvements.

9.8 Current Levels of Service

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

9.8.1 Community Levels of Service

Table 65 Community Levels of Service: Land Improvements

Service Attribute	Qualitative Description	Current LOS (2023)
Accessible & Reliable	Parks and recreation areas are provided that meet recreational needs and are reasonably accessible to the community	The Township has three primary types of parks and open spaces: parkland and open space, trails, and outdoor recreation. Currently there are 44 hectares of parkland and open spaces. Outdoor recreation assets include six baseball diamonds and six playgrounds, 3 outdoor ice rinks and one basketball court.
Affordable	Parks and recreation areas are managed cost-effectively to meet the established level of service	Description of cost savings measures in place to ensure parks and land improvements are managed cost-effectively: TBD
Safe & Regulatory	Parks and recreation areas are safe for use by the community.	Internal staff conducts playground inspections biweekly, with a more comprehensive assessment every month, ensuring regular maintenance and safety checks.
Sustainable	There are long-term plans in place for the renewal and replacement of land improvement assets	Playgrounds, walking trails, sidewalks are inspected bi-weekly, monthly, and annually respectively. Inspections review the condition of the asset and identify deficiencies.

9.8.2 Technical Levels of Service

Table 66 Technical Levels of Service: Land Improvements

Service Attribute	Technical Metric	Current LOS (2023)
Accessible & Reliable	Hectares of parking area available for parks, trails, and open spaces	2.3 hectares parking total
	Hectares of parks and open spaces per 1,000 residents	4.21 hectares / 1000 people
Quality	Average condition of municipal land improvements	Good (65%)
Affordable	O&M cost / household (Parks and Rec)	$63 / household
Safe & Regulatory	# of inspections per playground per month	1 per playground
Performance	Average condition of land improvements assets in the Township	Good (76%)
	% of assets that are in fair or better condition	98%
	% of assets that are in poor or lower condition	2%
	Actual annual capital budget : average required annual capital requirements	$0 : $87,000 (0 : 1)

9.9 Proposed Levels of Service

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

Table 67 outlines the proposed LOS scenarios that were analyzed for land improvements. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 67 Proposed LOS: Land Improvements

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
89 Loveys	$8,117	$9,950	$9,950	$11,112	Maintain
Arena	$643	$643	$643	$721	+5% Condition
Hickson Firehall	$137	$157	$157	$186	+5% Condition
Hickson Park	$12,712	$13,386	$13,803	$15,244	Maintain
Hickson Shop	$115	$115	$115	$130	+5% Condition
Innerkip Firehall	$222	$222	$222	$225	Maintain
Innerkip Park	$18,567	$18,606	$18,606	$21,537	Maintain
Memorial Hall	$73	$73	$73	$83	+5% Condition
Public Utilities Commission Building	$14	$14	$14	$25	Maintain
Queen's Park	$36,591	$36,591	$36,735	$40,870	Maintain
Stonegate Park	$3,483	$3,483	$3,483	$3,957	Maintain

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
Tavistock Firehall	$1,099	$1,099	$1,099	$1,114	Maintain
Tavistock Shop	$2,587	$2,587	$2,587	$2,652	Maintain
TOTAL	**$84,360**	**$86,925**	**$87,487**	**$97,857**	**$86,925**

10 Machinery & Equipment

The Township's machinery and equipment portfolio is split between machinery and equipment with an approximate $1.2 million replacement cost and furniture and fixtures with a $609,000 replacement cost.

10.1 Inventory & Valuation

Table 68 summarizes the quantity and current replacement cost of all machinery and equipment assets available in the Township's asset register with the following table outlining the same for furniture and fixtures.

Table 68 Detailed Asset Inventory: Machinery & Equipment

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR[24]
89 Loveys	50	Assets	$28,000	User-Defined	$83,000
Arena	38	Assets	$235,000	Cost per Unit	$27,000
East Zorra-Tavistock Office	67	Assets	$118,000	User-Defined	$23,000
Fire	71	Assets	$34,000	User-Defined	$6,000
Hickson Firehall	162	Assets	$153,000	User-Defined	$18,000
Hickson Park	8	Assets	$3,000	User-Defined	$1,000
Hickson Shop	12	Assets	$81,000	User-Defined	$9,000
Innerkip Community Centre	2	Assets	$11,000	Cost per Unit	$0
Innerkip Firehall	189	Assets	$113,000	User-Defined	$15,000
Innerkip Park	10	Assets	$4,000	User-Defined	$1,000

[24] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR[24]
Memorial Hall	6	Assets	-	User-Defined	$0
Public Works	27	Assets	$103,000	User-Defined	$9,000
Queen's Park	3	Assets	$2,000	Cost per Unit	$0
Recreation	3	Assets	$28,000	User-Defined	$5,000
Tavistock Firehall	170	Assets	$120,000	User-Defined	$13,000
Tavistock Shop	25	Assets	$139,000	Cost per Unit	$20,000
			$1,171,000	**User-Defined**	**$232,000**

Table 69 Detailed Asset Inventory: Furniture & Fixtures

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR[25]
89 Loveys	161	Assets	$205,000	User-Defined	$20,000
Arena	494	Assets	$94,000	Cost per Unit	$9,000
East Zorra-Tavistock Office	106	Assets	$62,000	User-Defined	$4,000
Hickson Park	102	Assets	$17,000	Cost per Unit	$1,000
Innerkip Community Centre	273	Assets	$24,000	Cost per Unit	$2,000
Innerkip Park	71	Assets	$86,000	Cost per Unit	$5,000
Memorial Hall	539	Assets	$88,000	Cost per Unit	$9,000
Queen's Park	29	Assets	$27,000	Cost per Unit	$2,000

[25] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR[25]
Tavistock Firehall	1	Assets	$7,000	User-Defined	$1,000
			$609,000	**Cost per Unit**	**$52,000**

Figure 55 Portfolio Valuation: Machinery & Equipment

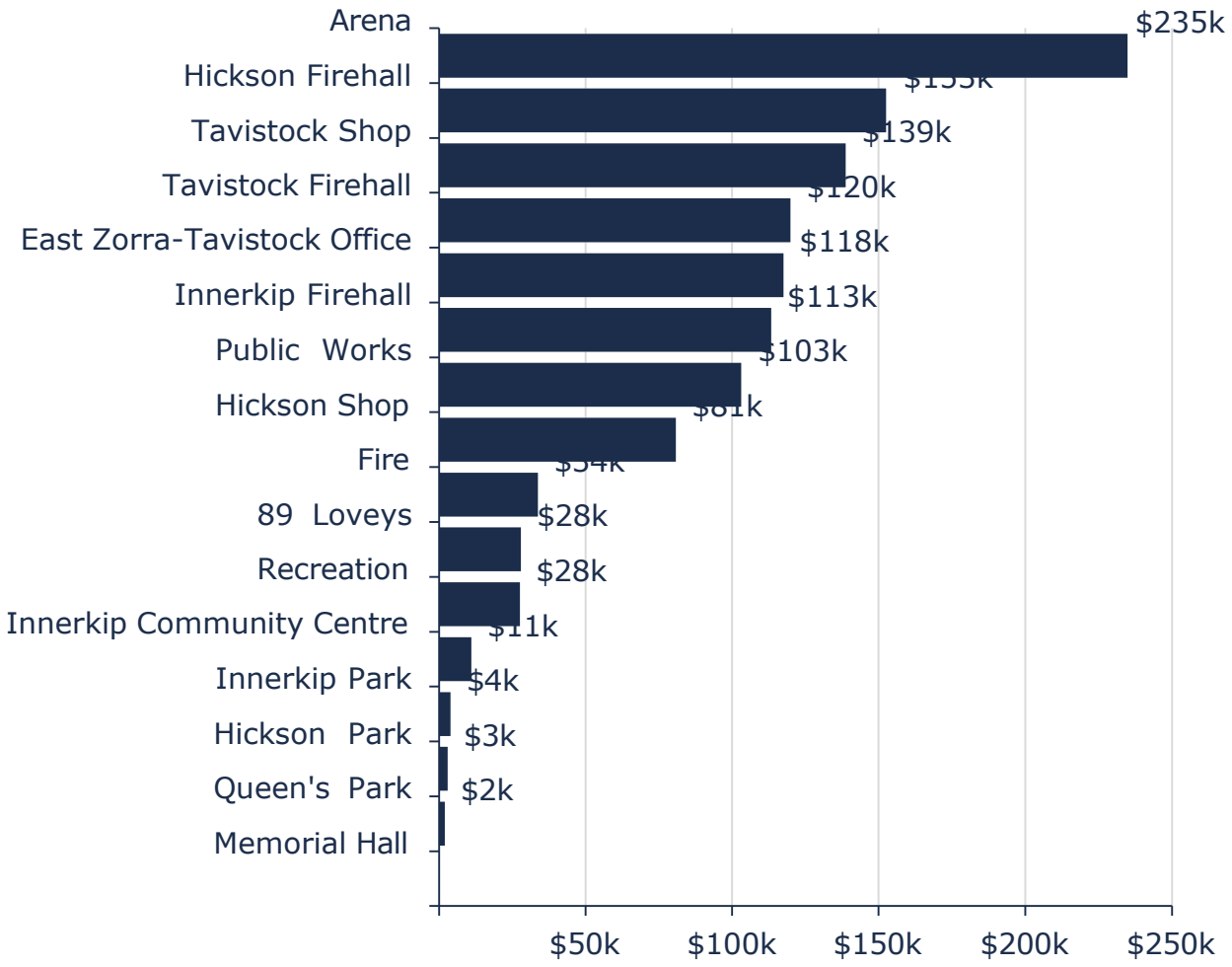
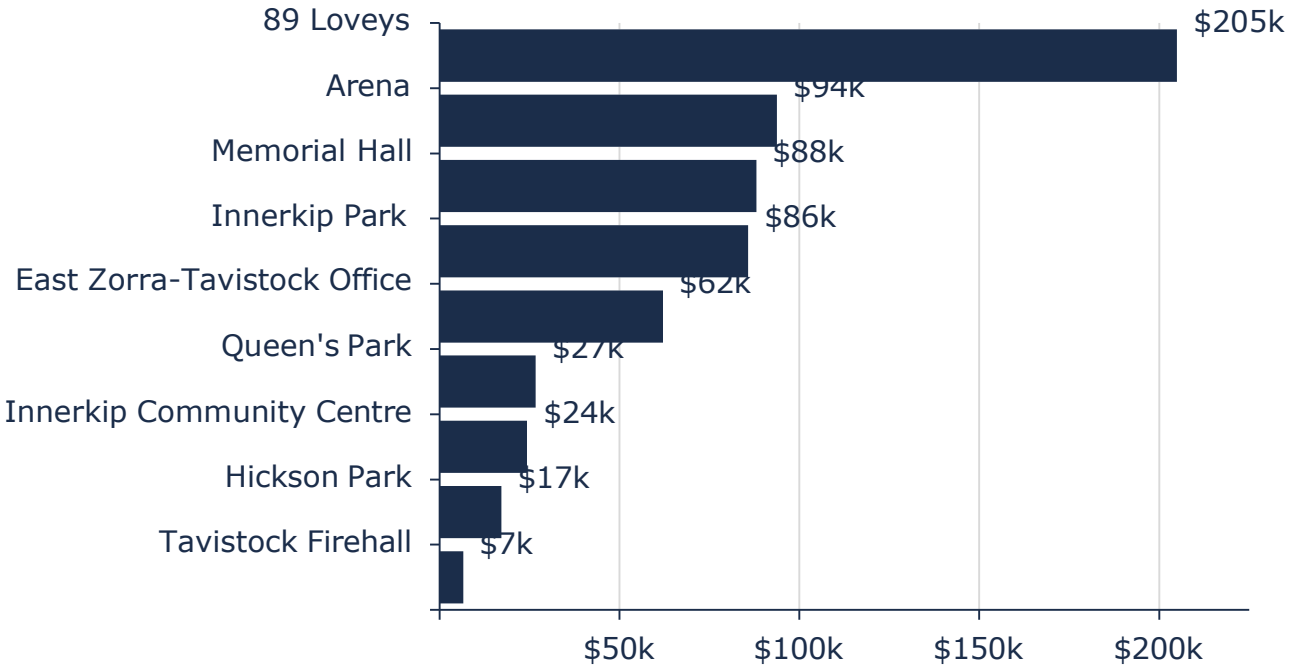


Figure 56 Portfolio Valuation: Furniture & Fixtures



10.2 Asset Condition

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets more confidently.

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

Table 70 Condition Ranges: Machinery & Equipment

Condition Ranges	Description
Very Good (80% – 100%)	♦ New or like-new condition, with no defects or performance issues. ♦ Highly efficient and reliable, operating at peak performance. ♦ No mechanical wear or cosmetic damage.

Condition Ranges	Description
	♦ All systems fully functional, with minimal maintenance required beyond routine servicing. ♦ Expected to provide years of service without major interventions.
Good (60% – 80%)	♦ Fully functional with minimal wear and tear. ♦ All major components in good condition, with only minor maintenance needed (e.g., oil changes, filter replacements). ♦ Efficient operation with no significant performance issues. ♦ Regular servicing keeps the equipment in optimal working condition. ♦ Only minor repairs or adjustments required.
Fair (40% – 60%)	♦ Occasional mechanical issues but still operational with regular maintenance. ♦ Some worn components affecting efficiency, such as aging hydraulics, belts, or electrical wiring. ♦ Moderate cosmetic wear (scratches, dents, faded paint), but no major structural damage. ♦ Requires proactive maintenance and some parts replacement to extend lifespan.
Poor (20% – 40%)	♦ Regular breakdowns and performance issues requiring frequent repairs. ♦ Noticeable mechanical wear, including worn-out bearings, belts, hydraulic leaks, or electrical malfunctions. ♦ Reduced efficiency and output, causing operational delays or increased costs. ♦ Aging components and visible deterioration, such as rust, cracks, or faded controls.

Condition Ranges	Description
	♦ Significant repairs or partial replacements needed to maintain functionality.
Very Poor (0% – 20%)	♦ Frequent mechanical failures making the equipment unreliable and unsafe to use. ♦ Severe wear and tear with major structural damage, corrosion, or missing components. ♦ High operating costs due to excessive fuel consumption, breakdowns, and inefficient performance. ♦ Parts are difficult to source or no longer available, making repairs impractical. ♦ Requires immediate replacement as repairs would not be cost-effective.

As illustrated in Figure 57, all of the machinery and equipment assets segments are in fair or better condition with the exception of the East Zorra-Tavistock Office and Queen's Park machinery and equipment. In Figure 58, the majority of the furniture and fixtures assets are similarly in fair or better condition with the exception of East Zorra-Tavistock Office and Memorial Hall furniture and fixtures.

Table 71 summarizes the replacement cost-weighted condition of the Township's machinery and equipment portfolio. Based mostly on assessed condition data, 94% of machinery and equipment are in fair or better condition, with the remaining 6% in poor or lower condition. Also based mostly on assessed condition data, 81% of furniture and fixtures are in fair or better condition, with the remaining 19% in poor or lower condition.

