TOWNSHIP OF

GREATER MADAWASKA

Asset Management Plan

2025

Key Statistics

Replacement cost of asset portfolio

$55.67 million

Average Annual Tax Change

3.0%

Percentage of assets in fair or better condition

78%

Percentage of assets with assessed condition data

100%

Annual capital infrastructure deficit

$1.5 million

Recommended timeframe for eliminating annual infrastructure deficit

10 Years

Actual Reinvestment Rate

1.38%

Target Reinvestment Rate

4.13%

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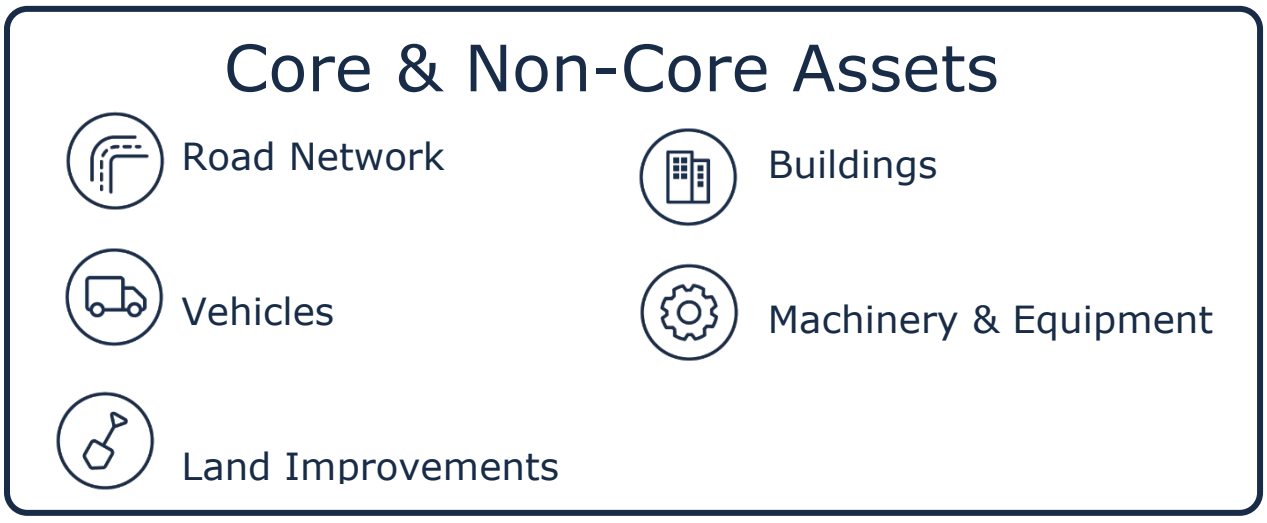
1. Executive Summary

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 in place for managing public infrastructure and provides recommendations for further refinement. Through the implementation of sound asset management strategies, the Township can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

This AMP includes Core and Non-Core asset categories:



1.2 O. Reg. 588/17 Compliance

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

1.3 Findings

The overall replacement cost of the asset categories included in this Asset Management Plan (AMP) totals $55.67 million. 78% of all assets analyzed in this AMP are in fair or better condition, and 100% of the assets have an assessed condition.

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

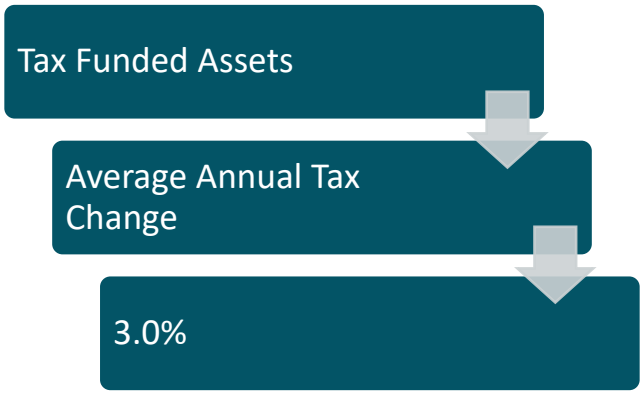
To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Township's average annual capital requirement totals $2.30 million. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $0.77 million per year towards capital projects or reserves. As a result, there is currently a $1.53 million annual funding gap.

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 Township's annual capital funding gap. The following graphics illustrate the annual tax increase

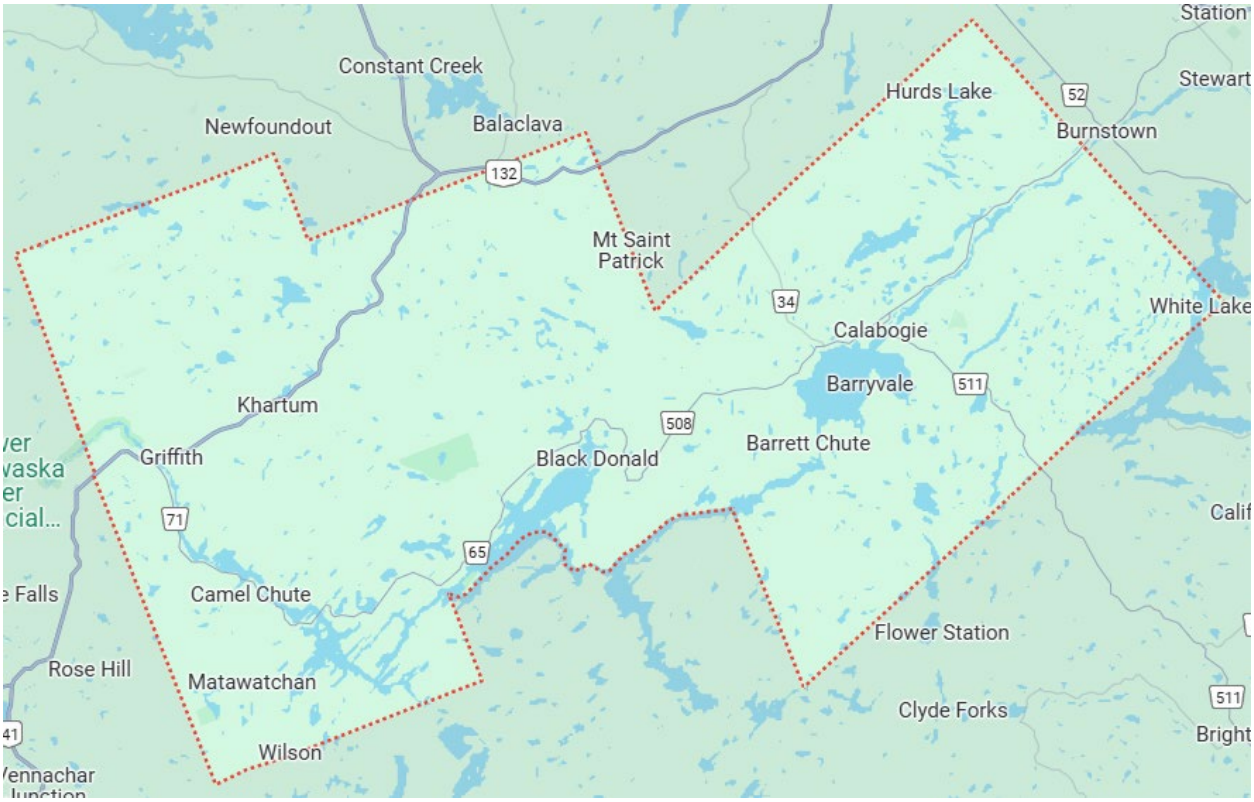
required to eliminate the Township's infrastructure deficit over a 10-year period.



Closing the infrastructure gap within 10 years is essential to avoid the risks associated with continued asset deterioration and escalating costs. Extending the timeline beyond a decade would result in higher lifecycle costs due to deferred maintenance, reduced service levels, and an increased risk of service disruptions or emergency repairs. A 10-year horizon strikes a balance between fiscal responsibility and long-term sustainability, enabling the Township to proactively manage its assets, stabilize future funding needs, and maintain safe, reliable services for the community.

2. Introduction & Context

2.1 Community Profile



The Township of Greater Madawaska is a rural municipality located in Renfrew County in Eastern Ontario. Formed in 2001 through the amalgamation of the former townships of Bagot and Blythfield, Brougham, and Griffith and Matawatchan, it spans approximately 1,000 square kilometres of scenic landscapes, including portions of the Madawaska River, Calabogie Lake, and the Canadian Shield.

Greater Madawaska is home to a population of approximately 2,900 permanent residents, with a significant seasonal population that increases during peak tourism months. The township includes several communities, with Calabogie serving as the largest settlement and a central hub for services, recreation, and development.

A mix of tourism, outdoor recreation, small businesses, forestry, and an emerging service sector drives the local economy. Attractions such as

extensive trail systems and four-season tourism opportunities contribute to the township's economic and cultural identity.

Greater Madawaska is committed to sustainable growth and service delivery, ensuring infrastructure assets are managed effectively to meet the evolving needs of residents and future generations.

2.2 Climate Change

Climate change is having significant impacts on both human and natural systems across Canada. Rising temperatures, shifting precipitation patterns, extreme weather events, droughts, and increased frequency of freeze-thaw cycles are already affecting communities like the Township of Greater Madawaska. According to Canada's Changing Climate Report (2019), Canada's average temperature increased by 1.7°C between 1948 and 2016—about twice the global rate. If emissions continue unabated, projections suggest a potential rise of up to 6.3°C by 2100. Precipitation has also increased by approximately 20% since 1948 and may increase by another 24% by the late 21st century, with some areas experiencing more frequent summer droughts.

For rural municipalities like Greater Madawaska, these climate shifts pose considerable risks to infrastructure, natural systems, and community well-being. Wildfires, ice storms, high winds, heavy rain, and temperature extremes may cause physical damage to assets, disrupt service delivery, and increase long-term maintenance costs. Municipalities must assess, plan, and adapt to mitigate these growing risks.

2.2.1 Greater Madawaska Climate Profile

The Township of Greater Madawaska is characterized by a rugged, forested landscape, a low-density population, and reliance on rural infrastructure systems. Climate projections indicate the following regional trends:

- Temperature Increases: Average annual temperatures are expected to rise steadily. By 2040, under high-emissions scenarios, average temperatures could be 2.5°C to 3.5°C higher than 1980–2010 baselines. By 2100, increases may exceed 5°C in the Ottawa Valley

- Precipitation Changes: Annual precipitation is expected to rise, but the pattern will be uneven. Intense rainfall events are expected to become more frequent, contributing to flash floods and increased erosion, while summer droughts may become more prevalent.
- Extreme Events: More frequent and severe storms, freeze-thaw cycles, and wildfire risks are anticipated, putting pressure on infrastructure, emergency response, and community resilience.

2.2.2 Impacts of Climate Change on Asset Management

Climate-related risks will affect the Township's ability to deliver consistent service levels. The main vulnerabilities include:

Road Network Infrastructure

- Road deterioration from frequent freeze-thaw cycles.
- Washouts, culvert failures, and erosion due to extreme rainfall.
- Increased maintenance demands and shorter asset life cycles.

Stormwater and Drainage Systems

- Overloaded systems during high-intensity precipitation events.
- Greater risk of localized flooding and erosion in underserviced areas.
- Need for better lot-level controls and naturalized drainage solutions.

Buildings & Facilities

- Increased cooling demands and energy costs.
- Risk of damage from storms, snow loads, and ice accumulation.
- Pressure to retrofit aging buildings for climate resilience and energy efficiency.

Parks, Trails, and Natural Assets

- Impacts on trail stability, forest health, and recreational space maintenance.
- Soil degradation and reduced water retention in natural areas.
- Biodiversity impacts due to shifting ecosystems and invasive species.

Equipment, Fleets, and Operations

- Rising fuel and energy costs.
- Need for more resilient, low-emission vehicles and equipment.
- Weather-related operational disruptions and increased emergency response requirements.

2.2.3 Adaptation and Integration into Asset Management

To support long-term sustainability and compliance with O. Reg. 588/17, the Township of Greater Madawaska will integrate climate change considerations into its asset management framework by:

Climate Risk Assessment

- Utilizing provincial and federal climate data to assess infrastructure vulnerabilities.
- Prioritizing high-risk infrastructure for monitoring and upgrades.

Climate-Resilient Design and Lifecycle Planning

- Factoring climate-related deterioration into lifecycle costing.
- Aligning capital planning with updated climate design standards where applicable.

Monitoring and Service Level Adjustments

- Defining climate-adjusted levels of service (LOS) to reflect increased operational demands.
- Establishing metrics for climate performance (e.g., flooding frequency, energy use).
- Incorporating resilience goals into capital project evaluations.

Funding and Partnerships

- Seeking funding from programs such as the FCM’s Green Municipal Fund.
- Collaborating with other municipalities, conservation authorities, and provincial agencies to share data, resources, and solutions.

2.2.4 Challenges and Opportunities

Challenges

- Limited budgets for major adaptation projects.
- Gaps in localized climate and asset vulnerability data.
- Technical and staffing capacity constraints.

Opportunities

- Long-term savings from avoided damage and service disruption.
- Support from provincial/federal adaptation programs.
- Public engagement opportunities to strengthen community resilience and awareness.