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

Figure 57 Asset Condition: Machinery & Equipment by Segment

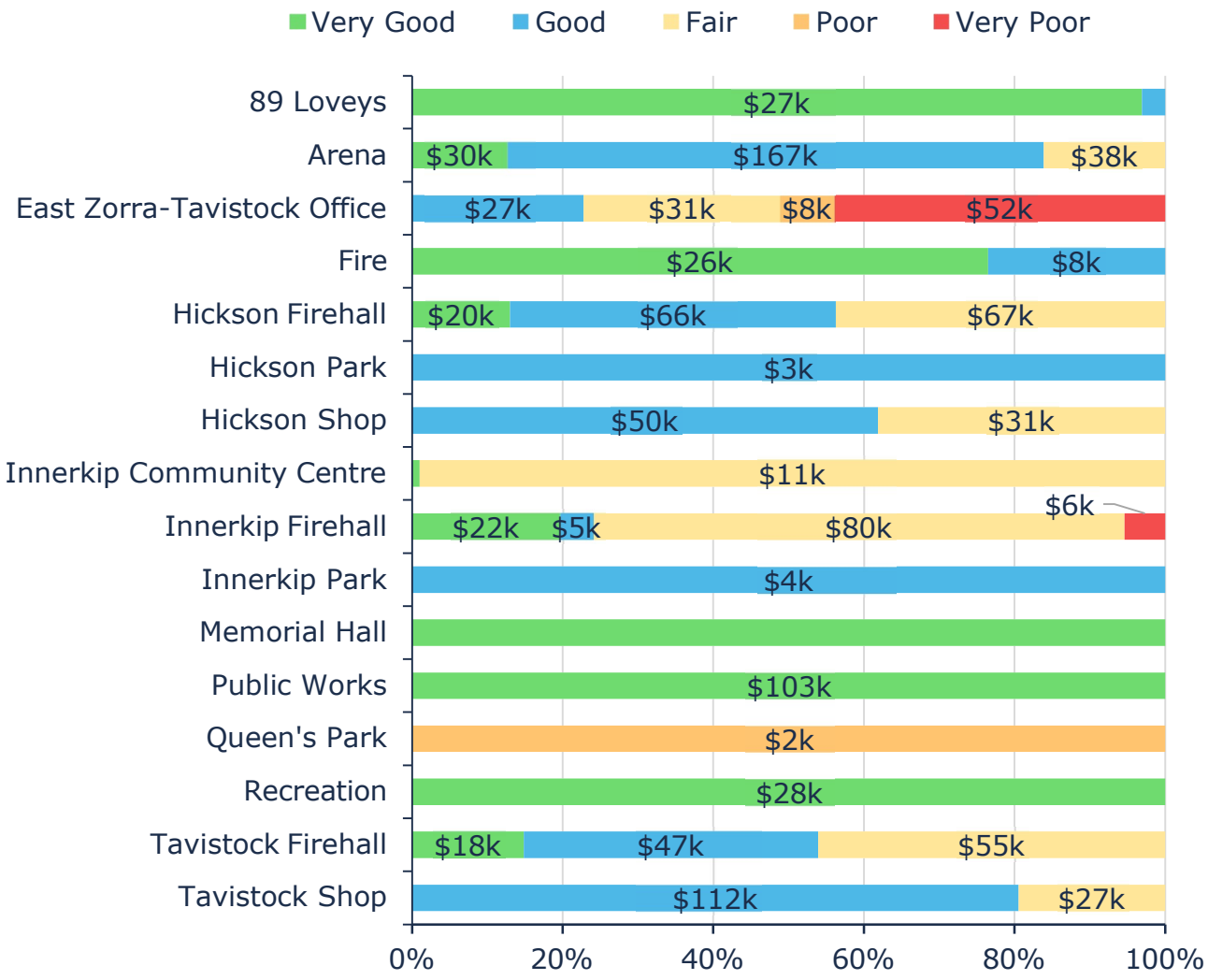
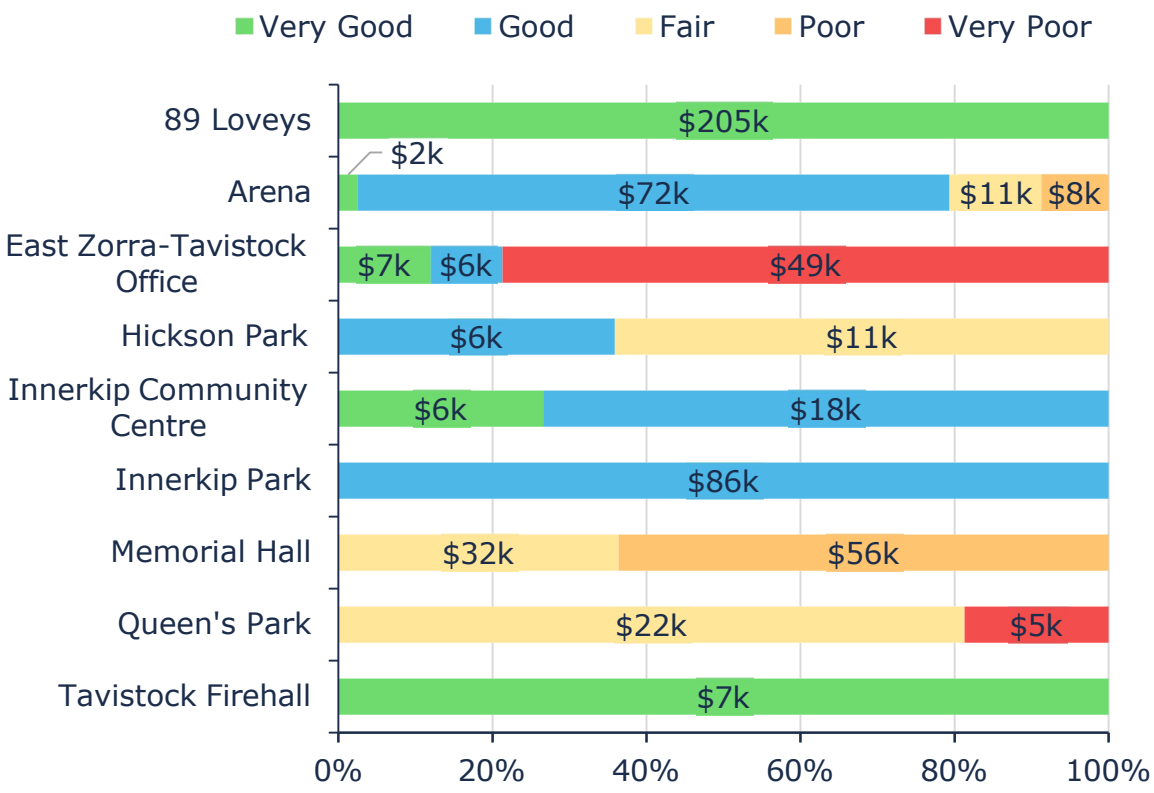


Figure 58 Asset Condition: Furniture & Fixtures by Segment



Condition data was available for 60% of machinery and equipment and 54% of furniture and fixtures assets, based on replacement costs; age was used to estimate condition for the remaining 40% and 46% of assets, respectively.

Table 71 Asset Condition: Machinery & Equipment by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[26]
89 Loveys	-	0%	$28,000	100%	Very Good (97%)
Arena	-	0%	$235,000	100%	Good (68%)
East Zorra-Tavistock Office	$60,000	51%	$57,000	49%	Poor (32%)
Fire	-	0%	$34,000	100%	Very Good (93%)

[26] Weighted by replacement cost.

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[26]
Hickson Firehall	-	0%	$153,000	100%	Good (66%)
Hickson Park	-	0%	$3,000	100%	Good (68%)
Hickson Shop	-	0%	$81,000	100%	Good (65%)
Innerkip Community Centre	-	0%	$11,000	100%	Fair (52%)
Innerkip Firehall	$6,000	5%	$107,000	95%	Good (61%)
Innerkip Park	-	0%	$4,000	100%	Good (67%)
Memorial Hall	-	0%	$0	100%	Very Good (88%)
Public Works	-	0%	$103,000	100%	Very Good (95%)
Queen's Park	$2,000	100%	-	0%	Poor (26%)
Recreation	-	0%	$28,000	100%	Very Good (98%)
Tavistock Firehall	-	0%	$120,000	100%	Good (66%)
Tavistock Shop	-	0%	$139,000	100%	Good (63%)
TOTAL	**$68,000**	**6%**	**$1,102,000**	**94%**	**Good (67%)**

Table 72 Asset Condition: Furniture & Fixtures by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[27]
89 Loveys	-	0%	$205,000	100%	Very Good (99%)
Arena	$8,000	9%	$86,000	91%	Good (60%)

[27] Weighted by replacement cost.

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[27]
East Zorra-Tavistock Office	$49,000	79%	$13,000	21%	Very Poor (19%)
Hickson Park	-	0%	$17,000	100%	Fair (55%)
Innerkip Community Centre	-	0%	$24,000	100%	Good (78%)
Innerkip Park	-	0%	$86,000	100%	Good (71%)
Memorial Hall	$56,000	64%	$32,000	36%	Poor (36%)
Queen's Park	$5,000	19%	$22,000	81%	Fair (43%)
Tavistock Firehall	-	0%	$7,000	100%	Very Good (99%)
TOTAL	**$118,000**	**19%**	**$491,000**	**81%**	**Good (67%)**

10.3 Age Profile

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

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

Table 73 summarizes and Figure 59 illustrates the average current age of each asset type and its estimated useful life for machinery and equipment. Both values are weighted by the replacement cost of individual assets.

Table 73 Detailed Asset Age: Machinery & Equipment

Segment	Weighted Average EUL	Weighted Average Age
89 Loveys	4.4	1.0
Arena	8.7	4.1
East Zorra-Tavistock Office	6.1	6.4
Fire	8.8	1.3
Hickson Firehall	9.6	8.7
Hickson Park	5.0	2.0
Hickson Shop	10.0	5.0
Innerkip Community Centre	5.0	12.9
Innerkip Firehall	9.6	11.1
Innerkip Park	5.0	2.0
Memorial Hall	10.0	2.0
Public Works	12.3	1.4
Queen's Park	10.0	Unknown[28]
Recreation	5.0	1.0
Tavistock Firehall	12.2	15.5
Tavistock Shop	8.2	8.9

[28] In-service dates for Queen's Park machinery and equipment is not known, so age could not be calculated.

Table 74 Detailed Asset Age: Furniture & Fixtures

Segment	Weighted Average EUL	Weighted Average Age
89 Loveys	10.0	1.0
Arena	10.0	27.3
East Zorra-Tavistock Office	18.0	18.1
Hickson Park	13.2	28.0
Innerkip Community Centre	10.0	27.4
Innerkip Park	15.0	41.0
Memorial Hall	10.0	68.0
Queen's Park	15.0	11.0
Tavistock Firehall	10.0	1.0

Age analysis reveals that while much of the furniture and fixtures assets remain in service beyond their expected useful life, machinery and equipment assets are much more varied.

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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

Figure 59 Estimated Useful Life vs. Asset Age: Machinery & Equipment

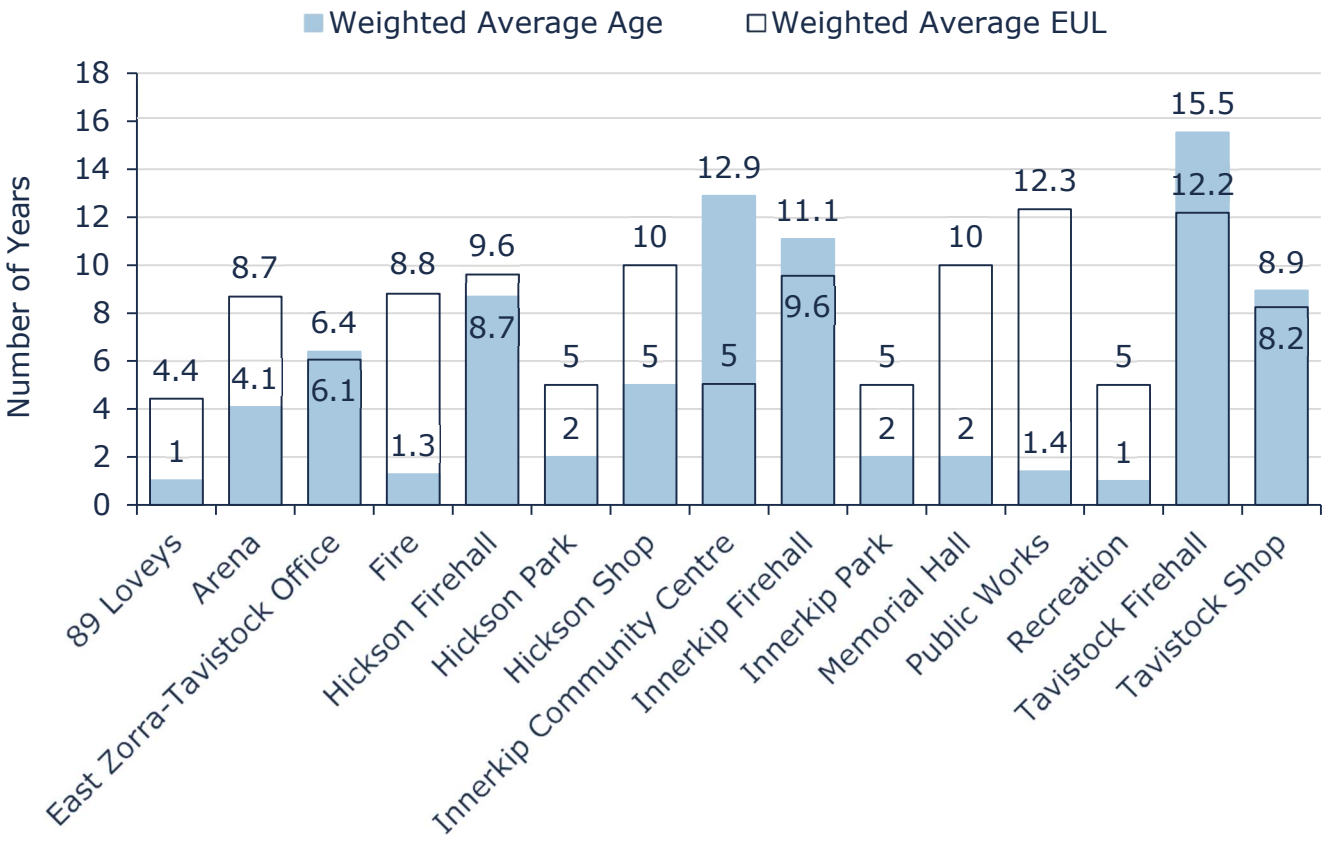
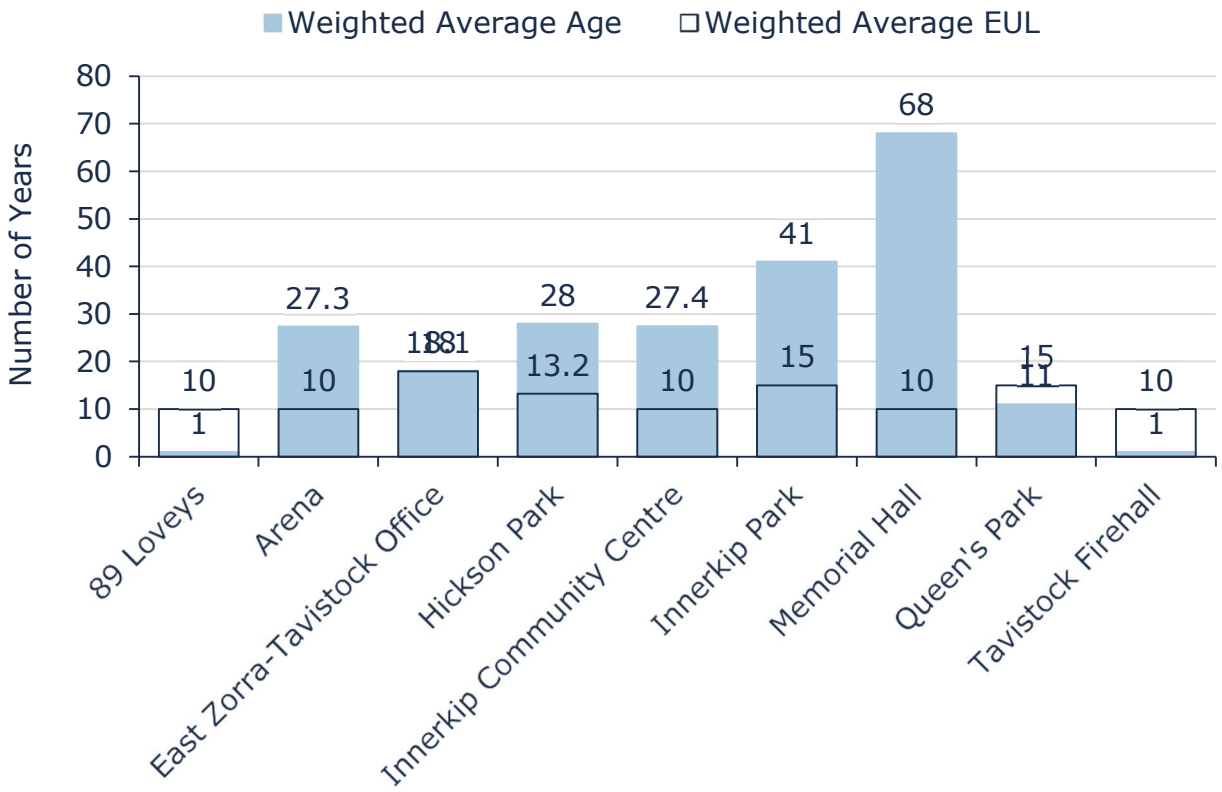


Figure 60 Estimated Useful Life vs. Asset Age: Furniture & Fixtures



10.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 84% of both machinery and equipment and furniture and fixtures assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 75 Service Life Remaining: Machinery & Equipment

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
89 Loveys	-	$28k	-	-
Arena	-	$68k	$137k	$30k

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
East Zorra-Tavistock Office	$38k	$59k	$8k	$13k
Fire	-	$8k	$24k	$1k
Hickson Firehall	-	$25k	$128k	-
Hickson Park	-	$3k	-	-
Hickson Shop	-	-	$31k	$50k
Innerkip Community Centre	-	$11k	-	-
Innerkip Firehall	-	$30k	$83k	-
Innerkip Park	-	$4k	-	-
Memorial Hall	-	-	-	-
Public Works	-	$19k	$42k	$42k
Queen's Park	-	$2k	-	-
Recreation	-	$28k	-	-
Tavistock Firehall	-	$3k	$65k	$51k
Tavistock Shop	-	$49k	$90k	-
TOTAL	**$38k**	**$336k**	**$608k**	**$188k**

Table 76 Service Life Remaining: Furniture & Fixtures

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
89 Loveys	-	-	$205k	-
Arena	-	$19k	$74k	-
East Zorra-Tavistock Office	$45k	$4k	-	$13k
Hickson Park	-	-	$17k	-
Innerkip Community Centre	-	-	$24k	-
Innerkip Park	-	-	-	$86k
Memorial Hall	-	$88k	-	-
Queen's Park	-	$5k	$22k	-
Tavistock Firehall	-	-	$7k	-
TOTAL	**$45k**	**$117k**	**$349k**	**$99k**

Figure 61 Service Life Remaining: Machinery & Equipment

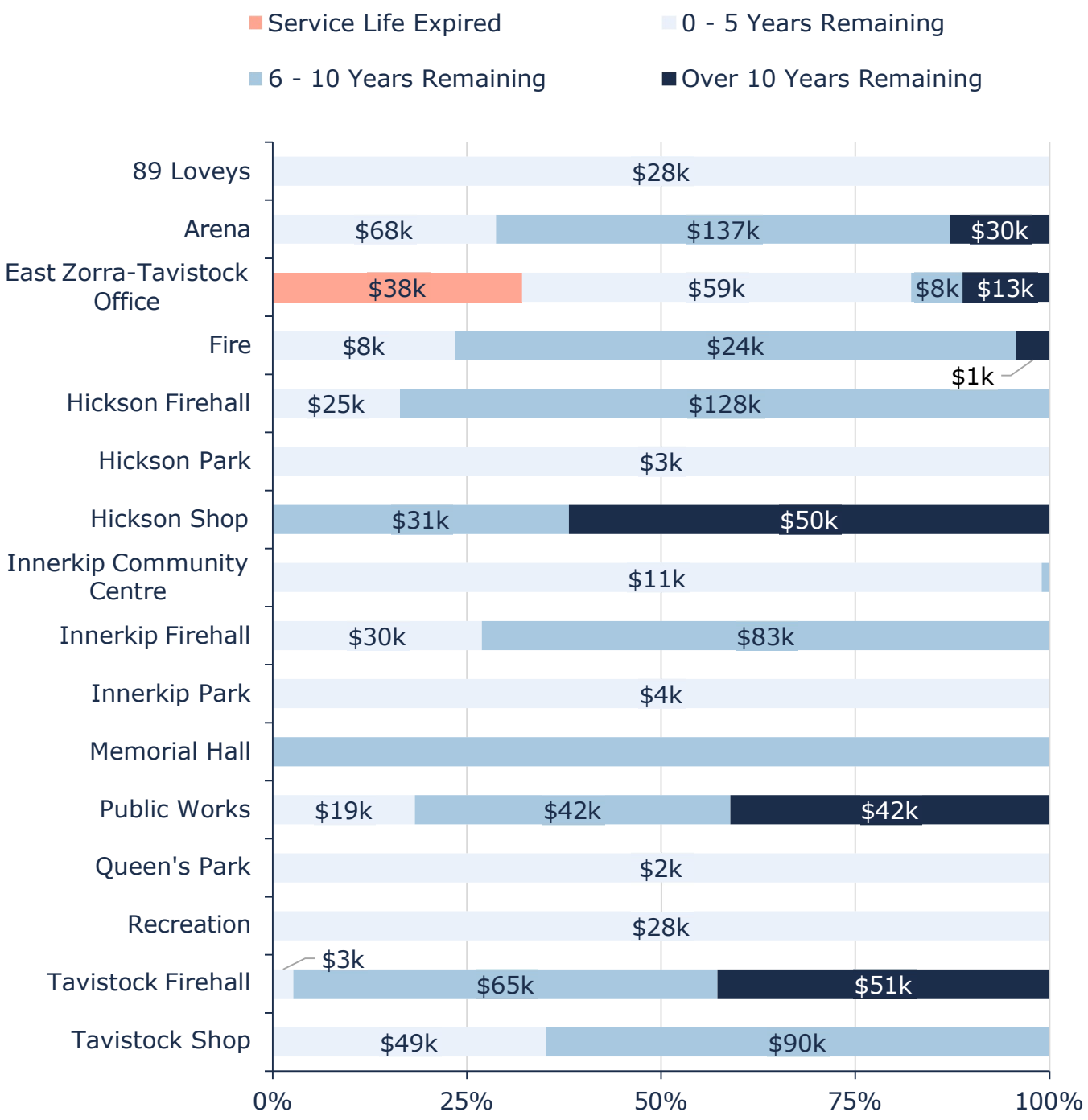
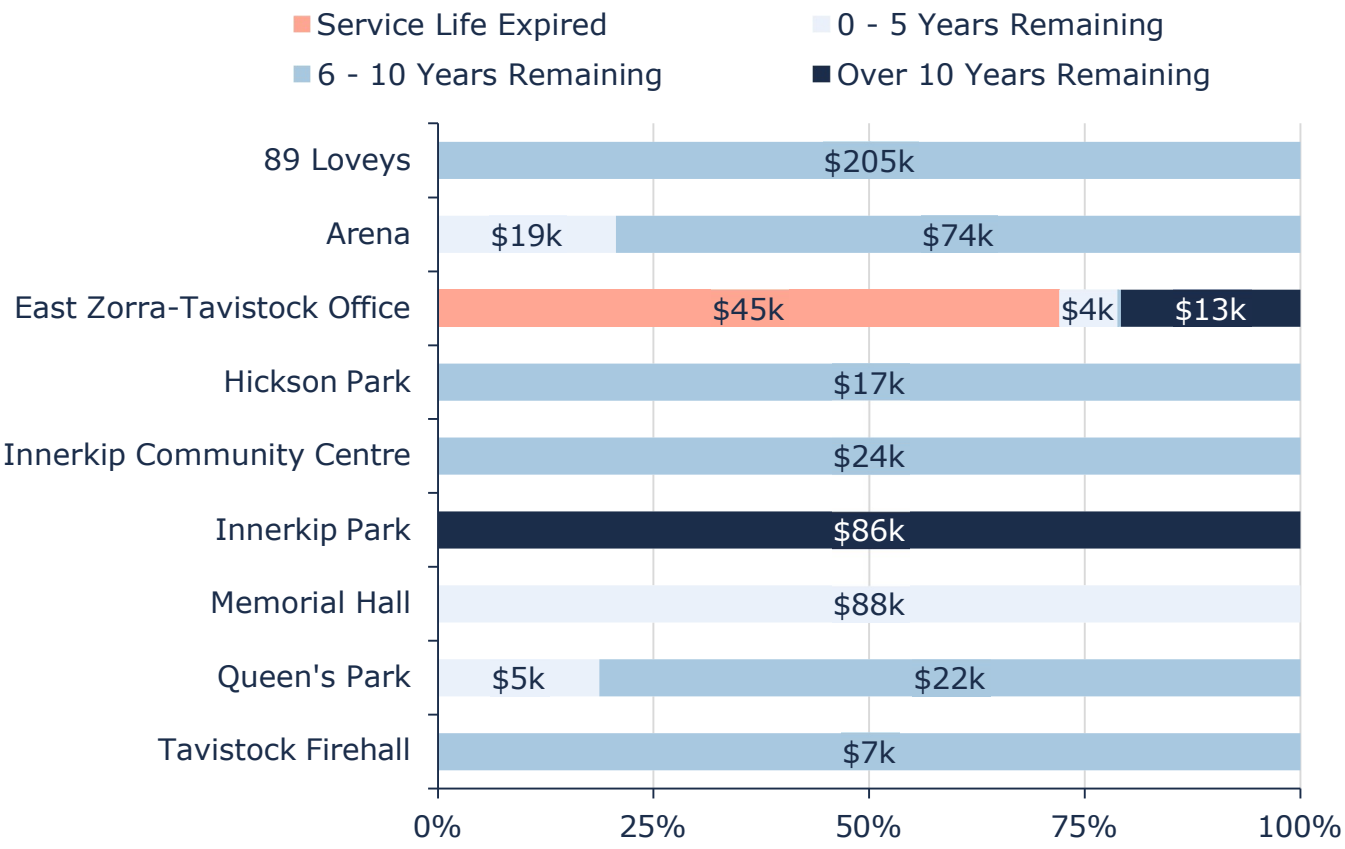


Figure 62 Service Life Remaining: Furniture & Fixtures



10.5 Current Approach to Lifecycle Management

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

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

Table 77 Lifecycle Management Strategy: Machinery & Equipment

Activity Type	Description of Current Strategy
Maintenance & Inspection	Internal staff complete basic inspections on machinery and equipment assets such as chainsaws, trucks, and other heavy machinery prior to use.
	Annual regulatory inspections are completed for trucks and Zambonis.
	The Township's approach towards furniture inspections leans towards being reactive. Issues are addressed as they emerge.
	Newly acquired furniture and IT equipment are tracked, aiming to establish a consistent replacement schedule.
	Maintenance is regularly scheduled for mowers and Zambonis to ensure their optimal performance and longevity.
Rehabilitation	Rehabilitations are considered on a case by base basis; machinery, equipment and furniture assets are infrequently rehabilitated.
Replacement	With the expertise of senior staff, the Township relies on substantial reserves to guide IT lifecycle planning.
	The approach towards public works and smaller equipment involves replacing them reactively, on a case-by-case basis.
	The administration department has devised a reserve cycle plan for equipment replacement, with a strategic staggering of replacement years.

10.6 Forecasted Long-Term Replacement Needs

Replacement requirements and analysis for the Township’s machinery and equipment portfolio as well as its furniture and fixtures was run

from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements total $232,000 for all machinery and equipment and $52,000 for all furniture and fixtures. 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.

Additionally, there is currently an approximate $38,000 machinery and equipment and $45,000 furniture and fixtures backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

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

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

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

10.7 Risk Analysis

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

10.7.1 Quantitative Risk

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for machinery and

equipment assets based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Figure 65 Risk Matrix: Machinery & Equipment

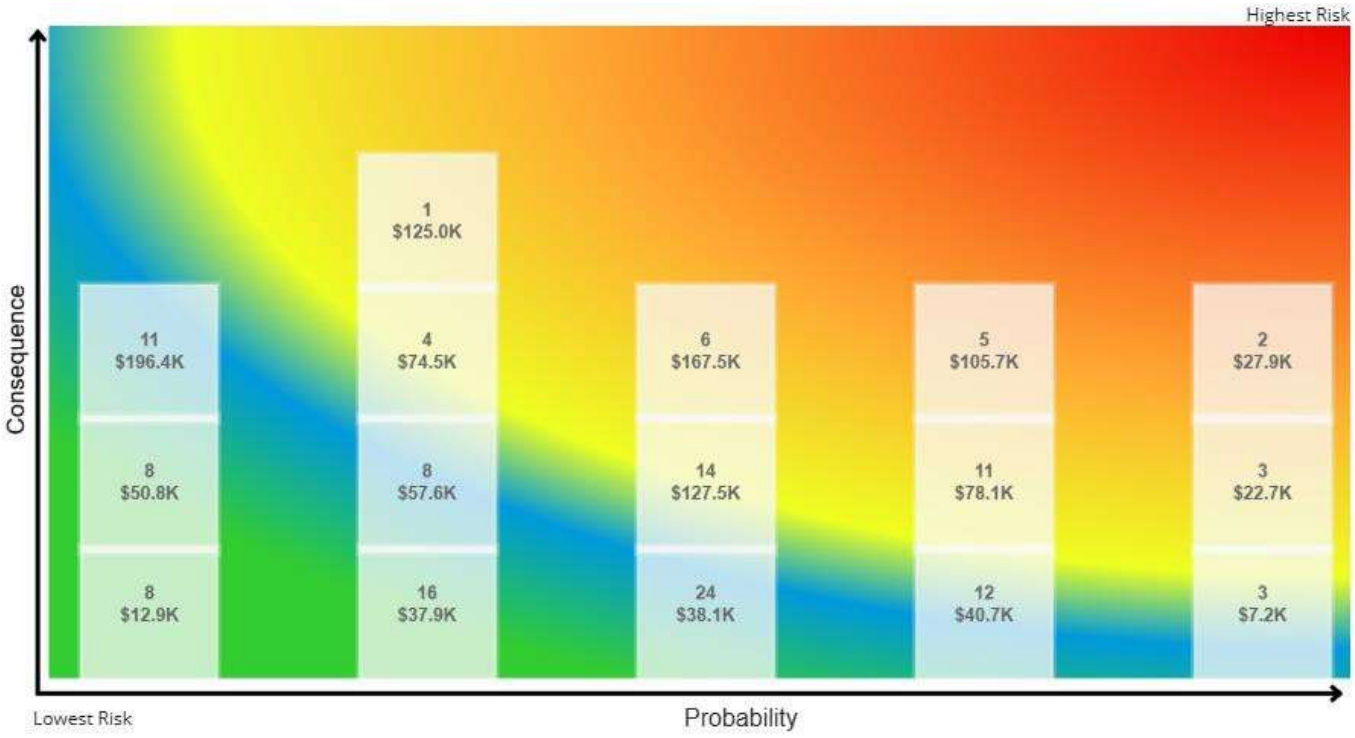
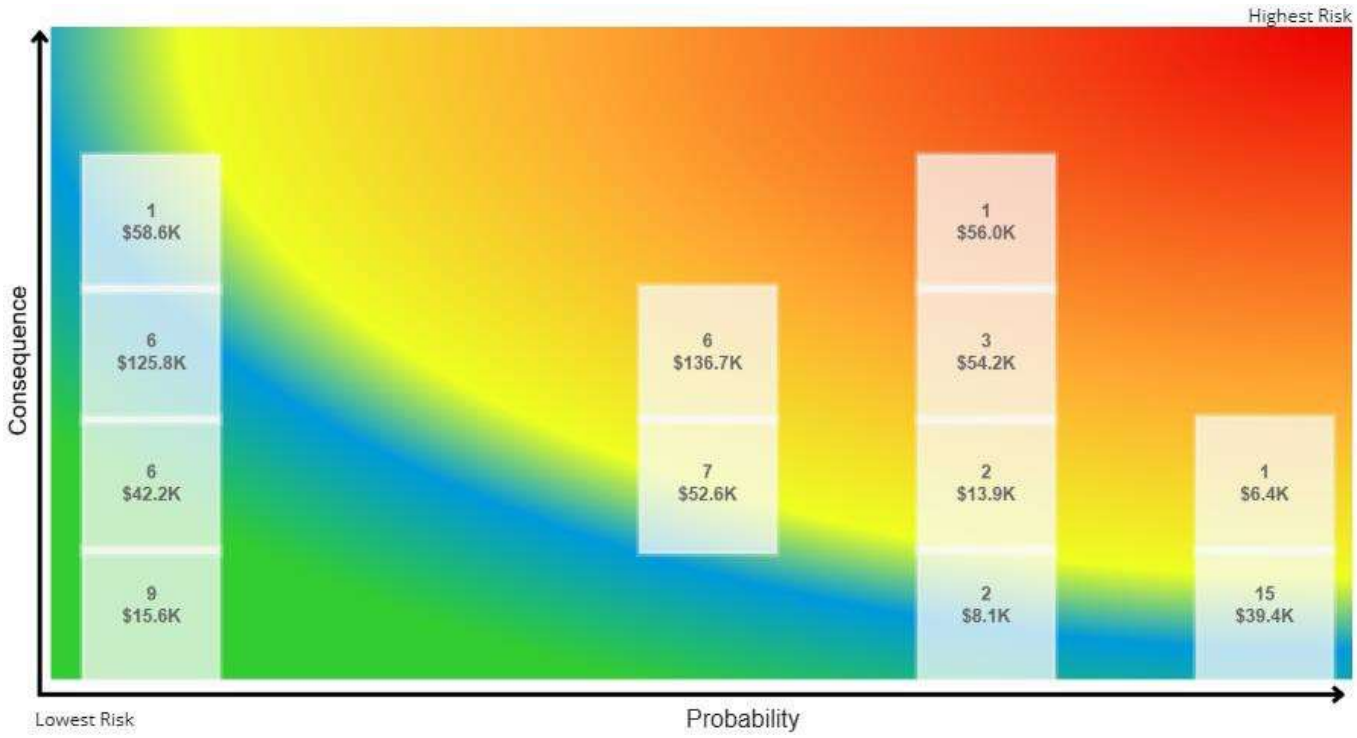