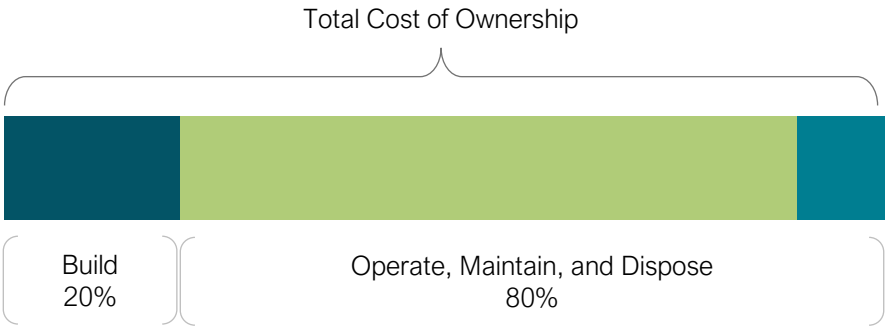
Conclusion

Climate change poses both risks and opportunities for the Township of Greater Madawaska. By integrating climate adaptation into its asset management practices, the Township can ensure its infrastructure is prepared for future conditions, maintain service levels, and support community sustainability. This approach will guide infrastructure investment, reduce long-term costs, and enhance overall resilience.

2.3 Asset Management Overview

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

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

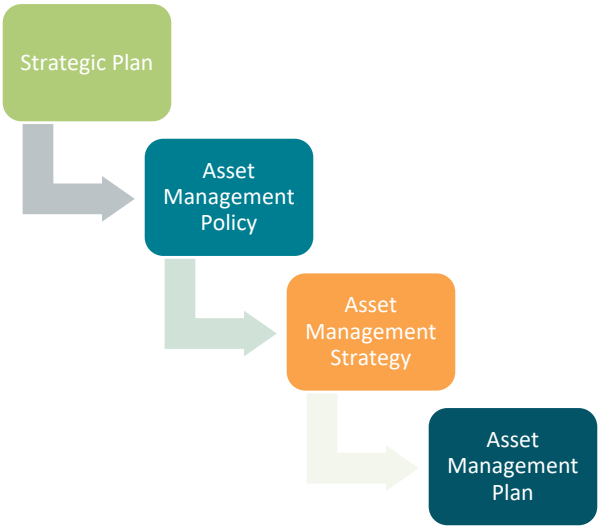


These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of a broader asset management program.

2.3.1 Foundational Asset Management Documentation

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

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.



Township Strategic Plan (2023-2026)

The Township of Greater Madawaska's Strategic Plan 2023–2026 provides a framework for decision-making, resource allocation, and community building over a four-year horizon. Rooted in extensive community consultation and Council leadership, the plan reflects the Township's values, priorities, and long-term vision for a thriving, resilient, and connected rural community. The Strategic Plan is built around four key strategic priorities:

1. Open Communication and Engagement
2. Growth Management
3. Culture & Wellness
4. Efficient & Effective Governance Delivery

At the core of all strategic priorities is a commitment to collaboration, inclusivity, and evidence-based planning.

Connection to the Township's 2025 Asset Management Plan

The 2025 Asset Management Plan (AMP) is a critical tool in implementing the Township's Strategic Plan. It ensures that Greater Madawaska's infrastructure and municipal assets are managed sustainably to meet the evolving needs of the community. The AMP enables data-driven decision-making and long-term financial planning, aligned with the Strategic Plan's priorities.

1. Infrastructure Investment & Renewal (Supports Strategic Priorities 1, 2, & 4)

- The AMP guides the renewal and maintenance of core infrastructure—including roads, bridges, and municipal facilities—to ensure safe and reliable service delivery.
- Infrastructure planning will incorporate climate resilience measures and environmentally sustainable practices to support long-term community needs.

2. Fiscal Sustainability & Transparent Governance (Supports Priority 4)

- The AMP supports responsible financial management by integrating lifecycle costing and risk-based asset planning into budget processes.
- Asset management will be aligned with multi-year capital planning to ensure accountability and strategic resource allocation.

3. Environmental Responsibility & Resilience (Supports Priority 2)

- The plan embeds environmental considerations into infrastructure decision-making, supporting low-impact development, green infrastructure, and sustainable stormwater management.
- Asset management strategies will help protect the Township's natural heritage and adapt to changing climate conditions.

4. Community Access & Equity (Supports Priority 1 & 3)

- The AMP prioritizes infrastructure that promotes accessibility, safety, and inclusivity across all age groups and abilities.
- Investments in parks, trails, and public facilities will reflect the Township's goal of improving community health and social connectedness.

5. Continuous Improvement & Engagement (Supports Priority 1 & 4)

- Ongoing performance measurement and public engagement will ensure transparency and adaptability in asset management practices.
- The AMP will evolve with community input, regulatory updates, and emerging needs to maintain alignment with the Township's strategic direction.

Conclusion

The 2025 Asset Management Plan translates the Township's Strategic Plan into actionable infrastructure strategies. By aligning asset management with the Township's priorities for community well-being, environmental

sustainability, and organizational excellence, the AMP will support long-term service delivery, fiscal health, and resilience. Together, the Strategic Plan and AMP position Greater Madawaska to grow responsibly while preserving its unique rural character and quality of life.

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 organization's strategic plan and provides clear direction to municipal staff on their roles and responsibilities as part of the asset management program.

The Township adopted Policy No. 4-07 "Strategic Asset Management" on June 17th, 2019, in accordance with Ontario Regulation 588/17.

The objectives of the policy include:

- Fiscal Responsibilities
- Delivery of Services/Programs
- Public Input/Council Direction
- Risk/Impact Mitigation

Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives, providing 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 necessary to achieve a defined level of service. The AMP typically includes the following content:

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

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

2.3.2 Key Concepts in Asset Management

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

Lifecycle Management Strategies

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

To ensure that municipal assets perform as expected and meet customer needs, it is essential to establish a proactive lifecycle management strategy to mitigate asset deterioration.

Several field intervention activities are available to extend the life of an asset. These activities can be generally categorized into three categories: maintenance, rehabilitation, and replacement. The following table provides a description of each type of activity and outlines the general cost differences.

Lifecycle Activity	Typical Associated Risks	Cost
Maintenance Activities that prevent defects or deteriorations from occurring	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions. • Diminishing returns are associated with excessive maintenance activities, despite added costs. • The 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 eventually when assessed against full reconstruction or replacement. • Loss or disruption of service, particularly for underground assets.	$$
Replacement/ Reconstruction Asset end-of-life activities that often involve the complete replacement of assets	• Incorrect or unsafe disposal of existing assets. • Costs associated with asset retirement obligations. • Substantial exposure to high inflation and cost overruns. • Replacements may not meet capacity needs for a larger population. • Loss or disruption of service, particularly for underground assets.	$$$

Depending on the initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation; however, 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.

The Township's approach to lifecycle management is described within each asset category outlined in this AMP. Developing and implementing a proactive lifecycle strategy will help staff determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

Risk & Criticality

Asset risk and criticality are essential building blocks of asset management, integral in prioritizing projects and distributing funds where they are needed most based on a variety of factors. Assets in disrepair may fail to perform their intended function, pose a substantial risk to the community, lead to unplanned expenditures, and create liability for the municipality. In addition, some assets are simply more important to the community than others, based on their financial significance, their role in delivering essential services, the impact of their failure on public health and safety, and the extent to which they support a high quality of life for community stakeholders. Failure to properly assess and manage these risks may also expose the municipality to legal liability, particularly if negligence in maintaining critical infrastructure leads to harm or service disruptions.

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.

The approach used in this AMP relies on a quantitative measurement of risk associated with each asset. The probability and consequence of failure are each scored from 1 to 5, producing a minimum risk index of 1 for the lowest risk assets and a maximum risk index of 25 for the highest risk assets.

Probability of Failure

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

Consequence of Failure

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

The table below 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.

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.

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 or years to emerge, and may persist for even longer.
Socio-political	Socio-political impacts are more difficult to quantify and may include inconvenience to the public and key community stakeholders, adverse media coverage, and reputational damage to the community and the Municipality.
Environmental	Environmental consequences can include pollution, erosion, sedimentation, habitat damage, etc.
Public Health & Safety	Adverse health and safety impacts may include injury or death, damage to property, or impeded access to critical services.

Strategic	These include the effects of an asset's failure on the community's long-term strategic objectives, including economic development, business attraction, etc.
Legal Liability	These include the financial and reputational impact of lawsuits, fines, and compensation claims resulting from asset failure, which could strain municipal resources and hinder the achievement of broader community objectives.

These models have been built in Citywide (an asset management software) for continued review, updates, and refinements. Appendix C – Risk Rating Criteria provides a detailed breakdown of the risk rating criteria, organized by category, used in this Assessment and Management Plan (AMP).

Levels of Service

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

These measures include a combination of those outlined in O. Reg. 588/17, as well as performance measures identified by the Township as worth measuring and evaluating. 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 (roads, bridges and culverts, stormwater) the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core asset categories, the Township has

determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

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

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

Current and Proposed Levels of Service

This AMP focuses on evaluating the current level of service provided to the community. Existing service levels serve as a benchmark for establishing realistic and achievable service targets over the next 10 years, in compliance with O.Reg. 588/17.

The proposed levels of service are designed to balance community expectations, financial capacity, regulatory requirements, corporate goals, and long-term sustainability. To support the development of the Levels of Service Framework, a comprehensive review of strategic documents was conducted.

Levels of Service Framework

The Levels of Service Framework is a structured approach designed to define, assess, and prioritize municipal service expectations. It ensures alignment with the Township's strategic objectives, operational capacity, and community needs.

Strategic Alignment

The framework is grounded in key strategic plans that outline infrastructure priorities, service expectations, and long-term sustainability goals.

Defining Levels of Service

A structured methodology identifies service areas requiring improvement and establishes clear distinctions between:

- Acceptable levels of service (baseline requirements)
- Excellent levels of service (enhanced performance targets)

Levels of Service Reporting

To ensure accountability and transparency, a reporting structure is developed that defines:

- Responsible departments for service tracking
- Reporting methodology for performance measurement
- Reporting frequency to monitor trends over time

Impact-Based Prioritization

Service areas are prioritized based on the risk of failing to meet acceptable standards. The framework evaluates five key impact areas:

- Environmental (e.g., erosion control, flood prevention)
- Operational (e.g., service reliability, efficiency)
- Health & Safety (e.g., emergency access, road safety)
- Financial (e.g., maintenance costs, capital planning)
- Community Satisfaction (e.g., accessibility, public expectations)

Levels of Service Treatment Options

A structured process is applied to evaluate and implement service improvements:

- Baseline Analysis – Assessing current service levels

- Risk Assessment – Identifying critical service gaps
- Scenario Analysis – Projecting potential service outcomes
- Implementation Planning – Developing cost-effective solutions

Public Engagement & Community Feedback

The Community Levels of Service Survey (December 2024 – January 2025) collected feedback on service priorities, satisfaction levels, and willingness to support improvements. This public engagement initiative ensures that municipal decisions align with community expectations and regulatory requirements.

Integration with Asset Management Planning

The framework supports long-term infrastructure investment by balancing cost, risk, and performance, ensuring sustainable service delivery in compliance with O.Reg. 588/17.

This structured approach enables the Township of Greater Madawaska to effectively evaluate, prioritize, and enhance service levels, promoting transparency, efficiency, and alignment with community needs.

2.4 Scope and Methodology

2.4.1 Asset Categories for this AMP

This asset management plan for the Township of Greater Madawaska is produced in compliance with Ontario Regulation 588/17, which requires analysis of both core and non-core asset categories.

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

Asset Category	Source of Funding
Road Network	Tax Levy
Buildings	
Vehicles	
Machinery & Equipment	
Land Improvements	

2.4.2 Data Effective Date

It is important to note that this plan is based on data as of May 31, 2025; therefore, it represents a snapshot in time utilizing the best available processes, data, and information at the Municipality. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.4.3 Deriving Replacement Costs

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

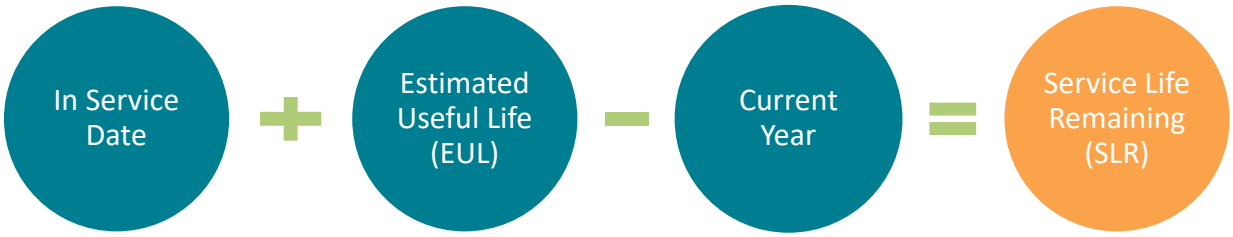
- **User-Defined Cost and Cost/Unit**: Based on costs provided by municipal staff, which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience.
- **Cost Inflation/CPI Tables**: Historical cost of the asset is inflated based on the Consumer Price Index or the Non-Residential Building Construction Price Index.

User-defined costs based on reliable sources are a reasonably accurate and reliable method for determining 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 incurred by the Township. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.4.4 Estimated Useful Life and 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.