Figure 66 Risk Matrix: Furniture & Fixtures



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

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

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

Figure 67 Risk Rating Ranges: Machinery & Equipment

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$404,000	$239,000	$245,000	$254,000	$28,000

(35%)	(20%)	(21%)	(22%)	(2%)

Figure 68 Risk Rating Ranges: Furniture & Fixtures

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$244,000	$99,000	$30,000	$181,000	$56,000
(40%)	(16%)	(5%)	(30%)	(9%)

Table 78 Probability of Failure, Consequence of Failure, Risk Ratings: Machinery & Equipment by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
89 Loveys	1.8 / 5	2.51 / 5	4.6 / 25
Arena	2.35 / 5	3.31 / 5	7.48 / 25
East Zorra-Tavistock Office	3.69 / 5	2.25 / 5	8.31 / 25
Fire	1.35 / 5	2.41 / 5	3.11 / 25
Hickson Firehall	2.95 / 5	2.32 / 5	6.86 / 25
Hickson Park	2.5 / 5	1 / 5	2.5 / 25
Hickson Shop	3.12 / 5	3 / 5	9.36 / 25
Innerkip Community Centre	3.98 / 5	2.98 / 5	11.9 / 25
Innerkip Firehall	3.45 / 5	2.09 / 5	7.18 / 25
Innerkip Park	2.5 / 5	1 / 5	2.5 / 25
Memorial Hall	1.5 / 5	1 / 5	1.5 / 25
Public Works	1.12 / 5	2.9 / 5	3.16 / 25
Queen's Park	4.5 / 5	1 / 5	4.5 / 25

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Recreation	1.5 / 5	2.8 / 5	4.21 / 25
Tavistock Firehall	3.38 / 5	2.6 / 5	8.9 / 25
Tavistock Shop	3.37 / 5	1.93 / 5	6.57 / 25
TOTAL	**2.8 / 5**	**2.58 / 5**	**6.97 / 25**

Table 79 Probability of Failure, Consequence of Failure, Risk Ratings: Furniture & Fixtures by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
89 Loveys	1 / 5	3.15 / 5	3.15 / 25
Arena	3.42 / 5	2.56 / 5	8.92 / 25
East Zorra-Tavistock Office	4.15 / 5	1.1 / 5	4.67 / 25
Hickson Park	3.82 / 5	2.64 / 5	10.2 / 25
Innerkip Community Centre	2.84 / 5	2.73 / 5	8.24 / 25
Innerkip Park	3.5 / 5	2.69 / 5	9.4 / 25
Memorial Hall	4.32 / 5	3.64 / 5	15.82 / 25
Queen's Park	3.4 / 5	2.41 / 5	7.85 / 25
Tavistock Firehall	1.4 / 5	3.86 / 5	5.4 / 25
TOTAL	**2.79 / 5**	**2.8 / 5**	**7.53 / 25**

Overall, the average risk rating for machinery and equipment assets is 6.97 and for furniture and fixtures is 7.53, both of which is considered Low.

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

10.7.2 Qualitative Risk

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

Critical Spares (Fire)

Fire equipment is vital to enabling Fire Protection Services; without this equipment the public could be in jeopardy. Due to supply chain interruptions, rising costs, and high regulatory standards, critical equipment is at risk of being unavailable. Timely replacement and repairs are essential to reduce the risk of equipment unavailability.

Organizational Cognizance

As technology continues to evolve, maintaining and operating machinery and equipment can become increasingly complex. Some of the Township's equipment may face challenges related to aging components, limited availability of replacement parts, and the need for specialized maintenance. At the same time, staff expertise is continually developing to keep pace with changing technologies and industry standards. To help ensure the continued reliability, safety, and performance of these assets, it is important to support regular equipment assessments, provide ongoing training and development opportunities for staff, and implement clear maintenance and replacement strategies. These proactive efforts will help the Township manage its equipment efficiently and sustainably.

10.8 Current Levels of Service

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

10.8.1 Community Levels of Service

Table 80 Community Levels of Service: Machinery & Equipment

Service Attribute	Qualitative Description	Current LOS (2023)
Accessible and Reliable	Furniture, Equipment, and IT assets function reliably and are available to support the Township's services	Description of critical equipment and the significant repairs to extend service life: TBD
Sustainable	There are long-term plans in place for the renewal and replacement of machinery & equipment assets	Prior to use, Township staff complete basic inspections of machinery and equipment assets. Larger assets (i.e., mowers and Zambonis) receive annual regulatory inspections and regularly scheduled maintenance. Smaller assets, like furniture and IT, maintenance activities are primarily reactive in nature. Replacements are primary driven by reserve funds and associated lifecycle planning, or in the case of smaller public works equipment asset failure.

10.8.2 Technical Levels of Service

Table 81 Technical Levels of Service: Machinery & Equipment

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of municipal machinery and equipment	Good (67%)
	Average condition of municipal furniture and fixtures	Good (67%)

Service Attribute	Technical Metric	Current LOS (2023)
Performance (Machinery & Equipment)	% of assets in fair or better condition	94%
	% of assets in poor or lower condition	6%
Performance (Furniture & Fixtures)	% of assets in fair or better condition	81%
	% of assets in poor or lower condition	19%
Performance	Actual annual capital budget: average required annual capital requirements (Machinery & Equipment and Furniture & Fixtures)	(228,000 : $285,000) (0.80 : 1)

10.9 Proposed Levels of Service

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

Table 82 outlines the proposed LOS scenarios that were analyzed for machinery and equipment. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Table 82 Proposed LOS: Machinery & Equipment

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
89 Loveys	45%	50%	55%	-	Maintain
	$82,378	$82,614	$82,614	$6,400	
Arena	45%	50%	55%	-	+5% Condition
	$26,119	$27,358	$27,405	$27,412	
East Zorra-Tavistock Office	45%	50%	55%	-	Maintain
	$22,724	$23,241	$23,552	$23,316	
Fire	65%	70%	75%	-	Maintain
	$6,404	$6,404	$6,404	$4,523	
Hickson Firehall	65%	70%	75%	-	+5% Condition
	$17,947	$17,947	$17,947	$15,743	
Hickson Park	45%	50%	55%	-	Maintain
	$586	$586	$586	$597	
Hickson Shop	45%	50%	55%	-	+5% Condition
	$9,224	$9,224	$9,224	$5,583	
Innerkip Community Centre	45%	50%	55%	-	+5% Condition
	$11	$11	$11	$2,211	
Innerkip Firehall	65%	70%	75%	-	Maintain
	$15,317	$15,317	$15,317	$14,367	
Innerkip Park	45%	50%	55%	-	Maintain

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
	$782	$782	$782	$798	
Memorial Hall	45%	50%	55%	-	+5% Condition
	$21	$21	$21	$21	
Public Works	45%	50%	55%	-	Maintain
	$9,116	$9,309	$9,583	$10,358	
Queen's Park	45%	50%	55%	-	Maintain
	$196	$196	$196	$200	
Recreation	45%	50%	55%	-	+5% Condition
	$5,313	$5,419	$5,419	$5,527	
Tavistock Firehall	65%	70%	75%	-	Maintain
	$13,340	$13,340	$13,340	$11,000	
Tavistock Shop	45%	50%	55%	-	Maintain
	$18,892	$20,314	$21,651	$18,750	
TOTAL	**$228,369**	**$232,083**	**$234,050**	**$146,805**	**$232,130**

Table 83 Proposed LOS: Furniture & Fixtures

Segment	Average Annual Requirement				Selection
	-5% Condition (45%)	Maintain Baseline (50%)	+5% Condition (55%)	No Target	
89 Loveys	$19,072	$19,832	$20,720	$20,500	Maintain
Arena	$9,146	$9,193	$9,193	$9,377	+5% Condition
East Zorra-Tavistock Office	$3,512	$3,825	$4,035	$4,269	Maintain
Hickson Park	$1,249	$1,249	$1,249	$1,347	Maintain
Innerkip Community Centre	$2,384	$2,384	$2,384	$2,431	+5% Condition
Innerkip Park	$5,046	$5,046	$5,046	$5,719	Maintain
Memorial Hall	$8,630	$8,630	$8,630	$8,803	+5% Condition
Queen's Park	$1,669	$1,669	$1,669	$1,781	Maintain
Tavistock Firehall	$648	$648	$648	$661	Maintain
TOTAL	**$51,356**	**$52,475**	**$53,574**	**$54,887**	**$52,475**

11 Vehicles

The Township's vehicles portfolio has a total current replacement of vehicles is $4.2 million.

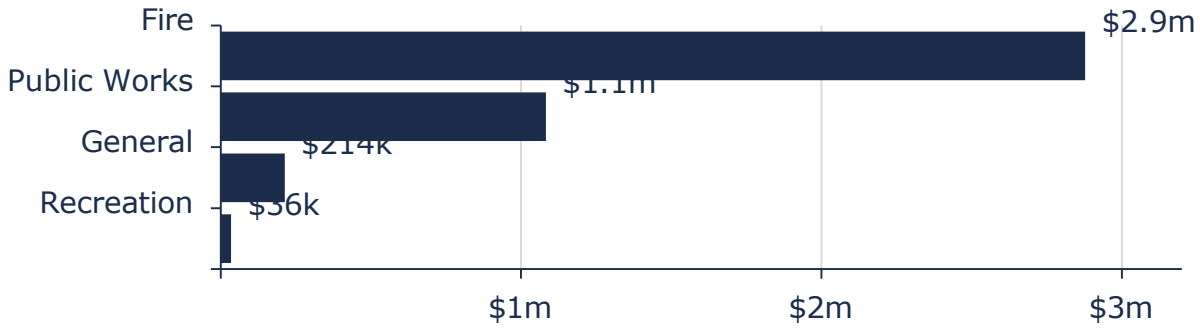
11.1 Inventory & Valuation

Table 84 summarizes the quantity and current replacement cost of all vehicles assets available in the Township's asset register.

Table 84 Detailed Asset Inventory: Vehicles

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method	AAR[29]
Fire	13	Assets	$2,878,000	User-Defined	$169,000
General	4	Assets	$214,000	User-Defined	$37,000
Public Works	12	Assets	$1,083,000	User-Defined	$150,000
Recreation	2	Assets	$36,000	User-Defined	$0
TOTAL			**$4,211,000**	**User-Defined**	**$356,000**

Figure 69 Portfolio Valuation: Vehicles



[29] Average Annual Capital Requirement (AAR). For further detail, see section 2.3.5 Average Annual Requirement.

11.2 Asset Condition

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets more confidently.

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

Table 85 Condition Ranges: Vehicles

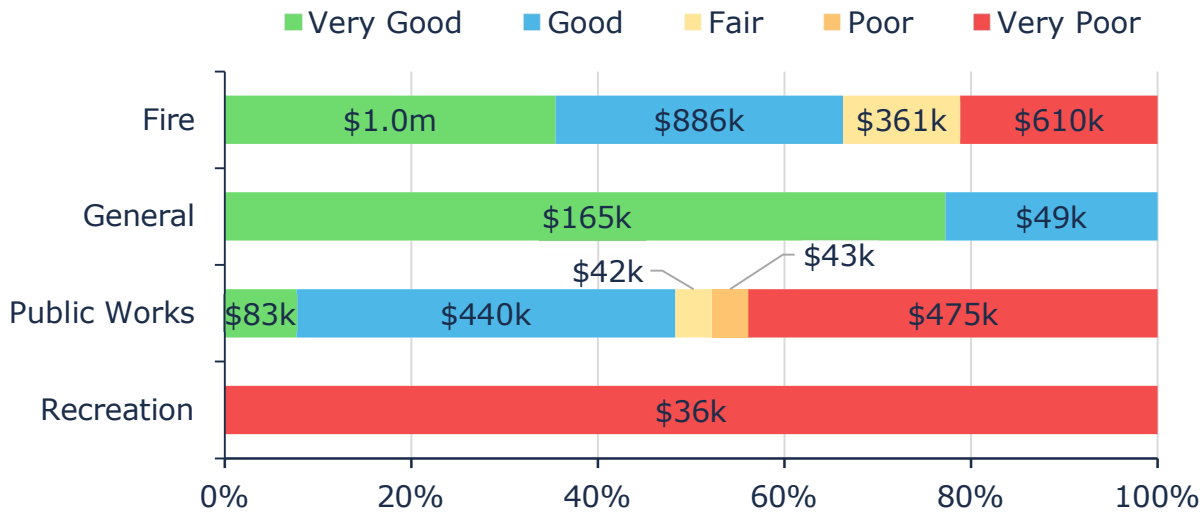
Condition Ranges	Description
Very Good (80% – 100%)	♦ Like-new condition—mechanically excellent with no defects or major wear. ♦ No visible exterior damage—paint, body, and glass are in near-perfect condition. ♦ Interior is clean and well-maintained, with no significant wear on seats, controls, or dashboard. ♦ Optimal performance and fuel efficiency, with all systems (engine, brakes, electronics) fully functional. ♦ Minimal maintenance required beyond standard servicing.
Good (60% – 80%)	♦ Mechanically sound with no major issues—engine, transmission, and brakes function well. ♦ Minor cosmetic wear (small scratches or slight fading), but no major damage. ♦ Interior is in good condition, with all controls, seats, and features fully operational. ♦ Fuel efficiency and performance remain close to original specifications. ♦ Routine maintenance needed to keep it in top condition.
Fair (40% – 60%)	♦ Some mechanical wear and tear, but still operational with occasional minor repairs needed. ♦ Body has some cosmetic flaws, such as scratches, small dents, or light rust. ♦ Interior is intact but shows signs of aging, such as worn upholstery or faded controls. ♦ All major systems functional, but performance is slightly reduced compared to new.