In contrast, the service life remaining (SLR) indicates how much of the EUL is left at a given point in time, calculated primarily based on the asset's age. However, when additional data is available, factors such as condition assessments and actual usage patterns can be incorporated to refine the estimate, providing a more accurate forecast of when the asset may require replacement. This allows for a proactive approach to asset management, ensuring timely interventions and optimal resource allocation. The SLR is calculated as follows:

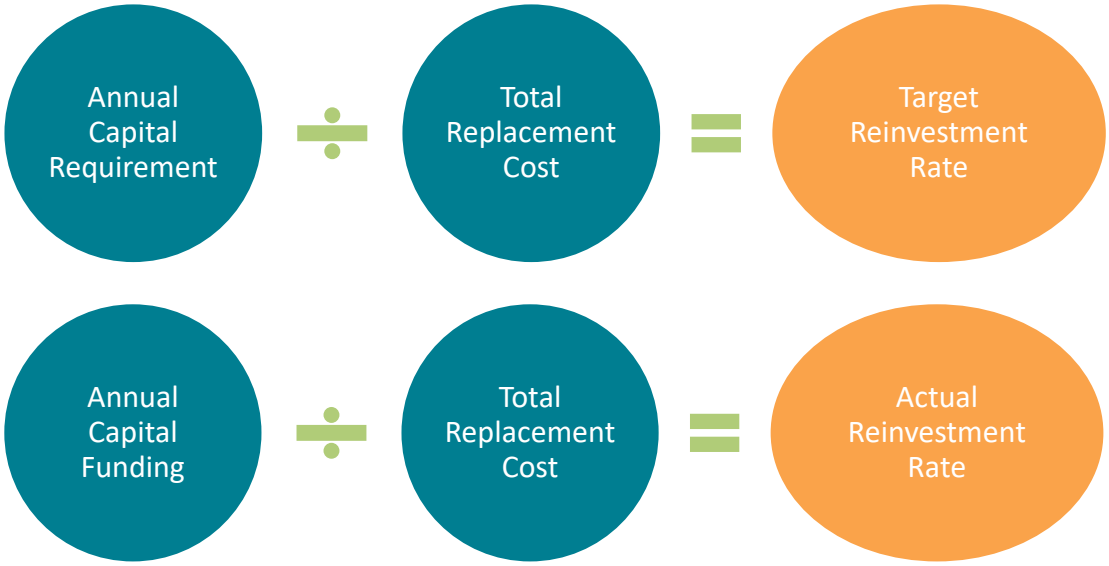


2.4.5 Reinvestment Rate

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

The actual reinvestment rate represents the percentage of the asset portfolio's total replacement cost that the Township is currently investing in renewal or replacement on an annual basis. The target reinvestment rate reflects the percentage that should be invested each year to ensure assets are maintained at an appropriate condition level, considering lifecycle needs and long-term sustainability.

By comparing the actual vs. target reinvestment rate, the Township can determine the extent of any existing funding gap and assess whether current investment levels are sufficient to prevent infrastructure deficits. The reinvestment rate is calculated as follows:



2.4.6 Deriving Asset Condition

An incomplete or limited understanding of asset condition can mislead long-term planning and decision-making. Accurate and reliable condition data helps prevent premature and costly rehabilitation or replacement, ensuring 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.

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. Appendix E includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

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

Condition vs. Suitability

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

For example, the Township Office Facility may be in good condition with sufficient service life remaining, but it only has office space for 15 employees. If the municipality requires office space for 30 employees, solutions should be considered which may include replacement, among other alternatives such as secondary office space, remote work options, etc. As these considerations are nuanced for the specific asset, suitability factors may not be directly addressed in this Asset Management Plan.

2.5 Ontario Regulation 588/17

As part of the *Infrastructure for Jobs and Prosperity Act, 2015*, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17). Along with creating better-performing organizations and more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service, as well as the lifecycle costs incurred in delivering them.

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

2022 CORE Assets	2024 ALL Assets	2025 ALL Categories
• Current levels of service • Inventory analysis • Lifecycle activities to sustain LOS • Cost of lifecycle activities • Population and employment forecasts • Discussion of growth impacts	• Asset Management Plan for Core and Non-Core Assets (same components as 2022) and Asset Management Policy Update	• Proposed levels of service for next 10 years • Updated inventory analysis • Lifecycle management strategy • Financial strategy and addressing shortfalls • Discussion of how growth assumptions impacted lifecycle and financial

2.5.1 O. Reg. 588/17 Compliance Review

Ontario Regulation 588/17 - Asset Management Planning for Municipal Infrastructure establishes mandatory requirements for municipalities to develop and maintain asset management plans that align with regulatory timelines. The regulation emphasizes the importance of evaluating and documenting both current and proposed levels of service while ensuring that municipalities adopt long-term lifecycle and financial strategies to support infrastructure sustainability.

The Township of Greater Madawaska's 2025 Asset Management Plan has been prepared in full compliance with the July 1, 2025, regulatory deadline, ensuring that all required components are included. This section provides an overview of compliance with the key regulatory requirements.

Portfolio Overview – State of the Infrastructure

The state of the infrastructure (SOTI) analysis in this AMP includes:

- A detailed inventory of core and non-core asset categories.
- Condition assessment data and, where unavailable, age-based estimates as a proxy.

- Replacement cost estimates using the latest available data.
- Asset hierarchy and classification structures to support strategic decision making.

This ensures compliance with O. Reg. 588/17's requirements for asset inventory documentation.

Current & Proposed Levels of Service

The AMP evaluates current levels of service (LOS) across all asset categories, measuring both:

- Community Levels of Service (CLOS): Qualitative descriptions of how infrastructure assets contribute to service delivery.
- Technical Levels of Service (TLOS): Quantitative metrics such as asset condition, reinvestment rates, and regulatory compliance.

For core assets, including roads, bridges, structural culverts, and stormwater infrastructure, the AMP provides both regulatory-mandated technical metrics and additional performance indicators tailored to the Township's needs.

The proposed levels of service reflect a balance between:

- Community expectations and feedback from public engagement.
- Financial capacity and sustainable funding strategies.
- Risk assessments and long-term infrastructure planning.

This meets O. Reg. 588/17's requirement for municipalities to establish target service levels for the next 10 years and outline a path to achieving them.

Lifecycle Management Strategies

The AMP outlines asset lifecycle strategies to extend asset service life and optimize costs. This includes:

- Preventive maintenance strategies for key assets.
- Rehabilitation and renewal schedules based on asset deterioration models.
- Integration of condition assessment data into decision-making.

By documenting these lifecycle strategies, the Township ensures compliance with the requirement to analyze and optimize asset lifecycle costs.

Financial Strategy & Sustainable Funding

The financial strategy evaluates:

- The total annual capital reinvestment required ($2.30M).
- The current reinvestment rate (1.38%) highlights an existing funding gap.
- Funding strategy to close the gap and ensure long-term sustainability.

The Township's AMP includes a structured approach to financial planning, ensuring that funding needs align with service expectations. This satisfies the requirement to establish a financial strategy that supports the sustainability of infrastructure.

Risk & Climate Change Considerations

The AMP integrates risk-based asset management by:

- Conducting a risk assessment that prioritizes critical assets.
- Identifying climate-related risks (e.g., flood resilience, extreme weather events).
- Recommending adaptation strategies to mitigate infrastructure vulnerabilities.

This aligns with the requirement under O. Reg. 588/17 to consider risk and climate change impacts in asset planning.

The Township's 2025 AMP has been developed in accordance with O. Reg. 588/17 requirements. It provides a comprehensive evaluation of infrastructure conditions, proposed levels of service, lifecycle strategies, financial planning, and risk considerations. Through this plan, the Township ensures compliance while adopting best practices for asset management and long-term sustainability.

3. Portfolio Overview State of the Infrastructure

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

3.1 Asset Hierarchy & Data Classification

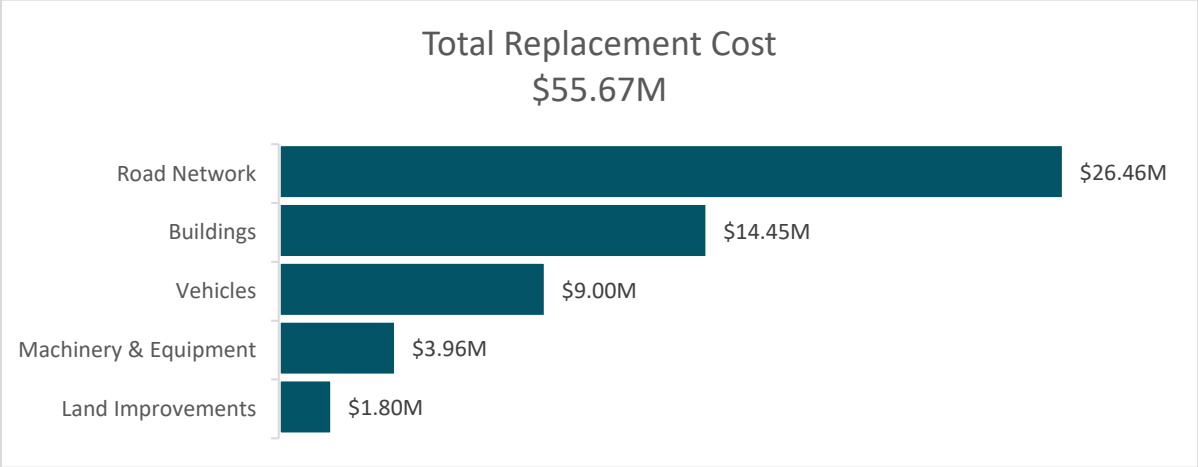
The asset hierarchy explains the relationship between individual assets and their components, as well as a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and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

Road Network & Culverts	• Road Infrastructure • Sidewalks • Culverts
Buildings & Facilities	• Fire Services • Public Works • Environmental Services • Recreational Services
Vehicles	• Fire Services • Public Works • Environmental Services • Recreational Services
Machinery & Equipment	• Fire Services • Public Works • Environmental Services • Recreational Services
Land Improvements	• Parks • Trails • Parking lots

3.2 Portfolio Overview

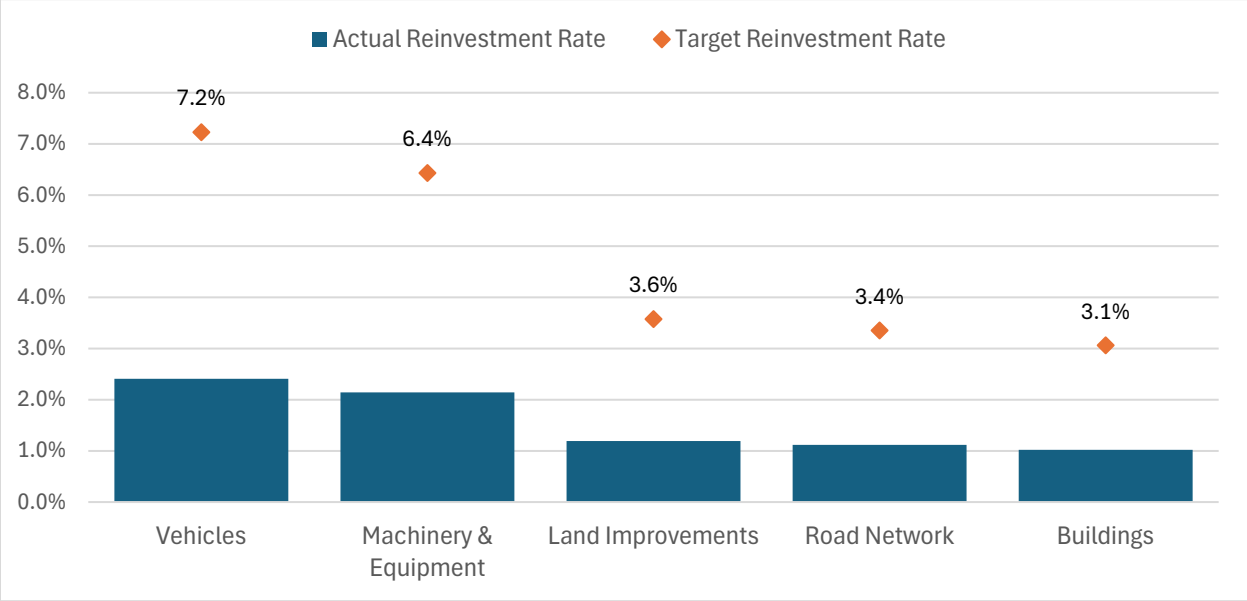
3.2.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this Asset Management Plan (AMP) have a total replacement cost of $55.67 million, based on inventory data as of 2025. This estimate was calculated using a combination of user-defined costs and unit costs. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today.



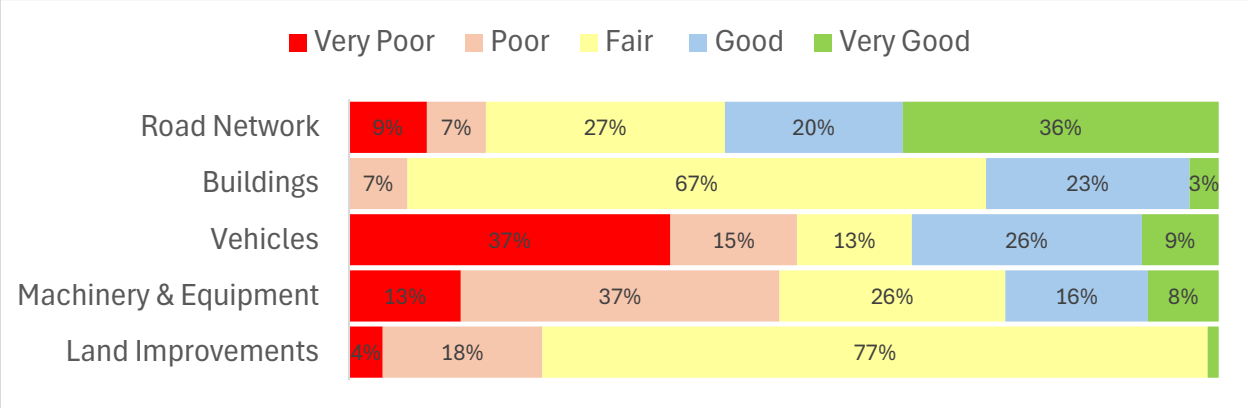
3.2.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing the target vs the actual reinvestment rate. To meet the long-term replacement needs, the Township should allocate approximately $2.30 million annually for a target reinvestment rate of 4.13%. The actual annual contribution to infrastructure totals approximately $0.76 million, resulting in an actual reinvestment rate of 1.38%.