Condition Ranges	Description
	♦ Regular maintenance required to prevent further decline.
Poor (20% – 40%)	♦ Noticeable mechanical problems, such as engine misfires, transmission slipping, or weak brakes. ♦ Frequent minor repairs needed (e.g., battery issues, fluid leaks, suspension wear). ♦ Significant body wear including rust spots, fading paint, or moderate dents. ♦ Aging interior with visible wear on seats, dashboard, and controls. ♦ Decreased fuel efficiency and performance issues becoming more noticeable.
Very Poor (0% – 20%)	♦ Severe mechanical and structural issues—engine, transmission, or braking system may be failing or unreliable. ♦ Frequent breakdowns making the vehicle unsafe or impractical for regular use. ♦ Extensive body damage such as severe rust, dents, or missing panels. ♦ Worn-out interior with torn seats, broken controls, or non-functional components (e.g., HVAC, lights, windows). ♦ High repair costs often exceeding the vehicle's remaining value. Near end-of-life.

As illustrated in Figure 70, the majority of the Township's vehicles are in fair or better condition.

Table 86 summarizes the replacement cost-weighted condition of the Township's vehicles portfolio. Based primarily on assessed condition data, 72% of vehicles are in fair or better condition, with the remaining 28% in poor or lower condition.

Figure 70 Asset Condition: Vehicles by Segment



All of heavy duty vehicles and the majority of light duty vehicles are in fair or better condition. Assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

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

Table 86 Asset Condition: Vehicles by Segment

Asset Category	≤ Poor $	≤ Poor %	≥ Fair $	≥ Fair %	Average Condition[30]
Fire	$610,000	21%	$2,269,000	79%	Good (61%)
General	-	0%	$214,000	100%	Very Good (91%)
Public Works	$518,000	48%	$565,000	52%	Fair (43%)
Recreation	$36,000	100%	-	0%	Very Poor (0%)
TOTAL	**$1,163,000**	**28%**	**$3,048,000**	**72%**	**Fair (57%)**

[30] Weighted by replacement cost.

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 replacement spikes.

Table 87 summarizes and 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.

Table 87 Detailed Asset Age: Vehicles

Segment	Weighted Average EUL	Weighted Average Age
Fire	19.5	8.8
General	5.8	1.3
Public Works	8.9	5.8
Recreation	6.5	8.1

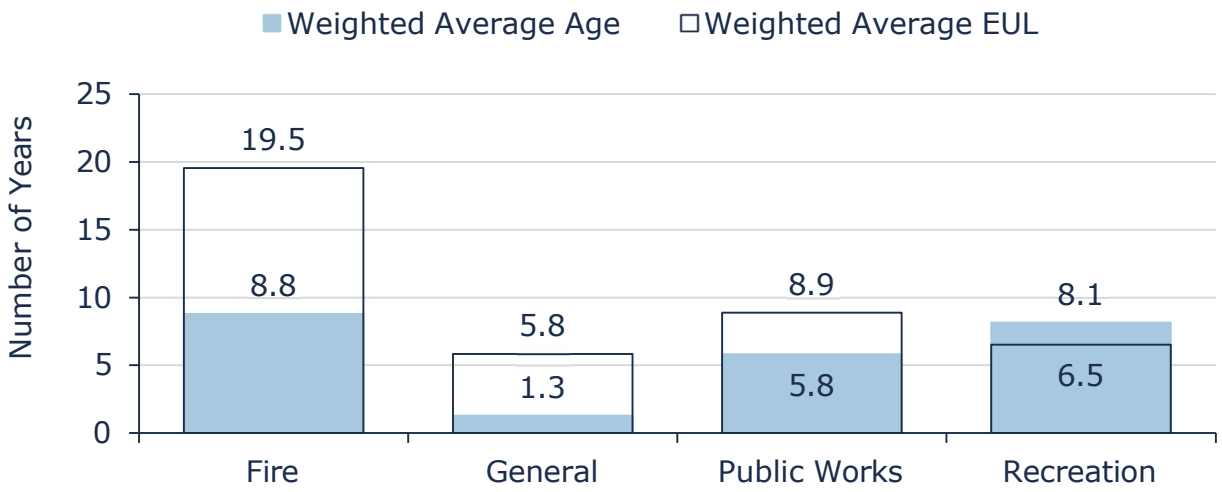
Age analysis reveals that, on average, recreation vehicles have surpassed their design life. This aligns with the Township's strategy for the Recreation department to inherit vehicle from other departments when they are replacing their assets.

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

However, each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed

length of service life for each asset type. Further, useful life estimates established as part of the PSAB 3150 implementation may not be accurate and may not reflect in-field asset performance.

Figure 71 Estimated Useful Life vs. Asset Age: Vehicles



11.4 Service Life Remaining

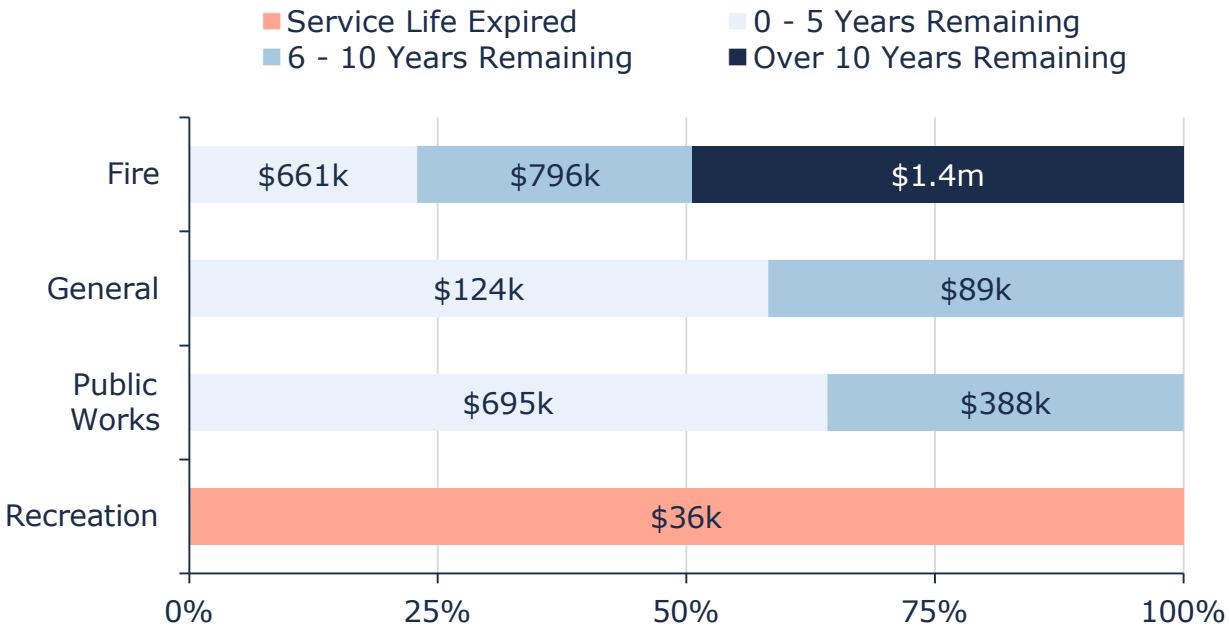
Based on asset age, available assessed condition data and estimated useful life, 66% of assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B. Service life remaining is outlined by replacement value below.

Table 88 Service Life Remaining: Vehicles

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
Fire	-	$661k	$796k	$1.4m
General	-	$124k	$89k	-
Public Works	-	$695k	$388k	-
Recreation	$36k	-	-	-

Asset Segment	Service Life Expired	0 - 5 Years Remaining	6 - 10 Years Remaining	Over 10 Years Remaining
TOTAL	**$36k**	**$1.5m**	**$1.3m**	**$1.4m**

Figure 72 Service Life Remaining: Vehicles



11.5 Current Approach to Lifecycle Management

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

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

Table 89 Lifecycle Management Strategy: Vehicles

Activity Type	Description of Current Strategy
Maintenance & Inspection	Internal staff complete regular inspections and circle checks for the Township's vehicle assets.
	An external mechanic completes annual safeties as required by the Ministry of Transportation of Ontario (MTO).
	External mechanics conduct annual inspections on trucks, driving the maintenance activities for these vehicles.
	The timing of repairs is based on a combination of usage and operational performance
Rehabilitation	Rehabilitations are considered on a case by base basis; vehicles assets are infrequently rehabilitated.
Replacement	Replacement decisions consider the asset's age, condition, mileage hours, maintenance cost and history (i.e., if there is a trend of increasing maintenance).
	All vehicles have a replacement plan which range from a 6 to 10-year, however most are replaced in 7 years. Typically, vehicles are sold when they approach the end of their life cycle with proceeds reinvested in new vehicle assets.

Fire vehicles are replaced on a schedule of 20 - 25 years

11.6 Forecasted Long-Term Replacement Needs

Replacement requirements and analysis for the Township's vehicles portfolio was run from 2025 until 2074 (a 50-year timespan) for assets included in Citywide Assets, the Township's primary asset management system and asset register. The Township's average annual requirements total $356,000 for all vehicles. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Additionally, there is currently an approximate $36,000 backlog comprised of assets that remain in service beyond their estimated useful life. The 10-year capital requirements expanded in Appendix B have accounted for removing this accumulation and continuing to rehabilitate or replace assets in alignment with the proposed levels of service.

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

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

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

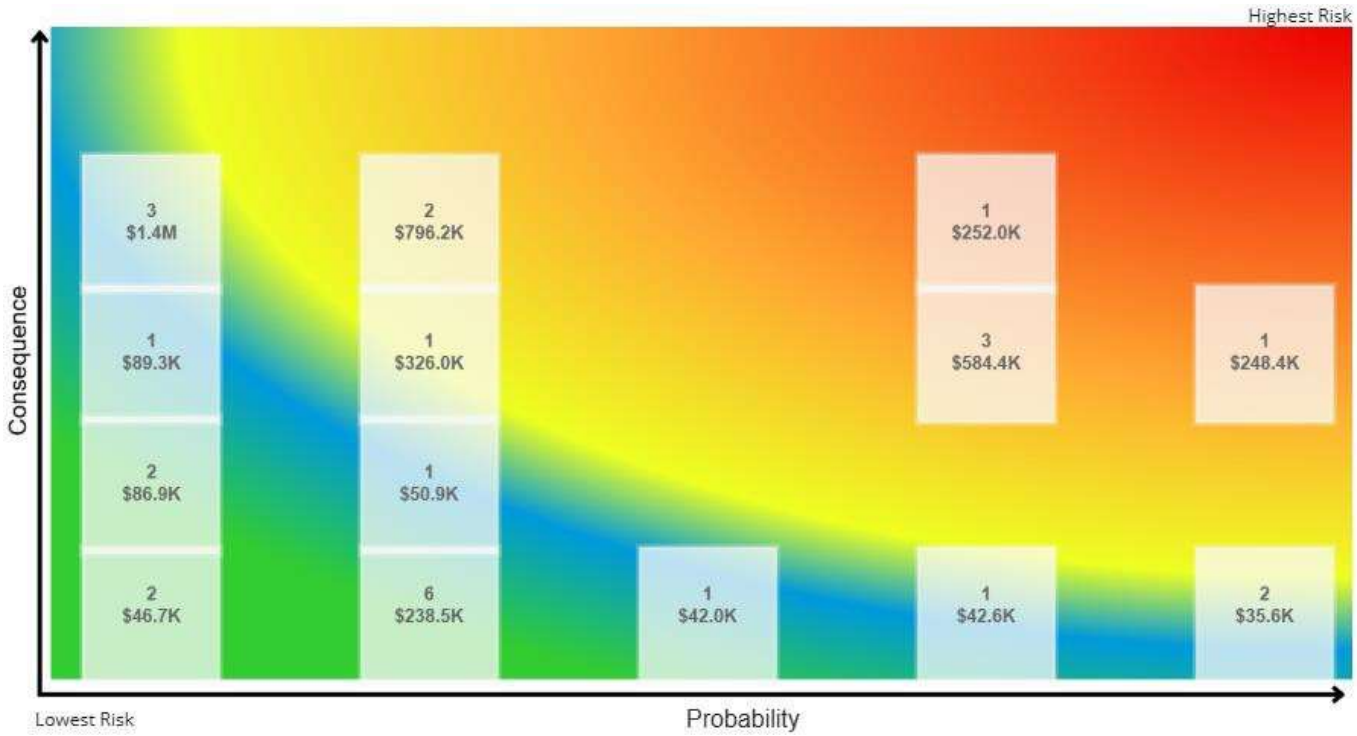
11.7 Risk Analysis

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

11.7.1 Quantitative Risk

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

Figure 74 Risk Matrix: Vehicles



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

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

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

Figure 75 Risk Rating Ranges: Vehicles

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$1,524,000	$806,000	$435,000	$946,000	$500,000
(36%)	(19%)	(10%)	(22%)	(12%)

Table 90 Probability of Failure, Consequence of Failure, Risk Ratings: Vehicles by Segment

Asset Category	Probability of Failure	Consequence of Failure	Risk Rating
Fire	2.11 / 5	4.18 / 5	8.58 / 25
General	1.9 / 5	1.89 / 5	3.25 / 25
Public Works	3.21 / 5	3.08 / 5	10 / 25
Recreation	5 / 5	1.25 / 5	6.25 / 25
TOTAL	**2.41 / 5**	**3.76 / 5**	**8.66 / 25**

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

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

11.7.2 Qualitative Risk

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

Demographic Change & Community Expectations

As growth occurs within the Township, it can pose risks to their vehicles due to increased demands on transportation services. With the expanding population and the addition of a larger service area, the Township may be required to acquire more vehicles in the future to meet the current levels of service. The extended service area may lead to longer travel distances and more extensive wear and tear on existing vehicles, potentially affecting vehicle maintenance costs and overall fleet efficiency. Effective planning and sustainable strategies are important to balance service expansion and cost-effectiveness

Fiscal Capacity

Legislative requirements and changes in Minimum Maintenance Standards (MMS) can present risks to vehicles within a Township. Recent mandates to electrify the fleet will bring on increased costs to the Township to upgrade gas vehicles to electric. MMS require vehicles and equipment available for road and winter maintenance, pressuring the Township to have a fleet ready to respond. Timely replacement and proactive maintenance will better ensure the Township's vehicles are available for use when needed.

11.8 Current Levels of Service

The tables that follow summarize the Township's current levels of service. There are no specifically prescribed KPIs under Ontario Regulation 588/17 for non-core

assets, therefore the KPIs below represent performance measures that the Township has selected for this AMP.

11.8.1 Community Levels of Service

Table 91 Community Levels of Service: Vehicles

Service Attribute	Qualitative Description	Current LOS (2023)
Affordable	Vehicles are managed at the lowest possible cost for the required level of service	Description of cost savings measures in place to reduce the overall costs of maintaining and replacing vehicles, public works, and parks and recreation departments: TBD
Safe & Regulatory	Vehicles are safe to use, do not cause a hazard to operators and meet regulatory requirements	Description of strategies in place to mitigate health and safety risks
Sustainability	There are long-term plans in place for the renewal and replacement of all municipal vehicles	Internal staff complete regular inspections and circle checks for the Township's vehicle assets. Annually, an external mechanic completes safeties as required by the Ministry of Transportation of Ontario (MTO). Repairs are scheduled based on a combination of usage and operational performance.