3.2.3 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 78% of assets in Greater Madawaska are in fair or better condition. This estimate relies on field condition data.



This AMP relies on assessed condition data for 100% of assets. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	All	100%	Staff Assessments and Streetlogix
Buildings	All	100%	Staff Assessments
Machinery & Equipment	All	100%	Staff Assessments
Vehicles	All	100%	Staff Assessments
Land Improvements	All	100%	Staff Assessments

3.2.4 Risk Matrix

Using the risk equation and preliminary risk models, the figure below illustrates how assets across various asset categories are stratified within a risk matrix.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	Low	Moderate	High	Very High
$31,875,508	$8,584,000	$7,841,000	$4,810,000	$2,560,000
57%	15%	14%	9%	5%

The analysis shows that based on current risk models, approximately 5% of the Township's assets, with a current replacement cost of approximately $2.56 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates, and were considered to be most essential to the Township.

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

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

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

3.2.5 Forecasted Capital Requirements

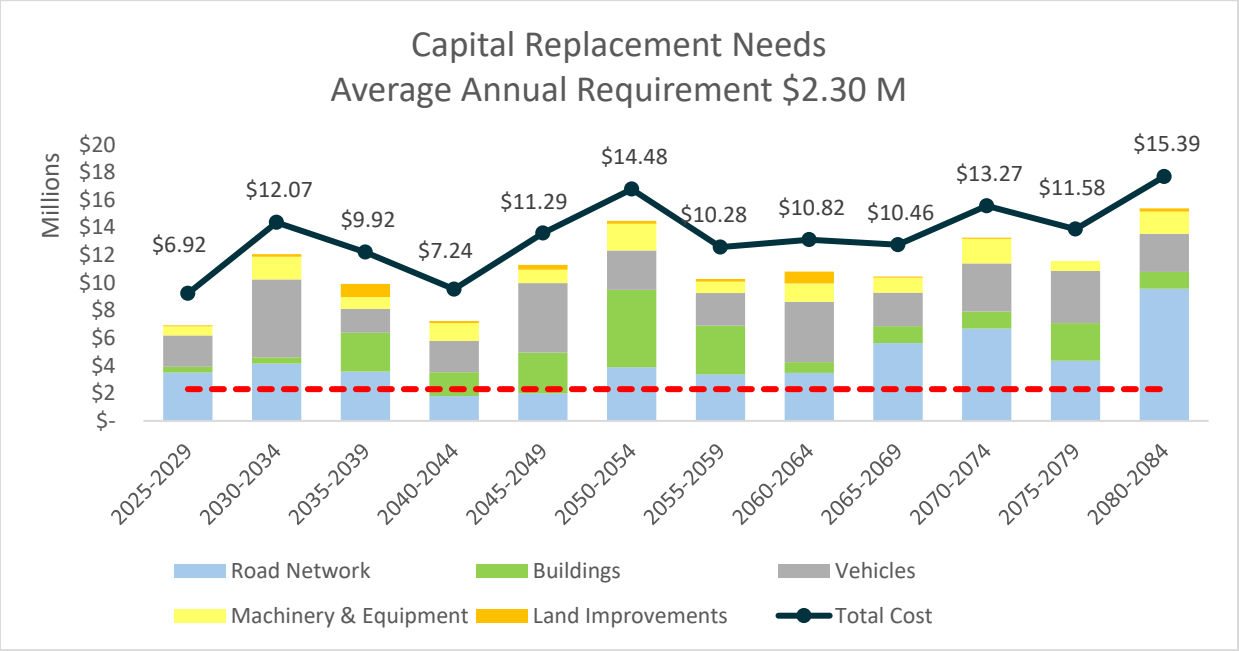
Aging infrastructure assets require ongoing maintenance, rehabilitation, and eventual replacement. The figure below illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements across all asset categories analyzed in this AMP over a 60-year time horizon.

On average, approximately $2.30 million is required annually to remain current with capital replacement needs for the Township's asset portfolio (as indicated by the red-dotted line in the chart below). This benchmark serves as a guide for setting annual capital expenditure targets or allocating funds to reserves to prevent deferred maintenance and ensure timely asset replacement. While actual spending may fluctuate significantly due to varying infrastructure renewal cycles, this figure provides a reference point for sustainable financial planning.

The forecasted capital requirements show periods of heightened investment needs. Road networks account for the majority of capital expenditures, with other infrastructure categories contributing smaller portions. The analysis relies on asset age and available condition data to project future needs,

highlighting the importance of proactive asset management strategies to smooth funding requirements and prevent financial strain during peak investment periods.

A proactive approach incorporating risk frameworks, lifecycle strategies, and levels of service targets will allow for more effective prioritization of projects and refinement of both backlog and long-term capital needs. Additionally, improved asset segmentation, particularly in complex asset categories such as buildings and facilities, will enhance forecasting accuracy and support data-driven investment decisions.



Public Engagement & Community Feedback

Public feedback from the engagement process revealed a strong emphasis on road infrastructure, which is consistent with its high visibility and daily use compared to other asset types such as municipal buildings, machinery, and vehicles.

Key findings include:

- Road maintenance emerged as the top concern, with 68.61% of respondents indicating it requires improvement.

- While 65.1% of respondents were satisfied with pavement conditions, a notable 34.9% expressed dissatisfaction, highlighting room for improvement.
- 89.05% of participants prioritized funding for streets and township roads, reinforcing their significance to the community.
- A majority (55%) supported maintaining current levels of service for roads while also recognizing the need to address the infrastructure gap.
- When asked about funding, 69.93% were willing to pay increased taxes to preserve current asset conditions. In contrast, 20.28% were willing to use assets in poorer conditions, and only 9.79% preferred reducing service levels.
- The presence of neutral responses suggests a gap in public understanding of funding needs and the long-term impacts of infrastructure investments, underscoring the importance of improved communication and education on these issues.

Overall, the results clearly indicate that residents place a high value on road infrastructure and are generally supportive of measures to ensure its long-term sustainability.

Core Assets

4. Road Network

The Township's Road Infrastructure inventory is managed in CityWide™ and comprises of about 98.05 kilometres of paved, 132 kilometers of unpaved roads and one (1) culvert.

The Public Works Department, along with supporting assets such as facilities, vehicles, and machinery and equipment, is responsible for planning and managing road infrastructure. The department's road network operational maintenance includes patching, grading, sweeping, ditching, as well as winter control activities such as sanding, salting, and plowing.

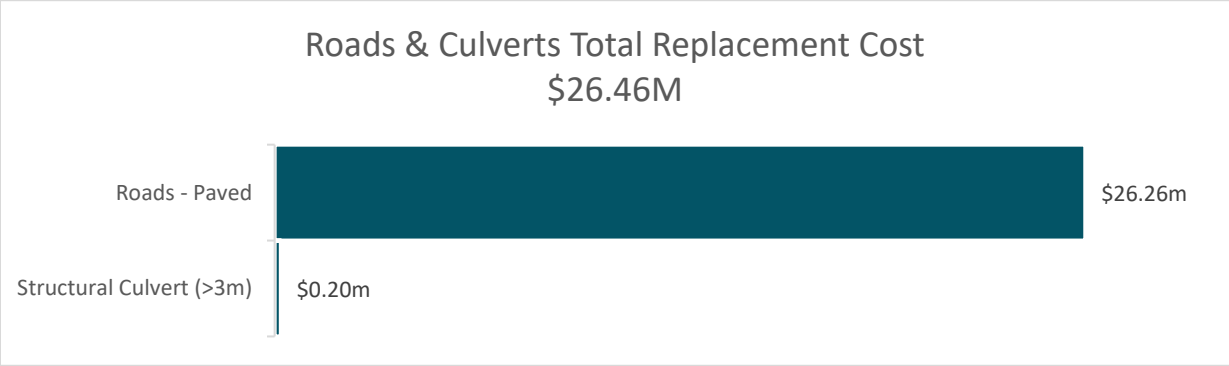
The Public Works Department is responsible for the construction of major roadways, maintenance, and rehabilitation activities, including crack sealing, asphalt resurfacing, curb and sidewalk repair and replacement, and reconstruction.

4.1 Inventory & Valuation

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township's Road network inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Culverts	1	$199,180	$13,279
Roads – Paved	98.05 (kms)	$26,264,319	$874,805

Roads – Unpaved	132.08 (kms)	Not Planned for Replacement[1]	N/A
Total		**$26,463,499**	**$888,084**



Each asset's replacement cost is reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

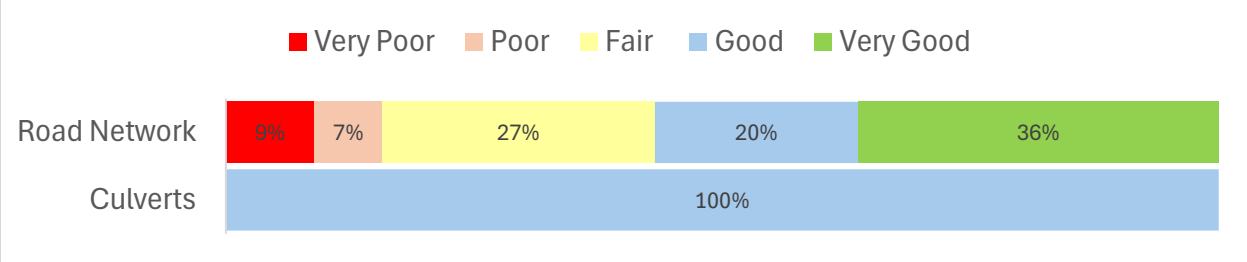
4.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

[1] Gravel roads undergo perpetual operating and maintenance activities. If maintained properly, they can theoretically have a limitless service life.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Culverts	25	5.3	Good (75%)
Roads - Paved	15-25	16.0	Good (67%)
		15.8	**Good (63%)**

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



To ensure that the Township's Road network continues to provide an acceptable level of service, the Municipality should monitor the average condition of all assets. If the average condition declines, staff re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation, and replacement activities is required to increase the overall condition of the roads.

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

Current Approach to Condition Assessment

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

- Monthly road patrols are completed by internal staff, providing a qualitative condition of good, very good, etc.
- A street scan study was completed in 2021 to provide a condition assessment by external contractors. Township staff plan to continue conducting external condition assessments on the road network every 5 years.

As gravel roads are graded regularly through operating maintenance, these roads are always one grading operation away from a condition assessment of very good. These roads, on average, have a condition of good, with some noticeable amount of roughness, as these types of roads are inherently rough.

4.3 Current and Proposed Approach to Lifecycle Management

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

4.3.1 Current Lifecycle Management Strategy

The following table provides an overview of maintenance and inspection activities for road network assets.

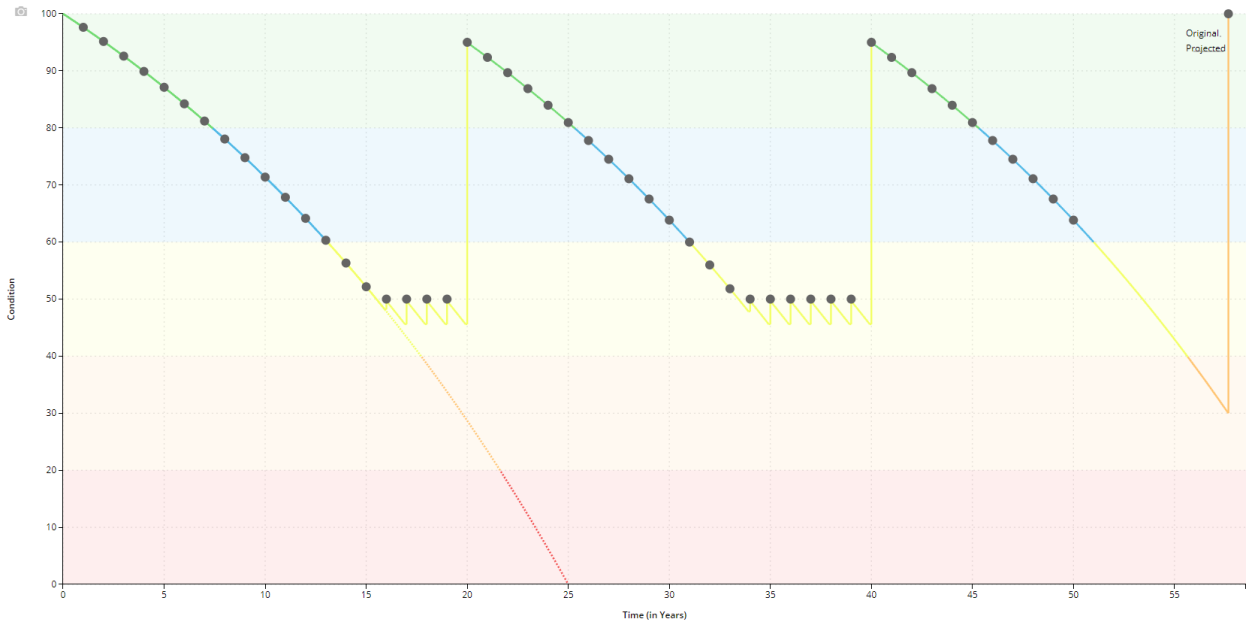
Activity Type	Description of Current Strategy
Maintenance	The Township employs preventative maintenance programs to minimize the destructive impact of climate and traffic through the timely application of remedial treatments to the pavement. Asphalt Roads – The crack sealing program, which is budgeted for annually, includes crack sealing/filling and spot base repairs (small area patching) Surface Treatment Roads – small area patching and drainage improvements
Rehabilitation/ Replacement	The most cost-effective expenditures for road rehabilitation can be achieved through the application of the right rehabilitation at the right time. This decision-making process relies primarily on the condition of the road surface. The Township's current road rehabilitation methods include: • Grind and Overlay • Full surface replacement • Full reconstruction Full road reconstruction may be required when substantial base repairs are necessary or when sub-surface infrastructure also requires replacement. The Township develops a 10-year capital forecast, which includes a mix of named reconstruction projects and general budget allocations for road resurfacing projects.