11.8.2 Technical Levels of Service

Table 92 Technical Levels of Service: Vehicles

Service Attribute	Technical Metric	Current LOS (2023)
Affordable	Annual maintenance costs	$94,000

Service Attribute	Technical Metric	Current LOS (2023)
Safe & Regulatory	Frequency of pump tests	Annually
Scope	Average condition of municipal vehicles	Fair (57%)
Performance	% of vehicles in fair or better condition	72%
	% of vehicles in poor or worse condition	28%
	Actual annual capital budget: average required annual capital requirements	$705,000 : $356,000 (1.98 : 1)

11.9 Proposed Levels of Service

Table 93 Proposed LOS: Vehicles

Segment	Average Annual Requirement				Selection
	-5% Condition	Maintain Baseline	+5% Condition	No Target	
Fire	65%	70%	75%	-	Maintain
	$169,127	$169,127	$169,127	$155,425	
General	45%	50%	55%	-	Maintain
	$35,151	$36,920	$36,920	$37,242	
Public Works	45%	50%	55%	-	Maintain
	$142,420	$150,075	$154,510	$133,799	
TOTAL	**$346,698**	**$356,122**	**$360,557**	**$326,467**	**$356,122**

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

sustainability of these service levels, and explain the Township's ability to afford the proposed LOS.

Table 93 outlines the proposed LOS scenarios that were analyzed for vehicles. Further explanation and proposed LOS analysis at the portfolio level can be found in Section 4 Proposed Levels of Service Analysis.

Strategies

12 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.

12.1 Growth Assumptions

12.1.1 Oxford County Official Plan (2020)

The Oxford County Official Plan is the policy document that establishes the overall land use strategy for both the County and the eight area municipalities that comprise the County.

The policies and land use schedules contained in the Official Plan establish locational and development review requirements for various land uses (residential, commercial, industrial, institutional, parks, etc.), set out how agricultural land and other natural features and cultural heritage resources are to be protected and provide direction on how environmental constraints are to be addressed. The Official Plan also helps to guide municipal decisions with respect to infrastructure, public services, and other investments.

The Oxford County Official Plan was adopted by Oxford County Council on December 13, 1995. The Plan has been continuously updated and amended since then, with the latest amendments being adopted in July 2024. The Plan provides a general policy direction and a long-range planning framework for development in East-Zorra Tavistock.

12.1.2 Regional Growth

Oxford County recently undertook a Phase 1 Comprehensive Review Study prepared by Hemson Consulting Ltd. that includes updated municipal growth forecasts and land need analysis. The purpose of the study was to provide up to date growth forecast and land supply information to inform the County's growth

management policies and various other County and Area Municipal projects and initiatives.

All eight Area Municipalities in the County are forecast to experience residential and employment growth, and some are expected to require additional land to accommodate that growth. The following tables illustrate the population, household, and employment forecasts for East Zorra-Tavistock between 2016-2046.

Forecast Type	2016	2021	2026	2031	2036	2041	2046	Growth 2016-2046
Total Population	7,330	7,940	8,420	8,930	9,450	9,940	10,400	3,070
Total Occupied Households	2,710	2,990	3,210	3,440	3,660	3,840	4,020	1,310
Total Employment	2,800	2,950	3,020	3,100	3,200	3,320	3,450	520

12.2 Impact of Growth on Lifecycle Activities

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

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

13 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 East Zorra-Tavistock to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

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

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

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

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

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

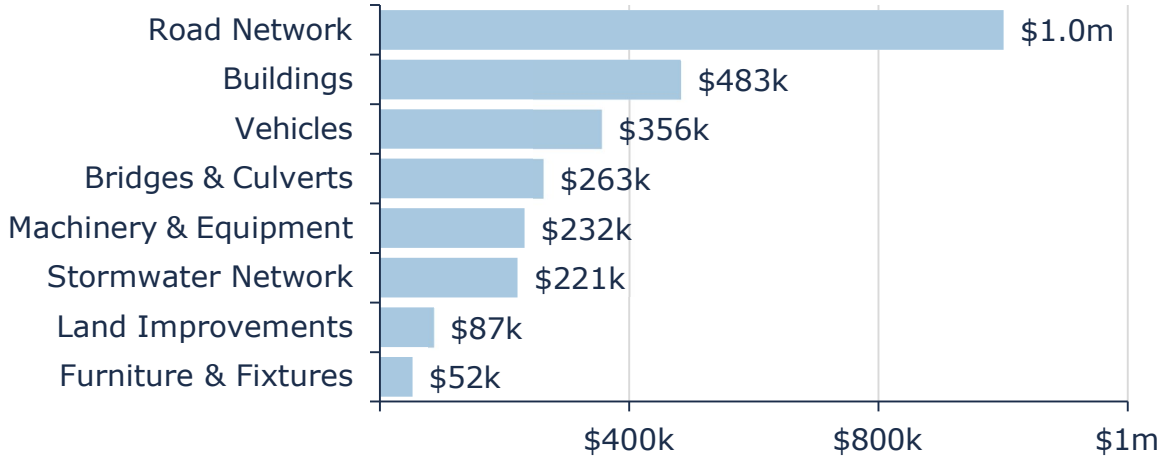
13.1 Annual Requirements & Capital Funding

13.1.1 Annual Requirements

The annual requirements represent the amount the Township should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability. In total, the Township must allocate approximately $2,695,000 annually to address capital requirements for the assets included in this AMP.

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

Figure 76 Annual Capital Funding Requirements by Asset Category



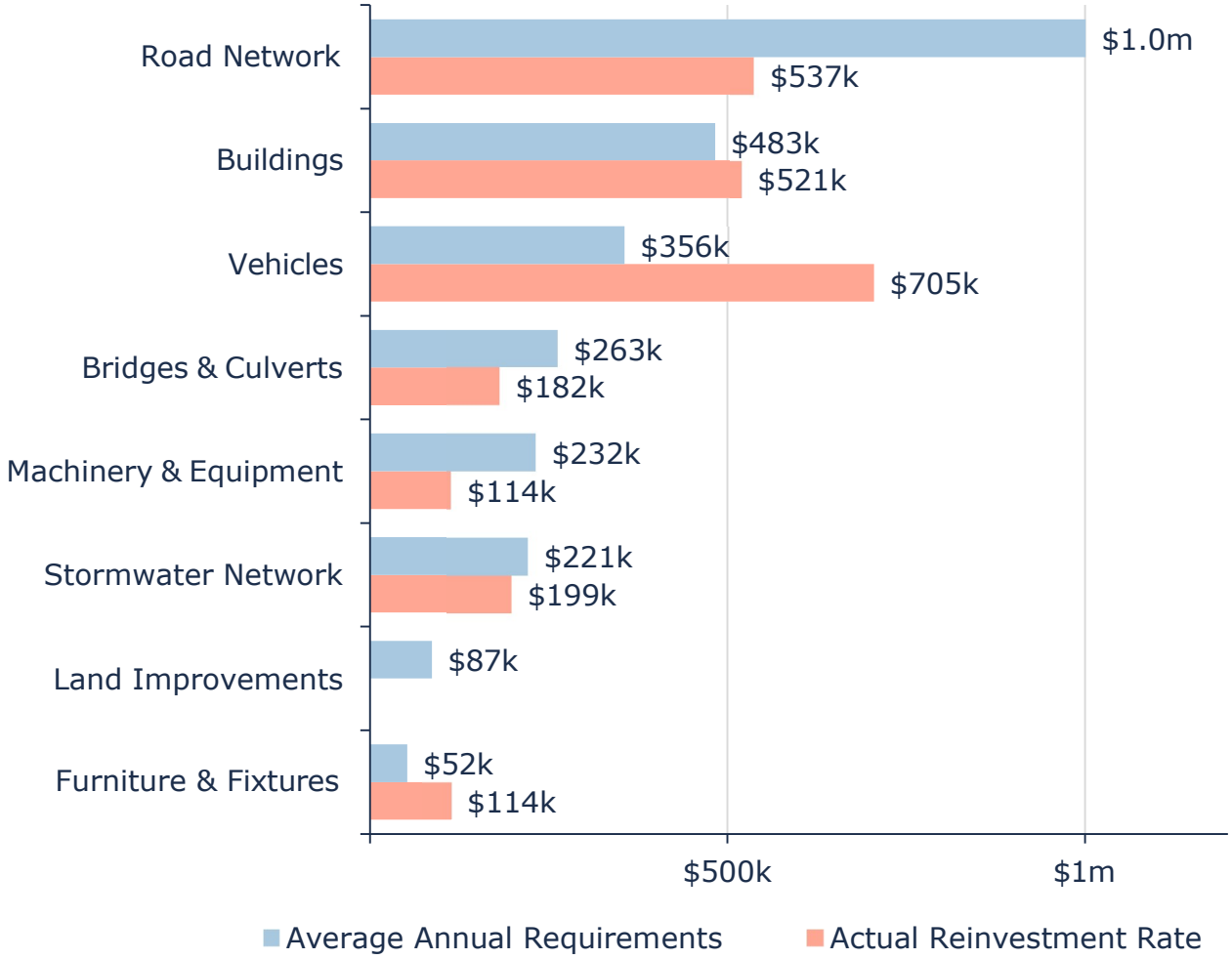
However, for the Road Network, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Township's roads. The development of these strategies allows for a comparison of potential cost avoidance if the strategies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

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

13.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $2,371,000 towards capital projects per year. Given the annual capital requirement of $2,695,000, there is currently a funding gap of $324,000 annually.

Figure 77 Annual Requirements vs. Capital Funding Available



13.2 Funding Objective

We have developed a scenario that would enable Township of East Zorra-Tavistock to achieve full funding within 5 years for the all asset categories included in this AMP

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

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

13.3 Financial Profile: Tax Funded Assets

13.3.1 Current Funding Position

The following tables show, by asset category, East Zorra-Tavistock's average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by taxes.

Table 94 Annual Available Funding for Tax Funded Assets

Asset Category	AAR	Annual Funding Available				Annual Deficit
		Taxes	CCBF	OCIF	Total	
Road Network	$1.0 m	$291k	$247k		$537k	$464k
Bridges & Culverts	$263k	$28k		$154k	$182k	$81k
Stormwater Network	$221k	$199k			$199k	$23k
Buildings	$483k	$521k			$521k	-
Land Improvements	$87k	-				$87k
Machinery & Equipment	$232k	$114k			$114k	$118k
Furniture & Fixtures	$52k	$114k			$114k	-
Vehicles	$356k	$705k			$705k	-
TOTAL	**$2.7m**	**$2.0m**	**$247k**	**$154k**	**$2.4m**	**$324k**

The average annual investment requirement for the above categories is $2,695,000. Annual revenue currently allocated to these assets for capital purposes is $2,371,000 leaving an annual deficit of $324,000. Put differently, these infrastructure categories are currently funded at 88% of their long-term requirements.

13.3.2 Full Funding Requirements

In 2022, the Township of East Zorra-Tavistock budgeted annual tax revenues of approximately $7.3 million. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Table 95 Tax Increase Requirements for Full Funding

Asset Category	Tax Change Required for Full Funding
Road Network	6.4%
Bridges & Culverts	1.1%
Stormwater Network	0.3%
Buildings	-0.5%
Land Improvements	1.2%
Machinery & Equipment	1.6%
Furniture & Fixtures	-0.8%
Vehicles	-4.8%
TOTAL	**4.4%**

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

- East Zorra-Tavistock's debt payments for these asset categories will be decreasing $157,000 by 2030.

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

Table 96 Tax Increase Options 5-20 Years

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	$323,813	$323,813	$323,813	$323,813
Change in Debt Costs	-($157,000)	-($193,000)	-($193,000)	-($193,000)

	5 Years	10 Years	15 Years	20 Years
Resulting Infrastructure Deficit:	**$166,788**	**$131,309**	**$131,309**	**$131,309**
Tax Increase Required	4.4%	4.4%	4.4%	4.4%
Annually:	**0.5%**	**0.2%**	**0.1%**	**0.1%**

13.3.3 Financial Strategy Recommendations

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

- Increasing tax revenues by 0.5% each year for the next five years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP in alignment with the targets set out in the proposed levels of service.
- Allocating the current CCBF and OCIF revenue as outlined previously.
- Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable since this funding is a multi-year commitment[31].
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a

[31] 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.

longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full funding on an annual basis in 5 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available.

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

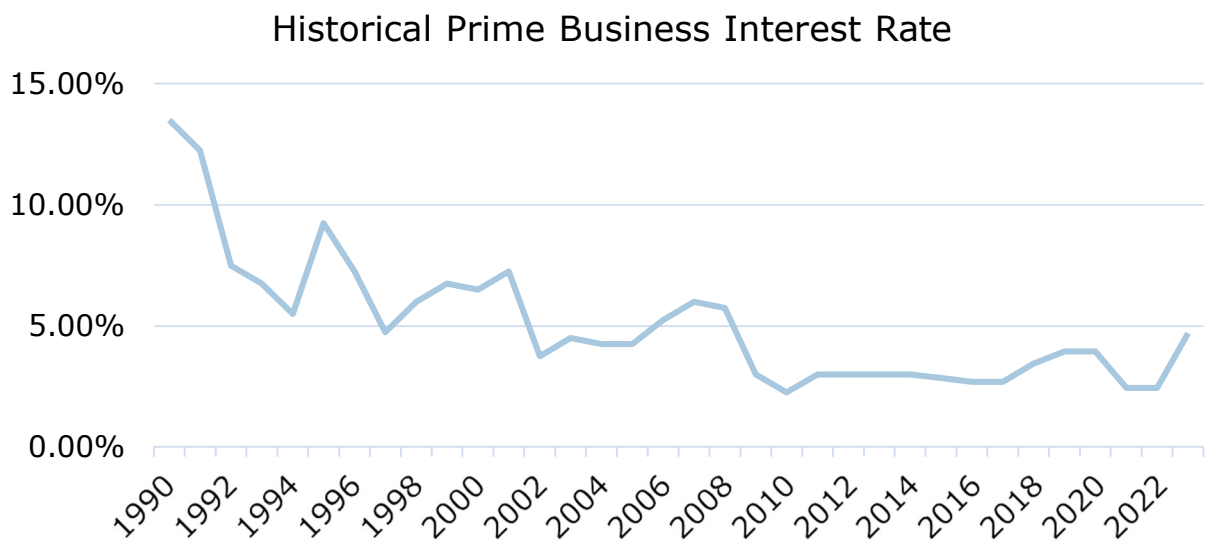
13.4 Use of Debt

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

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

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

Figure 78 Historical Prime Rate



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

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a $1 million project financed at 3.0%[32] over 15 years would result in a 26% premium or $260 thousand of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

Table 97 Interest Premiums Paid

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

[32] Current municipal Infrastructure Ontario rates for 15-year money is 4.03%.

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

The Township has not incurred any new debt within the last five years. As of year-end 2024, there is currently $332,506 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $154,700, well within its provincially prescribed maximum of $2.1 million.

Table 98 East Zorra-Tavistock Principal and Interest Payments

Asset Category	Principal & Interest Payments in the Next Ten Years					
	2024	2025	2026	2027	2028	2029
Road Network	$132k	$132k	$132k			
Stormwater Network	$38k	$38k	$38k	$22k	$13k	
Buildings	$22k	$22k	$22k	$22k	$22k	
TOTAL	**$193k**	**$193k**	**$193k**	**$44k**	**$35k**	

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

13.5 Use of Reserves

13.5.1 Available Reserves

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

- The ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
- Financing one-time or short-term investments
- Accumulating the funding for significant future infrastructure investments
- Managing the use of debt
- Normalizing infrastructure funding requirement

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

- Breadth of services provided
- Age and condition of infrastructure
- Use and level of debt
- Economic conditions and outlook
- Internal reserve and debt policies.