4.3.2 Proposed Lifecycle Management Strategies

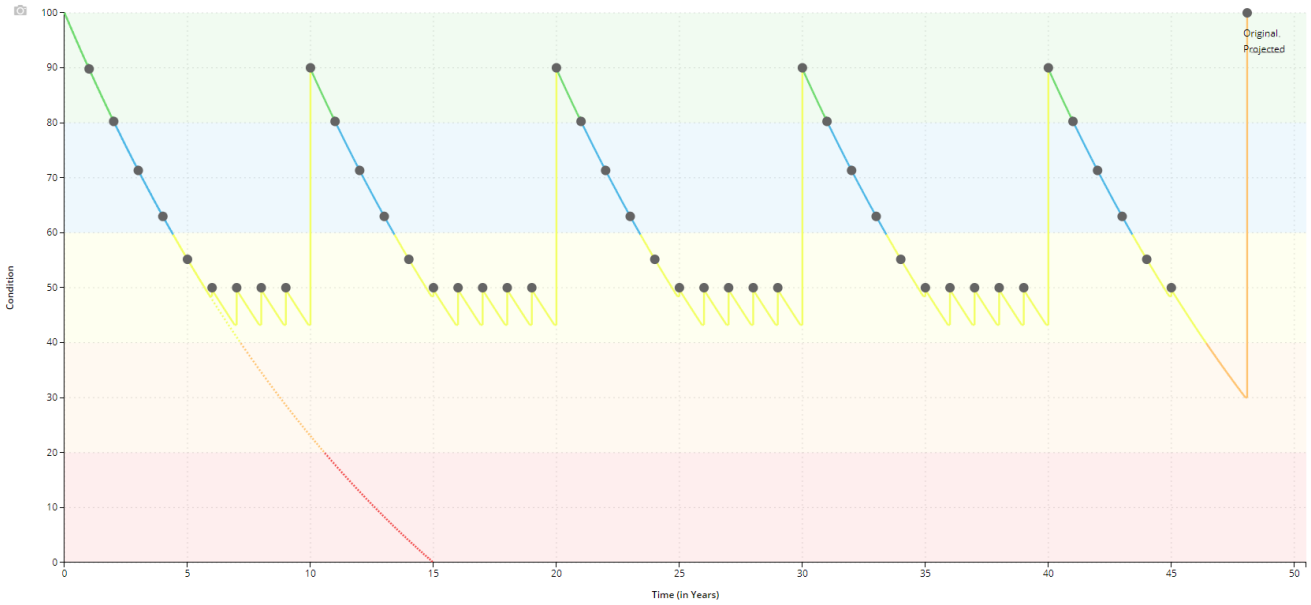
The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of LCB and HL4 roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost. Lifecycle management strategies were not developed for other road types[2] within the Township.

Paved Roads (HL4)		
Event Name	**Event Class**	**Event Trigger**
Cold Patching	Maintenance	1 Year (Repeated)
Single Surface Treatment	Rehabilitation	20 Years (Repeated)
Full Reconstruction	Replacement	30 to 40 Condition

[2] Gravel roads have low AADT (annual average daily traffic) and are inspected regularly. Grading is an important part of rural road maintenance and involves reshaping the roads. Public Works replaces gravel that has been either pushed off the road during winter operations and/or swept away during the spring thaw.



Paved Roads (LCB)		
Event Name	**Event Class**	**Event Trigger**
Cold Patching	Maintenance	1 Year (Repeated)
Double Surface Treatment	Rehabilitation	10 Years (Repeated)
Full Reconstruction	Replacement	30 to 40 Condition

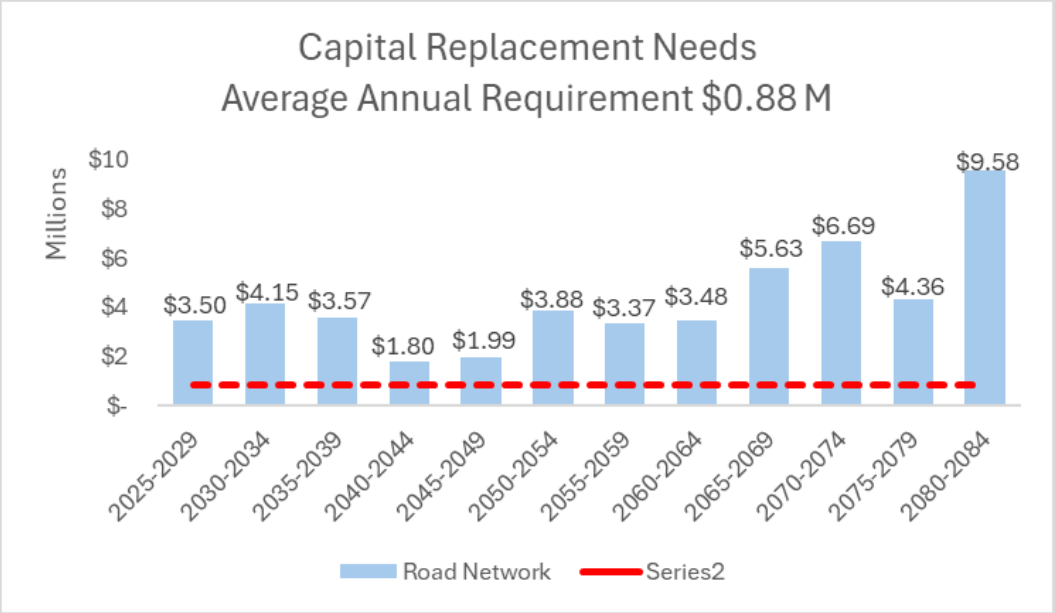


4.4 Forecasted Capital Requirements

The figure below illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's road network. This analysis was run until 2084 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets, the Township's primary asset management system and asset register.

The Township's average annual requirements (red dotted line) total $0.88 million for all assets in the road network. Although actual spending may fluctuate substantially from year to year, this figure serves as a useful benchmark for annual capital expenditure targets (or allocations to reserves), ensuring that projects are not deferred and replacement needs are met as they arise.

The chart illustrates substantial capital needs throughout the forecast period. These projections are based on asset replacement costs, age analysis, and condition data when available, as well as lifecycle modelling (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. Additionally, most assets may not require replacement. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. Regular pavement condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A detailed 10-year capital replacement forecast is provided in Appendix A – 10-Year Capital Requirements.

4.5 Risk Analysis

4.5.1 Risk Matrix

The risk matrix below is generated using available asset data, including condition, surface material, design class, traffic data, and roadside environment. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	Low	Moderate	High	Very High
$13,488,498	$5,115,001	$4,110,000	$2,040,000	$1,710,000
51%	19%	16%	8%	6%

4.5.2 Risks to Current Asset Management Strategies

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

Asset Data Confidence

There is a lack of confidence in the available inventory data and condition data. Staff plan to prioritize data refinement efforts by obtaining more accurate condition data using Street-Scan to increase the reliability of asset data and information.

Staff Resources & Capacity

Staff capacity is being stretched thin due to the growing population in the township and the expanding number of roads in the Township. Maintenance activities may be difficult to complete on schedule due to staff capacity.

Climate Change & Extreme Weather Events

Asset deterioration is accelerated due to extreme weather, which in some cases can cause unexpected failures. Surface flooding and road washouts from extreme rainfall have been experienced by the Township in recent years. These events make long-term planning difficult and can result in a lower level of service

Growth

The Township is expected to experience a 20% growth in population. Population and employment growth will increase the demand on municipal services, including the road network which

is experiencing a higher traffic volume. This can potentially decrease the lifecycle of certain assets. As the population continues to grow, the Township must prioritize expanding its capacity to serve a larger population.

Capital Funding Strategies

Major capital rehabilitation and replacement projects are often entirely dependent on the availability of grant funding opportunities. When grants are not available, rehabilitation and replacement projects may be deferred. An annual capital funding strategy could reduce dependency on grant funding and help prevent deferral of capital works.

4.6 Levels of Service

The Township of Greater Madawaska is committed to maintaining a high standard of road network service that is accessible, dependable, sustainable, and cost-effective for all residents. These networks are designed to support the community's traffic needs, ensuring safe and efficient transportation year-round, even under varying weather conditions. While the Township effectively manages its roads, challenges arise with regional roads, which are outside the Township's direct control, complicating efforts to maintain consistent local standards. This highlights the need for public education to manage expectations regarding road maintenance and service quality.

To maintain the road network in good repair, the Township conducts regular inspections and maintenance, aiming to minimize unplanned disruptions and respond promptly to any issues that may arise. The following sections summarize the Township's current levels of service, including KPIs (key performance indicators) under Ontario Regulation 588/17 and additional performance measures selected for this AMP.

4.6.1 Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the road network.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Accessibility	Description of road network and connectivity	Acceptable	The Township has a network of local and unpaved roads serving rural areas. No arterial roads.
Reliability & Performance	Description/images of pavement conditions by road class	Good	Paved roads have an average PCI of 67%. Unpaved roads are rated "Good."
Regulatory Compliance	Description of compliance with minimum maintenance standards (MMS)	Acceptable	The Township adheres to MMS, with regular inspections and prompt responses to any issues.

4.6.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the road network.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Accessibility	Lane-km of local roads per km²	0.19	Reflects rural road network with dispersed community layout.

Quality	Average PCI for paved roads	67% (Good)	Paved road condition is considered "Good."
Quality	Surface condition for unpaved roads	Good	Grading and surface treatment maintain acceptable conditions.
Performance	Capital reinvestment rate	1.10%	Long-term reinvestment planning is needed as per the recommendations in this report.
Performance	Average risk rating	5.82 – Low	Most roads do not pose a high risk of failure.

4.6.3 Proposed Levels of Service

This section provides recommendations for maintaining the road network based on the current Levels of Service (LOS) assessment, public engagement results, and risk analysis. The recommendations focus on addressing service deficiencies, maintaining acceptable performance levels, and assessing the risks associated with not meeting target service levels.

Current LOS

- HL4 & LCB Roads: Good (PCI = 67%)
- Unpaved Roads: Good

Recommendations

- Increase capital reinvestment in road rehabilitation where conditions are below acceptable levels.
- Implement a proactive pavement management program to optimize asset life-cycle performance and minimize long-term costs.
- Develop a communications strategy to improve public awareness of road rehabilitation efforts and planned investments.

Risk of Not Providing Acceptable LOS

- Heightened safety risks for road users due to poor surface conditions.
- Decreased public trust and satisfaction with municipal service delivery.
- Potential economic impact due to reduced accessibility for businesses and residents.

Non-Core Assets

5. Buildings

The Township of Greater Madawaska owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- municipal offices
- public library
- fire stations and associated offices and facilities
- medical centre
- public works garages and storage sheds
- rinks and community centres

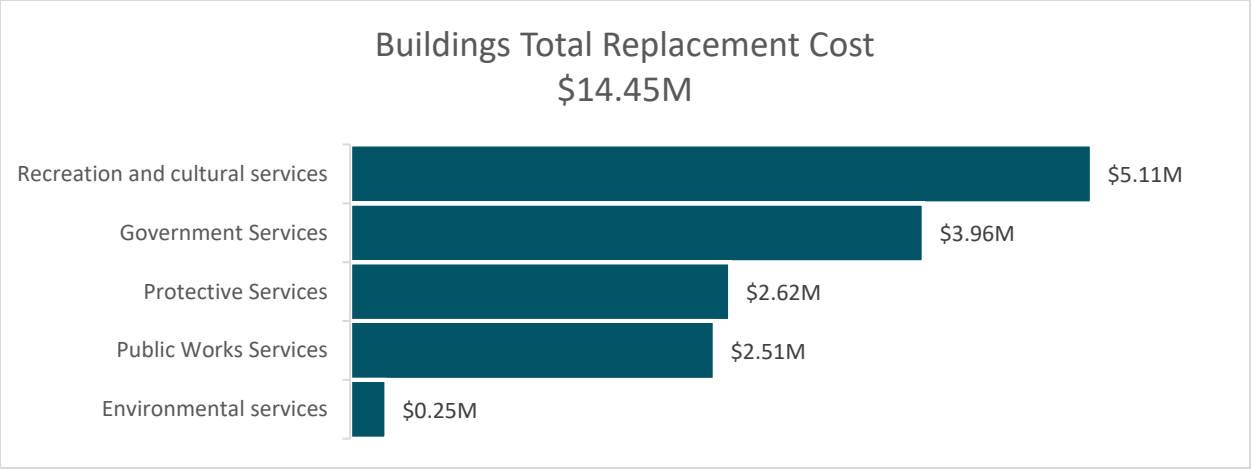
The state of the infrastructure for the buildings and facilities is summarized in the following table.

5.1 Inventory & Valuation

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township's buildings inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Environmental Services	3	$250,000	$12,500
Government Services	3 (13)	$3,953,219	$149,694
Protective Services	3 (9)	$2,618,480	$61,322

Public Works Services	4 (15)	$2,512,690	$66,528
Recreation & Cultural Services	14 (34)	$5,111,499	$152,498
		$14,445,888	**$442,543**



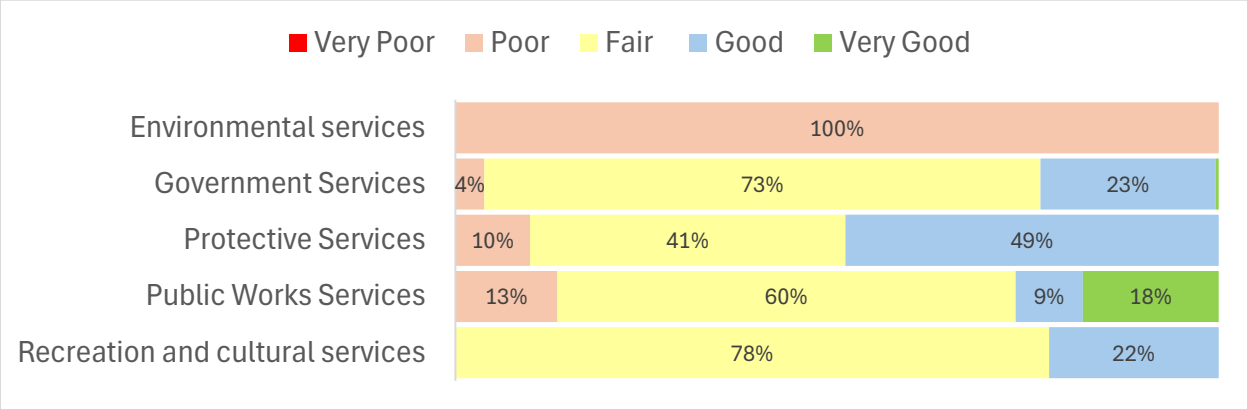
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

5.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Environmental Services	20	16.0	Fair (40%)
Government Services	15-50	18.0	Good (71%)
Protective Services	27-50	29.0	Fair (57%)
Public Works Services	20-50	27.9	Good (67%)
Recreation & Cultural Services	15-50	17.9	Good (66%)
		21.2	**Good (65%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.



To ensure that the Township's buildings continue to provide an acceptable level of service, the Township should monitor the average condition of all

assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the buildings.

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.

5.2.1 Current Approach to Condition Assessment

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

- Building assessments are completed on a walkthrough basis (monthly) by internal staff and any damages/deficiencies are reported. Contractors are then hired based on the identified deficiencies.

5.3 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets perform as expected and meet customer needs, it is essential to establish a lifecycle management strategy that proactively addresses asset deterioration.

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

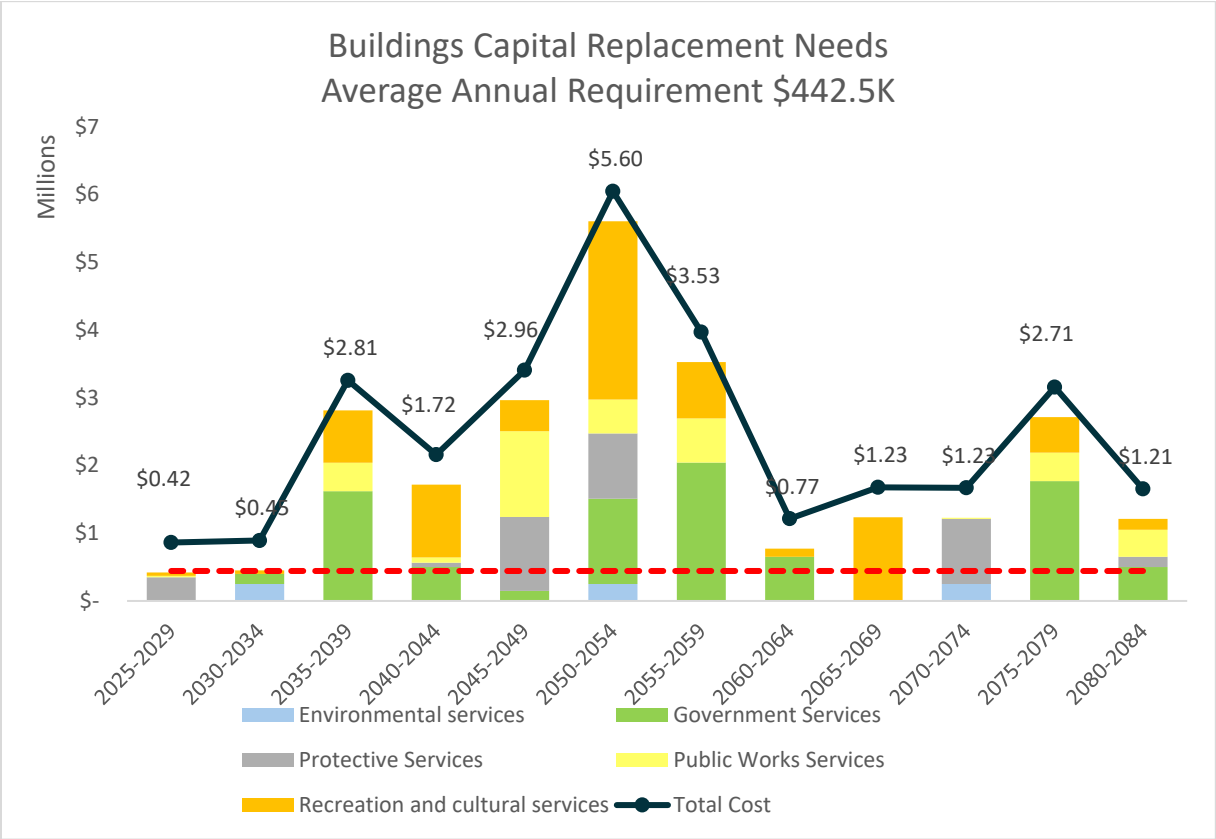
Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Municipal buildings are subject to regular inspections to identify health & safety requirements as well as structural deficiencies that require additional attention. These inspections include roofing, foundations, lighting fixtures, plumbing fixtures, doors, windows, and hot water tanks. Usually, furnaces are inspected once every year. The

	rehabilitation strategy could be described as a combination of proactive and reactive.
Replacement	Assessments are completed strategically as buildings approach their end-of-life to determine whether replacement or rehabilitation is appropriate. When the costs are greater than $25,000, Council approval is required.

5.4 Forecasted Capital Requirements

The graph below illustrates the cyclical short-, medium- and long-term replacement requirements for the Township's buildings. The Township's capital budget estimates an average annual requirement of $442.54 thousand to maintain buildings in good condition. These fluctuations underscore the importance of consistent and strategic funding. Without sufficient investment in high-need years, maintenance could be delayed, leading to higher long-term costs and a greater risk of asset failures. By leveraging data-driven planning, the Township can allocate resources effectively, ensuring that funding is available when needed, preventing costly emergency repairs, and maintaining facilities that are safe and functional for the community.

A detailed 10-year capital replacement forecast is provided in Appendix A – 10-Year Capital Requirements.



5.5 Risk Analysis

5.5.1 Risk Matrix

The risk matrix below is generated using available asset data. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	Low	Moderate	High	Very High
$11,873,888	$1,312,000	$0	$1,260,000	$0
82%	9%	0%	9%	0%

5.5.2 Risks to Current Asset Management Strategies

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

Growth

The Township is expected to experience a 20% growth in population. Population and employment growth will increase the demand on municipal services, including the community halls and buildings. This can potentially cause capacity issues from a level of service perspective. As the population continues to grow, the Township must prioritize expanding its capacity to serve a larger population.

Capital Funding Strategies

The funding strategies for the Township's buildings are very dependant on borrowing.

5.6 Levels of Service

The following tables identify the Township's current level of service for the buildings. These metrics include the performance measures that the Township has selected for this AMP.

The proposed levels of service over the next 10 years are to maintain the current levels of service. Therefore, the tables are identical to the current levels of service.

5.6.1 Community Levels of Service

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

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Accessibility	Description of building access and use for community services	Acceptable	Most facilities are accessible and centrally located, though aging infrastructure exists.
Quality	Description of facility condition and modernization plans	Acceptable	Buildings are in fair to good condition.
Sustainability	Energy efficiency and climate adaptation practices	Acceptable	Some upgrades have been implemented; however, more planning is required for long-term climate resilience.

5.6.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the buildings.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Quality	% in good or very good condition	65%	Facilities are inspected regularly and maintained to operational standards.
Quality	% in poor or very poor condition	0%	No buildings reported in critical state.
Performance	Capital reinvestment rate	1.0%	Investment supports basic upkeep; long-term reinvestment planning is needed for replacement needs.
Performance	Average risk rating	2.02 – Low	Buildings are monitored to minimize the risk of failure.

5.6.3 Proposed Levels of Service

The condition of the Township's facilities plays a critical role in supporting community wellbeing, safety, and satisfaction. Current data shows that many municipal buildings, particularly recreational and cultural facilities, are aging and in need of modernization. Public engagement indicates strong support for the modernization and functionality of recreational assets, yet a relatively low willingness to fund such improvements.

Current LOS

- Building Condition Assessment: Good (65%)
- Aging buildings, particularly recreational and cultural facilities, require modernization to meet evolving community needs.

Recommendations

- Leverage Grant Funding and Alternative Financing: Explore external funding sources, including government grants and public-private partnerships, to supplement capital reinvestment and reduce reliance on municipal budgets.
- Develop a Long-Term Modernization Strategy: Establish a phased plan for modernizing recreational and cultural buildings to meet evolving community expectations and new technologies while maintaining financial sustainability.
- Enhance Public Awareness and Engagement: Improve communication about the need for lifecycle investments and the long-term impact of deferred maintenance to build public support for sustainable infrastructure funding.

Risks of Not Addressing Facility Condition

- Accelerated Infrastructure Deterioration: Without timely reinvestment, facilities will continue to degrade, leading to higher repair costs and potential service disruptions.
- Public Dissatisfaction and Reduced Service Levels: Outdated, underperforming facilities, particularly in recreational and cultural spaces, can lead to lower community engagement, declining usage, and increased pressure to construct new assets rather than maintain existing ones.
- Increased Operational and Energy Costs: Older buildings with inefficient systems and outdated infrastructure will continue to incur higher maintenance and utility costs, straining operational budgets.
- Strained Financial Resources: Insufficient funding for deferred maintenance could result in emergency repairs, forced closures, or expensive last-minute interventions, impacting long-term financial planning.
- Equity and Accessibility Challenges: Facilities in poor condition may become less accessible, unsafe, or non-compliant with modern standards, disproportionately affecting vulnerable populations.

6. Vehicles

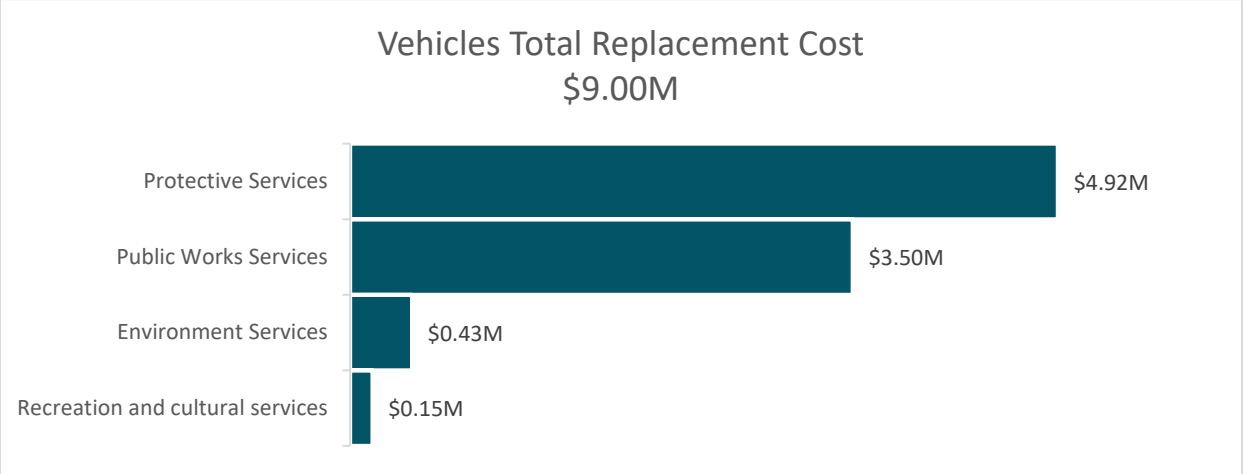
Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- Tandem plow trucks
- Fire rescue vehicles to provide emergency services
- Pick-up trucks to support the maintenance of the transportation network and address service requests for Facilities & Parks/Recreation

6.1 Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment of the Township's vehicles.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Environmental Services	2	$430,000	$28,667
Protection Services	12	$4,922,261	$306,744
Public Works Services	18	$3,496,000	$300,745
Recreation and Cultural Services	3	$155,000	$14,833
		$9,003,261	**$650,989**



Each asset's replacement cost is reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

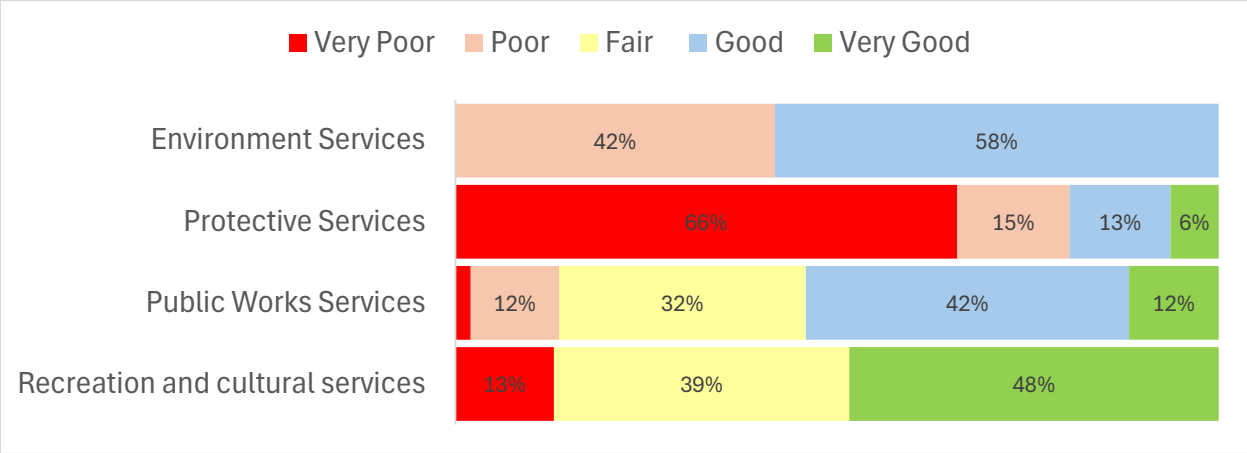
6.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Environmental Services	15	9.0	Good (68%)
Protection Services	8-20	9.8	Good (75%)
Public Works Services	5-15	5.0	Good (66%)

Recreation and Cultural Services	10-15	11.3	Good (63%)
		7.5	**Good (69%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.