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

13.5.2 Recommendation

In 2025, Ontario Regulation 588/17 requires East Zorra-Tavistock to integrate proposed levels of service for all asset categories in its asset management plan update. We recommend that future planning should reflect adjustments to service levels and their impacts on reserve balances.

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

14 Recommendations & Key Considerations

14.1 Financial Strategies

- Review the feasibility of adopting a full-funding scenario to achieve 100% of average annual funding requirements necessary for the proposed levels of service outlined in Section 4. This includes increasing taxes by 0.5% per year over a period of five years.
- Continued allocation of OCIF and CCBF funding as previously outlined.
- Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- Reallocating debt payments when debt repayment has been achieved.
- Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
- Continue to apply for project specific grant funding to supplement sustainable funding sources.

14.2 Asset Data

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

used. Staff judgement and historical data can help attenuate extreme and temporary fluctuations in cost estimates and keep them realistic.

- Like replacement costs, an asset's established serviceable life can have dramatic impacts on all projections and analyses, including condition, long-range forecasting, and financial recommendations. Periodically reviewing and updating these values to better reflect in-field performance and staff judgement is recommended.
- Continue with condition assessments to maintain an updated inventory. Consider collecting any additional attributes that you may find useful to track in the future.
    - Condition assessment strategies are regularly conducted by municipal staff in an informal manner. The Township may consider conducting a formal Road Needs Study on a 5- to 7-year cycle to ensure the assessment information is accurate and to better inform lifecycle strategy decision-making.

14.3 Lifecycle Management Strategies

- Continue to execute OSIM inspections every 2 years and keep projected capital rehabilitation and renewal costs up to date.
- Require that all structural reports detail what is included and excluded in the costing estimates. As necessary, adjust the estimated costs of capital events (i.e., add in overhead if not included). Clarity on costing inclusions and exclusions will improve the accuracy of budget projections and asset management analysis.
- Currently, OSIM reports include recommendations for rehabilitations but do not report on expected impact to asset condition or age. Consider requiring inclusion of the anticipated impact either for all rehabilitations, certain types of rehabilitations (i.e., major rehabs) or for rehabilitations above an estimated cost threshold (i.e., more significant in nature).
- Review the process of actioning OSIM report identified maintenance requirements (i.e., creation of work orders etc.) to ensure that maintenance activities are completed.
- When procuring OSIM reports, require that inspection information be appended to the bridge's asset ID in the asset management software system. Consider providing the successful proponent an extract of asset IDs from the asset management software database. This will improve ease of updates to

and reduce risk of incorrect matching of OSIM report information to asset IDs.

- Ensure that capital budgets are developed with clear reference to identified asset capital requirements as driven by OSIM, alongside an understanding of asset risk and expected asset performance impacts from underfunded or delayed investment.
- Continue to update the inventory annually, to reflect the rehabilitation and replacement of assets as scheduled lifecycle activities. The scheduled lifecycle activity should contain the name of activity, impact (e.g., added EUL), time, and cost. Doing so will ensure that the road condition is accurate, and projected capital requirements more closely match the true lifecycle needs.
- When procuring external reports for any assets, particularly roads where there are many assets, require that reports be drafted based on the existing asset management software inventory listing and structure, that data is collected with reference to the Asset ID and that data is provided in an excel format so that data uploads, sync, and other asset data activities can be most effectively conducted.
- To avoid double counting road assets, clearly delineate between the original road asset and road rehabilitation events. This can be achieved by adding the road rehabilitation to the existing asset as a betterment, through naming conventions (i.e., indicating “Rehab” in the asset name), or by selecting "No AMP Category.” For all approaches, ensure that the original road asset condition is updated to reflect any rehabilitation activities that may have occurred to the asset.
- Identify stormwater assets that are most critical and prioritize CCTV assessments[33] to these assets first. As condition information is obtained, ensure it is updated in the asset management software so that it can be incorporated into lifecycle management decision making and planning.
- The Township may consider a phased stormwater main renewal program to proactively replace mains. This will mitigate the risk of large capital expenditure spikes in the long term as cohorts of pipes come up for

[33] CCTV inspections are a no-dig method of analyzing the physical condition of mains. Instruments capture video and images which are connected to a computer that feeds real-time information back to the operator and is stored for future reference. Collectable information includes identification of internal corrosion, determination of leak locations, identification of blockages (impacting flow), and general data collection to materially aid in the determination of reliable condition assessment ratings.

replacement. Phasing can be accomplished through utilizing CCTV results and established risk models.

- Review the cost of acquiring the identified valuable information for all stormwater assets against the expected benefit to determining if a larger data collection project is viable. To whatever extent data is collected, complete data updates to the asset management software with the collected and/or confirmed asset details.
- Evaluate the efficacy of the Township's lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk. This could be done by updating the condition assessment data whenever new data becomes available and rerunning the capital projections and risk reports.

14.4 Risk & Levels of Service

- Risk models and matrices can play an important role in identifying high-value assets, and developing an action plan which may include repair, rehabilitation, replacement, or further evaluation through condition assessments. As a result, project selection and the development of multi-year capital plans can become more strategic and objective. Initial models have been built into Citywide for all asset groups. These models reflect current data, which was limited. As the data evolves and new attribute information is obtained, these models should also be refined and updated.
- Available data on current performance should be centralized and tracked to support any calibration of service levels on proposed levels of service in the future.
- Staff should monitor evolving local, regional, and environmental trends to identify factors that may shape the demand and delivery of infrastructure programs. These can include population growth, and the nature of population growth; climate change and extreme weather events; and economic conditions and the local tax base. This data can also be used to review service level targets.
- Consider developing a plan to address accessibility deficits for buildings assets. Future considerations may involve retrofitting projects to address these issues comprehensively.

Appendices

Appendix A– Infrastructure Report Card

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Road Network	**$74.3 m**	**Good (74%)**	Annual Requirement:	$1.0m
			Funding Available:	$537k
			Annual Deficit:	$464k
Bridges & Culverts	**$65.1 m**	**Fair (58%)**	Annual Requirement:	$263k
			Funding Available:	$182k
			Annual Deficit:	$81k
Stormwater Network	**$13.1 m**	**Good (65%)**	Annual Requirement:	$221k
			Funding Available:	$199k
			Annual Deficit:	$23k
Buildings	**$12.6 m**	**Very Good (85%)**	Annual Requirement:	$483k
			Funding Available:	$521k
			Annual Deficit:	-($38k)
Land Improvements	**$1.3 m**	**Good (76%)**	Annual Requirement:	$87k
			Funding Available:	$0
			Annual Deficit:	$87k
Machinery & Equipment	**$1.2 m**	**Good (67%)**	Annual Requirement:	$232k
			Funding Available:	$114k
			Annual Deficit:	$118k
Furniture & Fixtures	**$609 k**	**Good (67%)**	Annual Requirement:	$52k
			Funding Available:	$114k
			Annual Deficit:	-

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Vehicles	**$4.2 m**	**Fair (66%)**	Annual Requirement:	$356k
			Funding Available:	$705k
			Annual Deficit:	-

Appendix B– 10-Year Capital Requirements

Bridges & Culverts										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Bridges	$64k	$14k	$6k	$13k	$37k	$28k	$43k	$17k	$59k	$47k
Guiderails	-	-	-	-	-	-	$157k	-	-	-
Minor Culverts	-	$27k	-	$96k	-	-	-	-	$457k	$51k
Structural Culverts	$130k	$47k	$94k	$45k	$45k	$45k	$288k	-	-	-
TOTAL	**$194k**	**$88k**	**$100k**	**$154k**	**$82k**	**$73k**	**$488k**	**$17k**	**$516k**	**$98k**

Road Network										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Curbs	-	-	-	-	-	-	-	-	-	-
Paved Roads	-	-	-	-	-	-	-	-	-	-
Sidewalks	$2.3m	$74k	$62k	$60k	$97k	$50k	$73k	$82k	$69k	$101k
Streetlights	-	-	$24k	-	-	-	$93k	-	-	-
TOTAL	**$2.3m**	**$74k**	**$86k**	**$60k**	**$97k**	**$50k**	**$166k**	**$82k**	**$69k**	**$101k**

Stormwater Network										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Catch Basins	-	-	-	-	-	-	-	-	-	-
Maintenance Holes	-	-	-	-	-	-	-	-	-	-
OGS Units	-	-	-	-	-	-	-	-	-	-
Storm Mains	-	-	-	-	-	-	-	-	-	-
Stormwater Management Facility	$250k	-	-	-	-	-	-	-	$580k	-
TOTAL	**$250k**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**$580k**	**-**

Buildings										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
89 Loveys	-	-	-	-	-	-	-	-	-	-
Arena	$5k	$14k	-	$22k	-	$480k	$111k	-	-	$716k
Hickson Firehall	-	-	-	$6k	-	$14k	$11k	-	-	$30k
Hickson Park	-	-	-	-	-	$7k	$2k	-	-	$77k
Hickson Shop	-	-	-	-	-	-	-	-	-	-
Innerkip Community Centre	-	$4k	-	-	$22k	-	$75k	$77k	-	-
Innerkip Firehall	-	-	-	$3k	-	$3k	$7k	-	-	$47k
Innerkip Park	-	-	-	-	-	$27k	$3k	-	-	$41k
Memorial Hall	$1k	-	-	$15k	-	$71k	$17k	-	-	$163k
Public Utilities Commission Building	-	-	-	-	-	-	$14k	-	-	$18k
Queen's Park	-	-	$4k	$4k	-	$17k	$49k	-	-	$34k
Tavistock Firehall	-	-	-	-	-	$14k	$6k	-	-	$80k

Buildings										
Tavistock Shop	-	-	-	-	-	$3k	$3k	-	-	$19k
TOTAL	**$6k**	**$18k**	**$6k**	**$50k**	**$22k**	**$636k**	**$298k**	**$77k**	**-**	**$1.2m**

Land Improvements										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
89 Loveys	-	-	-	-	-	-	-	-	-	-
Arena	-	-	-	-	-	-	$1k	-	-	$7k
Hickson Firehall	-	-	-	-	-	$1k	-	-	-	-
Hickson Park	-	-	-	-	-	-	$45k	$5k	$3k	$28k
Hickson Shop	-	-	-	-	-	-	-	-	-	$2k
Innerkip Firehall	-	-	-	-	-	$1k	-	-	-	$1k
Innerkip Park	-	-	$13k	-	-	-	$62k	$1k	-	$101k
Memorial Hall	-	-	-	-	-	-	$1k	-	-	-
Public Utilities Commission Building	-	-	-	-	-	-	-	-	-	-
Queen's Park	-	-	-	-	$4k	-	$70k	-	$6k	$306k
Stonegate Park	-	-	-	-	-	-	-	-	-	$52k
Stormwater Management Facility	-	-	-	-	-	-	-	-	-	-

Land Improvements										
Tavistock Firehall	-	-	-	-	-	-	-	-	-	$11k
Tavistock Shop	-	-	-	$13k	-	-	-	-	-	$27k
TOTAL	**-**	**-**	**$13k**	**$13k**	**$4k**	**$3k**	**$179k**	**$6k**	**$9k**	**$533k**

Machinery and Equipment										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
89 Loveys	-	-	$15k	$337k	-	-	$15k	$325k	-	$13k
Arena	-	$22k	$6k	$40k	-	$125k	-	$28k	$24k	$24k
East Zorra-Tavistock Office	$60k	$15k	$21k	-	$38k	$29k	$20k	$18k	$35k	$9k
Fire	-	$8k	-	-	-	$8k	-	-	$24k	$27k
Hickson Firehall	-	$2k	$1k	$8k	$27k	$73k	$30k	$13k	$7k	$29k
Hickson Park	-	-	$3k	-	-	-	-	$3k	-	-
Hickson Shop	-	-	-	-	$31k	-	-	-	-	-
Innerkip Community Centre	-	-	-	-	-	-	-	-	-	-
Innerkip Firehall	$6k	$19k	$5k	-	$53k	$8k	$25k	$22k	$6k	$14k
Innerkip Park	-	-	$4k	-	-	-	-	$4k	-	-
Memorial Hall	-	-	-	-	-	-	-	-	-	-
Public Works	-	-	-	$19k	-	-	-	-	$50k	-
Queen's Park	-	$2k	-	-	-	-	-	-	-	-

Machinery and Equipment										
Recreation	-	-	-	$22k	-	$5k	-	-	$22k	-
Tavistock Firehall	-	$2k	-	-	$57k	$2k	-	$13k	-	$78k
Tavistock Shop	-	$27k	$22k	-	$10k	$70k	$10k	$20k	$15k	$25k
TOTAL	**$66k**	**$99k**	**$78k**	**$425k**	**$215k**	**$322k**	**$100k**	**$446k**	**$183k**	**$217k**

Furniture and Fixtures										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
89 Loveys	-	-	-	-	-	-	-	-	$117k	$45k
Arena	-	$8k	-	$11k	-	$43k	$6k	$7k	$16k	$2k
East Zorra-Tavistock Office	$22k	$4k	$3k	-	$5k	-	$3k	$3k	$3k	$2k
Hickson Park	-	-	-	-	-	$6k	$11k	-	-	-
Innerkip Community Centre	-	-	-	-	-	-	$18k	-	$6k	-
Innerkip Park	-	-	-	-	-	-	-	-	-	$59k
Memorial Hall	-	$56k	-	$32k	-	-	-	-	-	-
Queen's Park	$5k	-	-	-	-	-	$22k	-	-	-
Tavistock Firehall	-	-	-	-	-	-	-	-	$7k	-
TOTAL	**$27k**	**$68k**	**$3k**	**$43k**	**$5k**	**$49k**	**$59k**	**$10k**	**$149k**	**$108k**

Vehicles										
Segment	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Fire	-	$157k	$251k	-	$30k	-	-	$51k	$796k	$80k
General	-	$34k	$90k	-	$89k	-	-	$83k	$42k	-
Public Works	$291k	$227k	-	$151k	$77k	-	$43k	$326k	$293k	$57k
Recreation	-	-	-	-	-	-	-	-	-	-
TOTAL	**$291k**	**$418k**	**$341k**	**$151k**	**$196k**	**-**	**$43k**	**$460k**	**$1.1m**	**$137k**

Appendix C– Level of Service Maps & Photos

Road Network Maps


Township of East Zorra-Tavistock
Road Network
Road Classes
Class 4
Class 5
Class 6
Innerkip
Hickson
Tavistock
0 1 2 3 km

Pavement Condition Examples

Figure 79: An example of a road (0405-01) in very good condition as of the last assessment date.

Figure 80: An example of a road (0479-00) in good condition as of the last assessment date.