To ensure that the Township's vehicles continue to provide an acceptable level of service, the Township monitors the average condition of all assets. If the average condition declines, staff re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the vehicles.

Each asset's estimated useful life is reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

6.2.1 Current Approach to Condition Assessment

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

- Staff complete annual assessments of vehicles where the entire vehicle is inspected and given a condition rating on a scale of very poor – very good.

6.3 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets perform as expected and meet customer needs, it is essential to establish a lifecycle management strategy that proactively addresses asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Visual inspections are completed annually
	Annual preventative maintenance activities include oil changes and greasing Fire trucks and emergency support vehicles comply with NFPA standards and undergo rigorous annual testing.
Replacement	Vehicle replacements are based on the highest priority vehicles and presented to council with the budget
	Vehicle age, kilometres and annual repair costs are taken into consideration when determining appropriate treatment options

6.4 Forecasted Capital Requirements

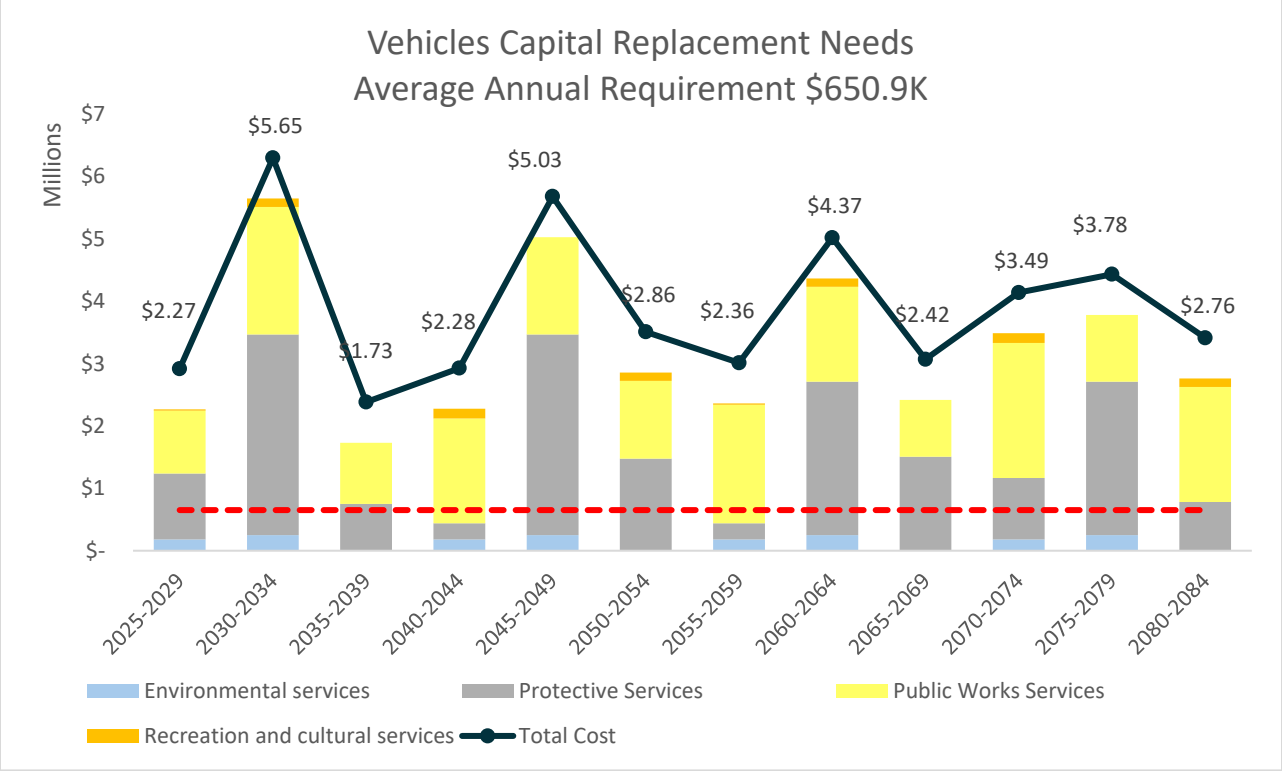
The graph below illustrates the cyclical short-, medium- and long-term replacement requirements for the Township's vehicles. The Township's

average annual requirements (red dotted line) total $650.98 thousand for all assets. Although actual spending may fluctuate substantially from year to year, this figure serves as a useful benchmark for annual capital expenditure targets (or allocations to reserves), ensuring that projects are not deferred and replacement needs are met as they arise.

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. Additionally, most assets may not require replacement. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A detailed 10-year capital replacement forecast is provided in Appendix A – 10-Year Capital Requirements.



6.5 Risk Analysis

6.5.1 Risk Matrix

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and department or service area. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	Low	Moderate	High	Very High
$3,697,261	$1,520,000	$1,426,000	$1,510,000	$850,000
41%	17%	16%	17%	9%

6.5.2 Risks to Current Asset Management Strategies

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

Growth

The Township is expected to experience significant growth. Population and employment growth will increase the demand on municipal services and potentially decrease the lifecycle of certain assets. Additionally, more vehicles will be required to accommodate the growing population.

Capital Funding Strategies

Grants will be required to procure the additional required vehicles to accommodate the growing population.

6.6 Levels of Service

The following tables identify the Township's current level of service for the vehicles. These metrics include the performance measures that the Township has selected for this AMP.

The proposed levels of service over the next 10 years are to maintain the current levels of services. Therefore, the tables are identical to the current levels of service.

6.6.1 Community Levels of Service

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

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Reliability	Description of lifecycle management and safety inspection programs	Acceptable	CVOR vehicles inspected quarterly; non-CVOR inspected multiple times annually.
Availability	Description of fleet availability for municipal services	Acceptable	Only 2.5% of fleet is typically unserviceable at any time.

6.6.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the vehicles.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Reliability	% of vehicles in good condition	69%	Vehicles are replaced based on service life.
Reliability	Average condition of municipal vehicles	Needs Improvement	Age-based scoring indicates low condition despite operability.
Affordability	Capital Reinvestment Rate	2.4%	Needs Improvement-long-term reinvestment planning needed.
Risk	Average risk rating	5.05 – Low	Vehicles are closely monitored to minimize failure risk.

6.6.3 Proposed Levels of Service

This section provides recommendations for vehicles based on the current Levels of Service (LOS) assessment, public engagement results, and risk analysis. The recommendations focus on modernization, reliability, affordability, and accessibility, ensuring that these assets continue to support service delivery effectively while considering funding constraints and public priorities.

Current LOS

- Vehicles Condition Assessment: Good (69%)

Recommendations

- Prioritize replacement of vehicles in poor or worse condition while maintaining fleet availability.

- Develop a dedicated capital reinvestment strategy to ensure long-term fleet sustainability.
- Enhance public awareness of fleet modernization efforts to improve perceptions of efficiency and environmental impact.

Risk of Not Addressing Vehicle Condition

- Increased service disruptions and higher maintenance costs.
- Reduced reliability of emergency and service vehicles, impacting municipal operations.
- Negative public perception regarding environmental sustainability.

7. Machinery & Equipment

In order to maintain the high quality of public infrastructure and support the delivery of core services, Township staff own and employ various types of machinery and equipment. This includes:

- IT Equipment to support government services
- Graders, plows, etc. to support the delivery of public works services
- Playground and rink equipment for recreational uses
- Fire equipment to support protective services

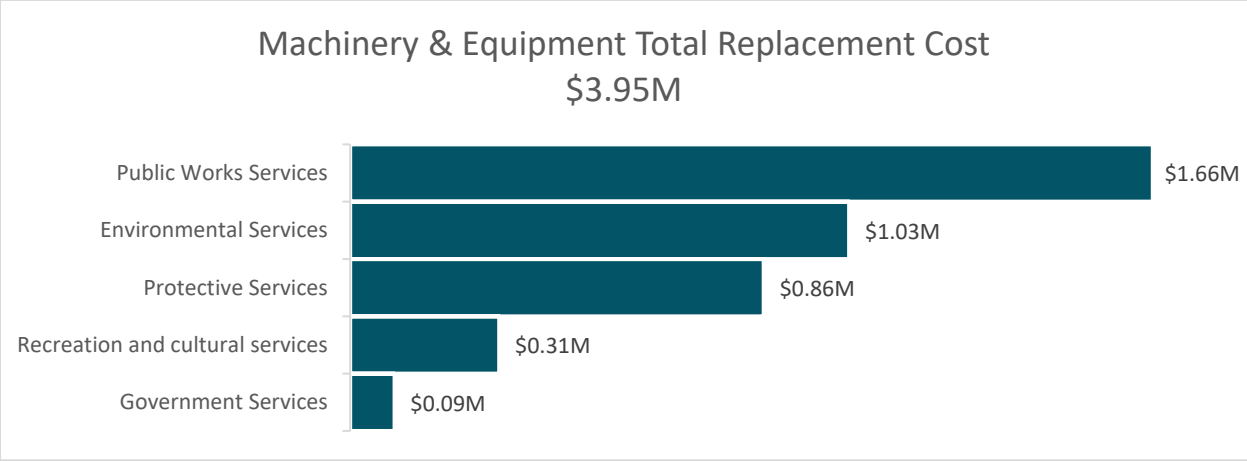
Keeping machinery and equipment in an adequate state of repair is important to maintain a high level of service.

7.1 Inventory & Valuations

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township's machinery and equipment inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Environmental Services	31	$1,034,229	$58,911

Government Services	5	$92,000	$8,350
Protective Services	16	$857,000	$69,609
Public Works Services	24	$1,663,400	$100,307
Recreation & Cultural Services	12	$309,000	$17,250
Total		**$3,955,629**	**$254,427**



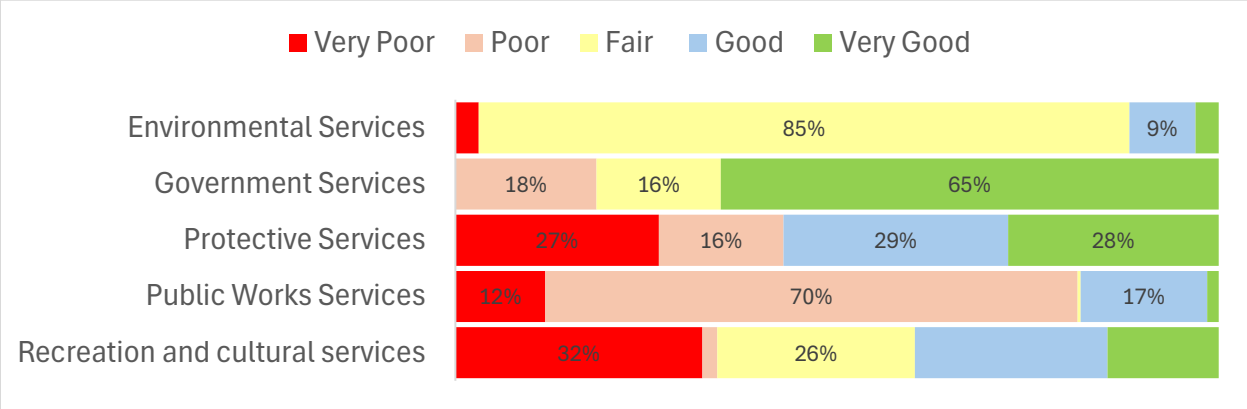
Each asset's replacement cost is reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

7.2 Asset Condition & Age

The table below identifies the current average condition and source of available condition data for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Environmental Services	10-20	9.9	Good (64%)
Government Services	10-20	10.8	Good (70%)
Protective Services	10-25	11.5	Good (69%)
Public Works Services	5-20	7.5	Good (70%)
Recreation & Cultural Services	10-20	9.0	Good (68%)
Average		**9.4**	**Good (67%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.



To ensure that the Township's machinery and equipment continues to provide an acceptable level of service, the Township monitors the average

condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the machinery and equipment.