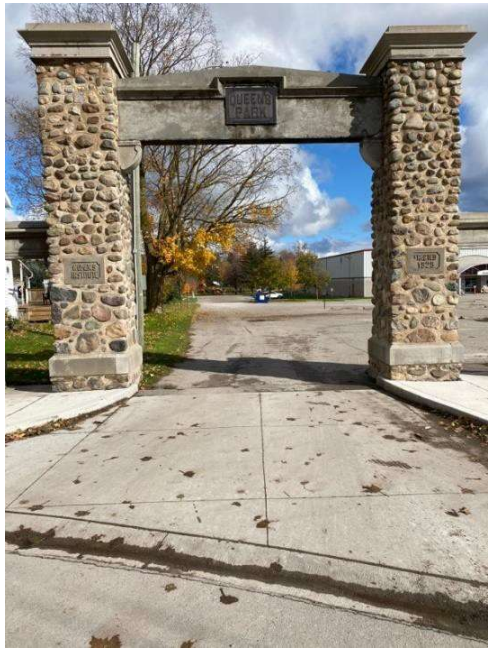
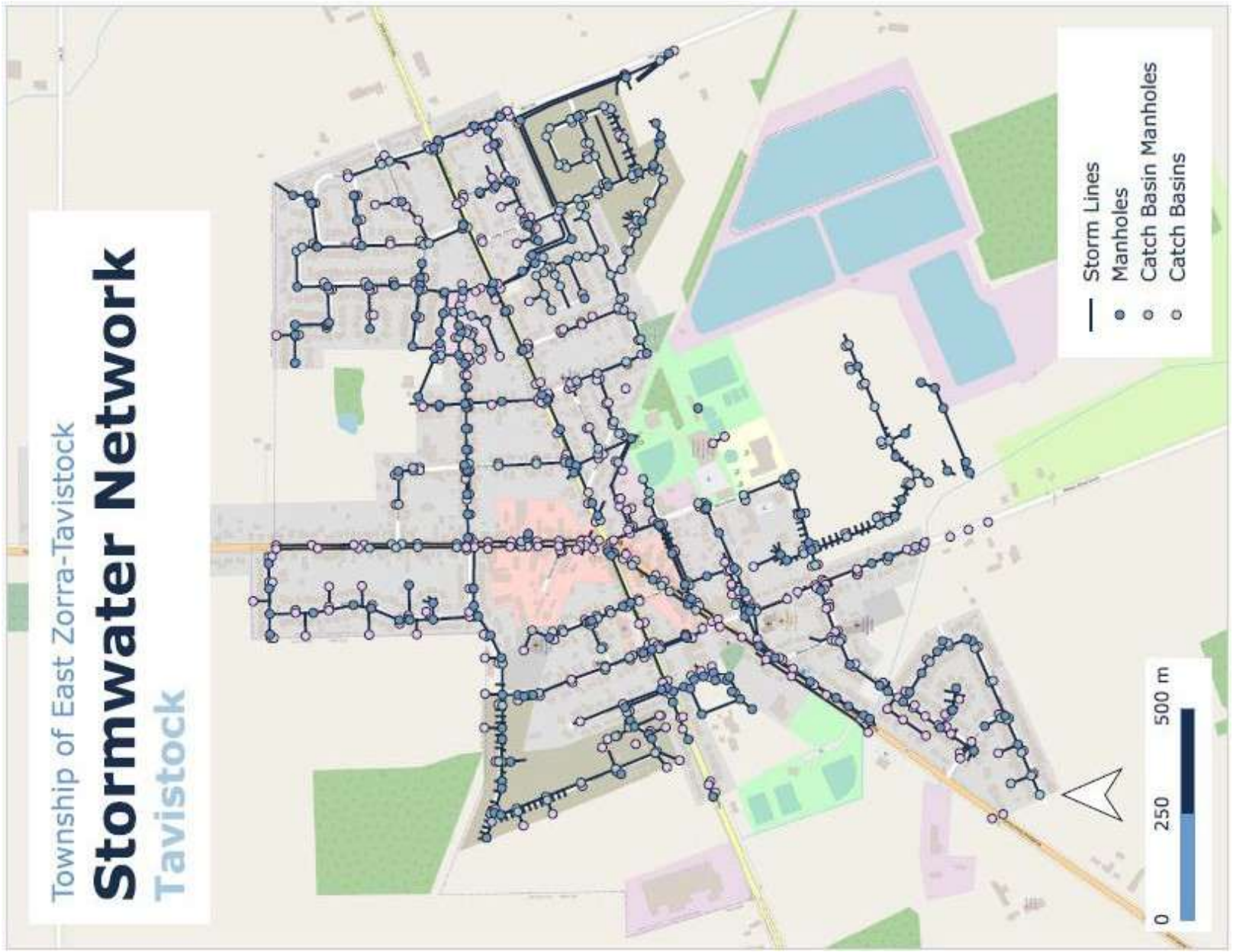


Figure 81: An example of a road (0457-01) in fair condition as of the last assessment date.

Stormwater Map


Township of East Zorra-Tavistock
Stormwater Network
Tavistock
Storm Lines
Manholes
Catch Basin Manholes
Catch Basins
0
250
500 m

Bridge Condition Images

Figure 82: Bridge on 10th Line In Fair Condition (40) as of last assessment date

Figure 83: Bridge on 14th line in Good Condition (60) as of last Assessment date

Figure 84: Bridge on 10th Line in Very Good condition as of last Assessment Date

Appendix D – Risk Rating Criteria

Probability of Failure

Asset Category	Asset Segments	Probability Attribute	Factor	Probability of Failure
Road Network	Paved and Unpaved Road Assets	PCI (75%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (25%)	20 years+	1—Rare
			10 – 19 years	2—Unlikely
			5 – 9 years	3—Possible
			1 – 4 years	4—Likely
			0 years	5—Almost Certain
	Road Appurtenances	Asset Condition (80%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (20%)	20 years+	1—Rare
			10 – 19 years	2—Unlikely
			5 – 9 years	3—Possible
			1 – 4 years	4—Likely
			0 years	5—Almost Certain

Asset Category	Asset Segments	Probability Attribute	Factor	Probability of Failure
Bridges & Culverts	Bridges & Structural Culverts	Asset Condition (70%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (30%)	20 years+	1—Rare
			10 – 19 years	2—Unlikely
			5 – 9 years	3—Possible
			1 – 4 years	4—Likely
			0 years	5—Almost Certain
	Small Diameter Culverts	Asset Condition (70%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Material (30%)	Concrete	1—Rare
			HDPE, PVC	2—Unlikely
			CSP	4—Likely

Asset Category	Asset Segments	Probability Attribute	Factor	Probability of Failure
Stormwater Network	Stormwater Assets (excluding stormwater mains)	Asset Condition (100%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
	Stormwater Mains	Asset Condition (50%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Asset Material (25%)	Concrete	1—Rare
			HDPE, PVC	3—Possible
		Slope (25%)	1-2%	1—Rare
			0.25-0.99%	3—Possible
			Less than 0.25%	5—Almost Certain
Buildings	All Assets	Asset Condition (60%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (40%)	20 years+	1—Rare
			10 – 19 years	2—Unlikely
			5 – 9 years	3—Possible
			1 – 4 years	4—Likely
			0 years	5—Almost Certain

Asset Category	Asset Segments	Probability Attribute	Factor	Probability of Failure
Vehicles	All Assets	Condition (50%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (50%)	10 years+	1—Rare
			5 – 9 years	2—Unlikely
			2 – 4 years	3—Possible
			1 year	4—Likely
			0 years	5—Almost Certain
Machinery & Equipment	All Assets	Condition (50%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (50%)	10 years+	1—Rare
			5 – 9 years	2—Unlikely
			2 – 4 years	3—Possible
			1 year	4—Likely
			0 years	5—Almost Certain

Asset Category	Asset Segments	Probability Attribute	Factor	Probability of Failure
Land Improvements	All Assets	Asset Condition (60%)	80 - 100	1—Rare
			60 - 79	2—Unlikely
			40 - 59	3—Possible
			20 - 39	4—Likely
			0 - 19	5—Almost Certain
		Service Life Remaining (40%)	20 years+	1—Rare
			10 – 19 years	2—Unlikely
			5 – 9 years	3—Possible
			1 – 4 years	4—Likely
			0 years	5—Almost Certain

Consequence of Failure

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Road Network	Paved Road Assets	Economic (33%)	Replacement Cost (60%)	$0 - $100,000	1—Insignificant
				$100,001 - $150,000	2—Minor
				$150,001 - $350,000	3—Moderate
				$350,001 - $2,500,000	4—Major
				$2,500,001+	5—Severe
				Rural	1 – Insignificant

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
			Roadside Environment (40%)	Urban	5 – Severe
		Operational (33%)	MMS Road Class (100%)	6	1—Insignificant
				5	2—Minor
				4	3—Moderate
				3	4—Major
		Social (33%)	AADT (2020) (100%)	0 - 50	1—Insignificant
				51 - 100	2—Minor
				101 - 150	3—Moderate
				151 - 200	4—Major
				201 - 250	5—Severe

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Road Network	Unpaved Road Assets	Economic (33%)	Replacement Cost (60%)	$0 - $50,000	1—Insignificant
				$50,001 - $100,000	2—Minor
				$100,001 - $150,000	3—Moderate
				$150,001 - $200,000	4—Major
				$200,001+	5—Severe
			Roadside Environment (40%)	Rural	1 – Insignificant
				Urban	5 – Severe
		Operational (33%)	MMS Road Class (100%)	6	1—Insignificant
				5	2—Minor
				4	3—Moderate
				3	4—Major
		Social (33%)	AADT (2020) (100%)	0 - 50	1—Insignificant
				51 - 100	2—Minor
				101 - 150	3—Moderate
				151 - 200	4—Major
				201 - 250	5—Severe
	Road Appurtenances	Economic (80%)	Replacement Cost (100%)	$0 - $10,000	1—Insignificant
				$10,001 - $50,000	2—Minor
				$50,001 - $100,000	3—Moderate
				$100,001 - $500,000	4—Major
				$500,001+	5—Severe
		Health and Safety (20%)	Segment (100%)	Curbs	1—Insignificant
				Sidewalks	2—Minor
				Streetlights	3—Moderate

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Bridges & Culverts	Bridges & Structural Culverts	Economic (30%)	Replacement Cost (100%)	$0 - $100,000	1—Insignificant
				$100,001 - $150,000	2—Minor
				$150,001 - $350,000	3—Moderate
				$350,001 - $2,500,000	4—Major
				$2,500,001+	5—Severe
		Operational (20%)	Crossing Type (100%)	Non-navigable water	1—Insignificant
				Navigable water	5—Severe
		Social (30%)	AADT (60%)	0 - 50	1—Insignificant
				51 - 100	2—Minor
				101 - 150	3—Moderate
				151 - 200	4—Major
				201 - 250	5—Severe
			Detour Distance (km) (40%)	Less than 1	1—Insignificant
				1 - 4	2—Minor
				5 - 9	3—Moderate
				10 - 14	4—Major
				15+	5—Severe
		Health and Safety (20%)	Speed Limit (km/h) (100%)	0 - 40	1—Insignificant
				41 - 50	2—Minor
				51 - 60	3—Moderate
				61 - 80	4—Major
				81+	5—Severe

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
		Economic (30%)	Replacement Cost (100%)	$0 - $5,000	1—Insignificant
				$5,001 - $25,000	2—Minor
				$25,001 - $100,000	3—Moderate
				$100,001 - $500,000	4—Major
				$500,001+	5—Severe
Bridges & Culverts	Small Diameter Culverts	Operational (40%)	Cumulative Diameter (mm) (100%)	0 - 300	1—Insignificant
				301 - 450	2—Minor
				451 - 525	3—Moderate
				526 - 900	4—Major
				901+	5—Severe
		Social (30%)	Culvert Type (100%)	Driveway	2—Minor
				Roadside	4—Major

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Stormwater Network	Stormwater Assets (excluding stormwater mains)	Economic (100%)	Replacement Cost (100%)	$0 - $5,000	1—Insignificant
				$5,001 - $20,000	2—Minor
				$20,001 - $50,000	3—Moderate
				$50,001 - $100,000	4—Major
				$100,001+	5—Severe
	Stormwater Mains	Economic (50%)	Replacement Cost (90%)	$0 - $5,000	1—Insignificant
				$5,001 - $25,000	2—Minor
				$25,001 - $100,000	3—Moderate
				$100,001 - $500,000	4—Major
				$500,001+	5—Severe
			Undersized Pipe (10%)	No	1—Insignificant
				Yes	5—Severe
		Operational (50%)	Pipe Diameter (mm) (100%)	0 - 200	1—Insignificant
				201 - 300	2—Minor
				301 - 450	3—Moderate
				451 - 525	4—Major
				526+	5—Severe

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Buildings	All Assets	Economic (50%)	Building Replacement Cost (75%)	$0 - $100,000	1—Insignificant
				$100,001 - $500,000	2—Minor
				$500,001 - $1,000,000	3—Moderate
				$1,000,001 - $3,000,000	4—Major
				$3,000,001+	5—Severe
			Component Replacement Cost (25%)	$0 - $5,000	1—Insignificant
				$5,001 - $25,000	2—Minor
				$25,001 - $100,000	3—Moderate
				$100,001 - $500,000	4—Major
				$500,001+	5—Severe
		Strategic (50%)	Department (100%)	Parks and Recreation, Building	1—Insignificant
				Public Works	3—Moderate
				Administration, Community Centre	4—Major
				Fire	5—Severe

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Vehicles	Fire Vehicles	Economic (75%)	Replacement Cost (50%)	$0 - $40,000	1—Insignificant
				$40,001 - $75,000	2—Minor
				$75,001 - $250,000	3—Moderate
				$250,001 - $350,000	4—Major
				$350,000+	5—Severe
			Vehicle Type (50%)	Light Duty	1—Insignificant
				Heavy Duty	4—Major
		Strategic (25%)	Segment (50%)	General	1—Insignificant
				Recreation	2—Minor
				Public Works	3—Moderate
				Fire	4—Major
			Truck Type (50%)	Rescue	3—Moderate
				Tanker, Pumper	5—Severe
	All Other Vehicles	Economic (75%)	Replacement Cost (50%)	$0 - $40,000	1—Insignificant
				$40,001 - $75,000	2—Minor
				$75,001 - $250,000	3—Moderate
				$250,001 - $350,000	4—Major
				$350,000+	5—Severe
			Vehicle Type (50%)	Light Duty	1—Insignificant
				Heavy Duty	4—Major
		Strategic (25%)	Segment (100%)	General	1—Insignificant
				Recreation	2—Minor
				Public Works	3—Moderate
				Fire	4—Major

Asset Category	Asset Segments	Consequence Type	Consequence Attribute	Factor	Consequence of Failure
Machinery & Equipment	All Assets	Economic (50%)	Replacement Cost (100%)	0 - $5,000	1—Insignificant
				$5,001 - $10,000	2—Minor
				$10,001 - $50,000	3—Moderate
				$50,001 - $150,000	4—Major
				$150,001+	5—Severe
		Strategic (50%)	Segment (100%)	General	1—Insignificant
				Recreation	2—Minor
				Public Works	3—Moderate
				Fire & Emergency Services	5—Severe
Land Improvements	All Assets	Economic (100%)	Replacement Cost (100%)	$0 - $5,000	1—Insignificant
				$5,001 - $25,000	2—Minor
				$25,001 - $100,000	3—Moderate
				$100,001 - $150,000	4—Major
				$150,001+	5—Severe

Appendix E – Data Quality Dimensions

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

1. **Accuracy:** The information collected reflects reality and can be confirmed with a verifiable source (i.e., VIN information). An example of accuracy not being met is the in-service year on record is 1950 and the asset model indicates a service year of 1980. Accurate reporting assists in powerful and trusted reporting.

2. **Completeness:** Data is comprehensively collected so that it can deliver meaningful inferences and effectively inform decisions. For example, required fields are populated for all assets.

3. **Consistency:** Data on the same asset is consistent across multiple sources if applicable. For example, information in the Asset Management System matches information in the finance system.

4. **Timeliness:** Data is available when it is needed. This often requires limited lag time between the event that generates the asset data (i.e., condition assessment) and the updates to the system to reflect the event.

5. **Validity:** Consistent data format that is supported by any associated standards or structures. For example, the asset in service date is consistently formatted YYYY-MM-DD and not sometimes YYYY-DD-MM and month value is never greater than 12.

6. **Uniqueness:** Each asset appears only once in the system and there is no data duplication or overlaps. For example, each asset has a unique asset ID, no duplication of asset information.