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

7.2.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of machinery and equipment to ensure they are in state of adequate repair
- There are no formal condition assessment programs in place

7.3 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Visual inspections completed annually
	Annual preventative maintenance activities include oil changes and greasing

Replacement	Machinery & equipment replacements are based on the highest priority vehicles assets and presented to council with budget
	Equipment age and annual repair costs are taken into consideration when determining appropriate treatment options

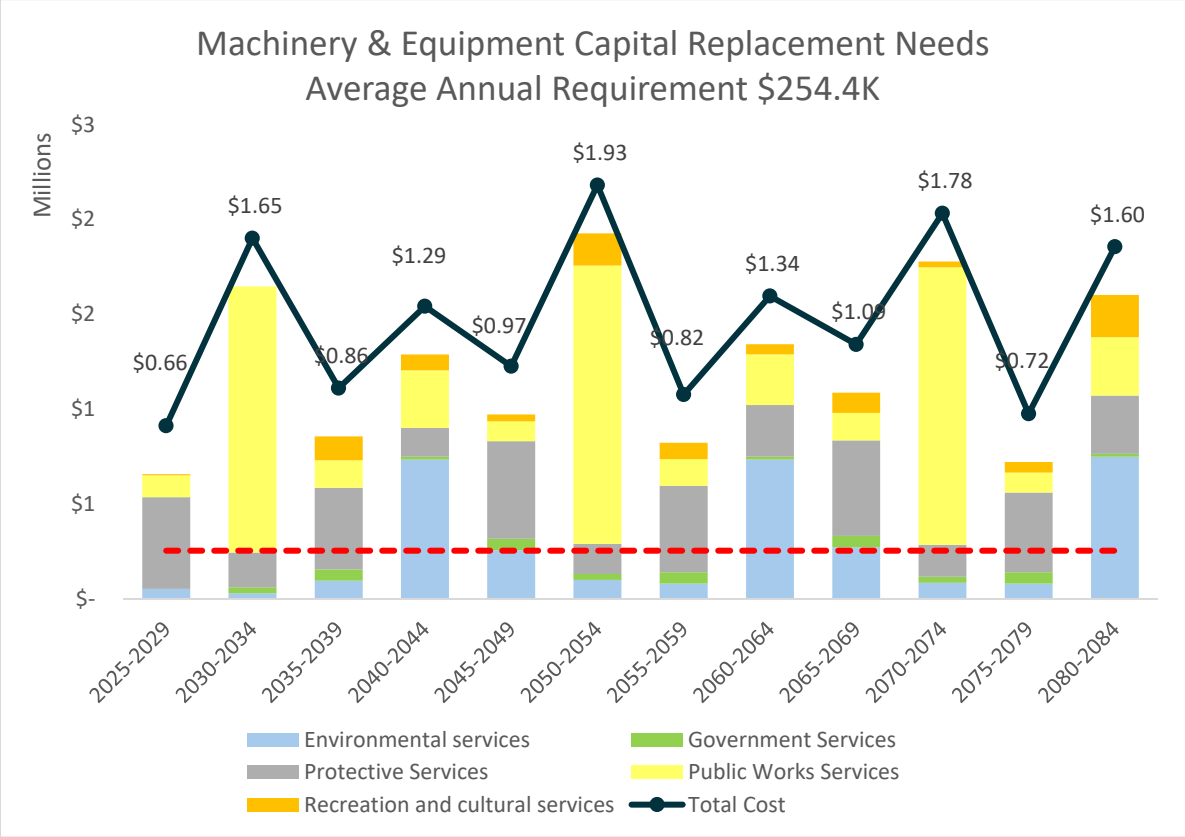
7.4 Forecasted Capital Requirements

The graph below illustrates the cyclical short-, medium- and long-term replacement requirements for the Township's vehicles. The Township's average annual requirements (red dotted line) total $254.42 thousand for all assets. Although actual spending may fluctuate substantially from year to year, this figure serves as a useful benchmark for annual capital expenditure targets (or allocations to reserves), ensuring that projects are not deferred and replacement needs are met as they arise.

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. Additionally, most assets may not require replacement. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A detailed 10-year capital replacement forecast is provided in Appendix A – 10-Year Capital Requirements.



7.5 Risk Analysis

7.5.1 Risk Matrix

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and department or service area. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	Low	Moderate	High	Very High
$2,213,629	$582,000	$1,160,000	$0	$0
56%	15%	29%	0%	0%

7.5.2 Risks to Current Asset Management Strategies

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

Growth

The Township is expected to experience significant growth. Population and employment growth will increase the demand on municipal services and potentially decrease the lifecycle of certain assets. Additionally, more equipment will be required to accommodate the growing population.

Capital Funding Strategies

Grants will be required to procure the additional required equipment to accommodate the growing population.

7.6 Levels of Service

The following tables identify the Township's current level of service for the vehicles. These metrics include the performance measures that the Township has selected for this AMP.

The proposed levels of service over the next 10 years are to maintain the current levels of service. Therefore, the tables are identical to the current levels of service.

7.6.1 Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the machinery and equipment.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Quality	Description of asset condition and plans for renewal	Acceptable	Most equipment is recently acquired, with renewal based on usage.

7.6.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the vehicles.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Quality	Average condition score	67% (Good)	Weighted scoring indicates good average performance.
Affordability	Capital reinvestment rate	2.1%	Reinvestment rate needs to increase to support current lifecycle needs.
Risk	Average risk rating	3.97 – Very Low	Minimal service interruption risk due to asset failure.

7.6.3 Proposed Levels of Service

This section provides recommendations for machinery & equipment based on the current Levels of Service (LOS) assessment, public engagement results, and risk analysis. The recommendations focus on modernization, reliability, affordability, and accessibility, ensuring that these assets continue to

support service delivery effectively while considering funding constraints and public priorities.

Current LOS

- Average Condition of Equipment: Good (67%)
- Annual Sustainable Capital Reinvestment Rate: Needs Improvement (34.77% of required funding).

Recommendations

- Increase reinvestment in machinery and equipment to address funding gaps.
- Ensure replacement cycles align with asset performance data to maintain efficiency.
- Improve transparency in capital reinvestment planning to build public understanding.

Risk of Not Providing Acceptable LOS or not addressing

- Higher lifecycle costs due to reactive maintenance.
- Potential operational inefficiencies in municipal service delivery.
- Increased safety risks for staff using outdated equipment.

8. Land Improvements

The Township of Greater Madawaska owns a small number of assets that are considered land improvements. This category includes:

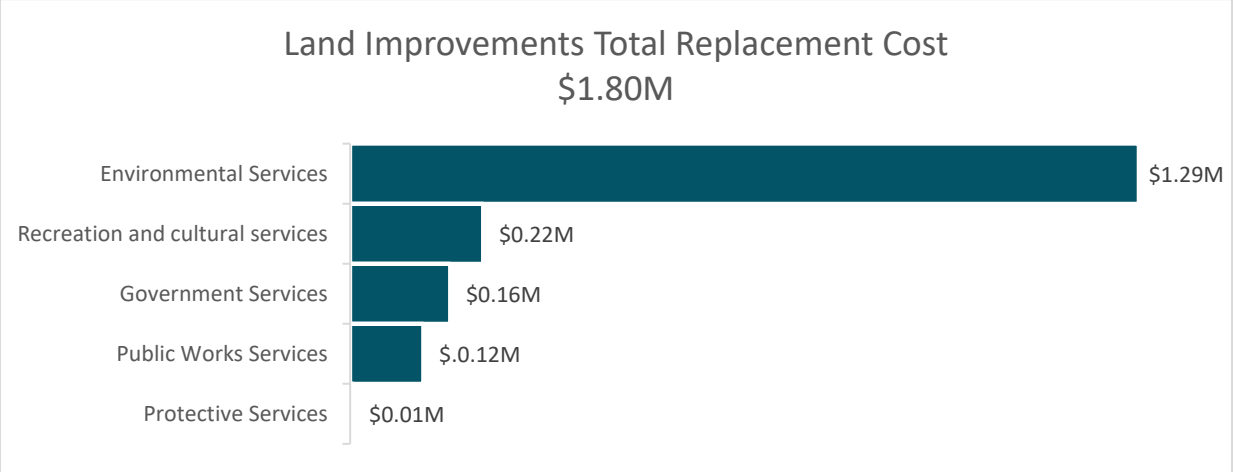
- Parking lots for municipal facilities
- Miscellaneous landscaping and other assets

The state of the infrastructure for the land improvements is summarized in the following table.

8.1 Inventory & Valuation

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township's land improvements inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Environmental Services	11	$1,295,020	$44,695
Government Services	6	$164,000	$7,822
Protective Services	1	$5,000	$200
Public Works Services	6	$120,000	$5,388
Recreation & Cultural Services	11	$218,212	$6,354
Total		**$1,802,232**	**$64,460**



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

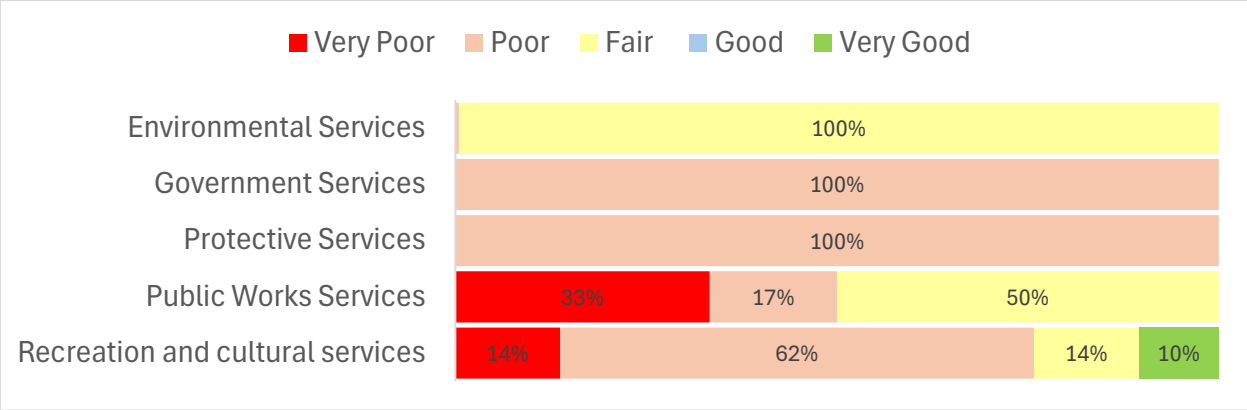
8.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Environmental Services	25-45	26.6	Fair (56%)
Government Services	15-45	26.6	Fair (40%)
Protective Services	25	32.0	Fair (60%)
Public Works Services	15-45	34.3	Poor (37%)

Recreation & Cultural Services	25-50	32.9	Fair (42%)
Average		**30.2**	**Fair (45%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.



To ensure that the Township's land improvement assets continue to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the land improvements.

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.

8.2.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of land improvements assets to ensure they are in state of adequate repair
- There are no formal condition assessment programs in place for land improvements

8.3 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets perform as expected and meet customer needs, it is essential to establish a lifecycle management strategy that proactively addresses asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenanace, Rehabilitation & Replacement	The Land improvements asset category includes several unique asset types, and lifecycle requirements are dealt with on a case-by-case basis. Park assets are inspected on a weekly

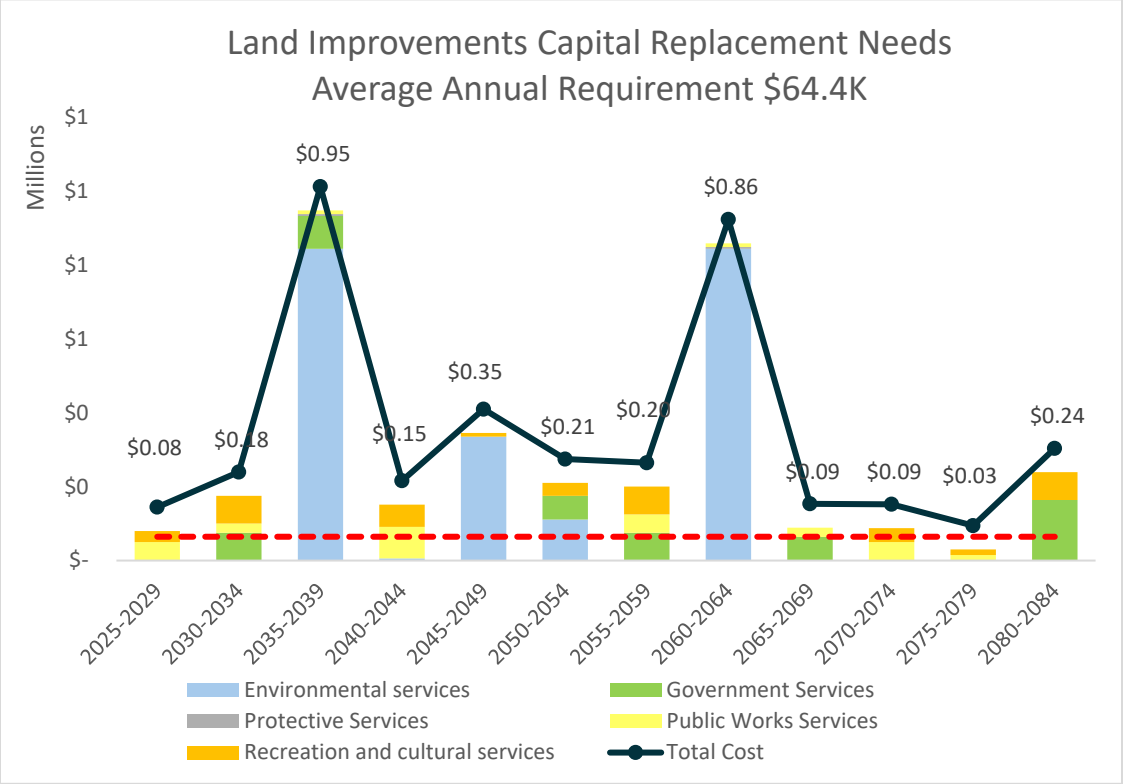
8.4 Forecasted Capital Requirements

The graph below illustrates the cyclical short-, medium- and long-term replacement requirements for the Township's vehicles. The Township's average annual requirements (red dotted line) total $64.46 thousand for all assets. Although actual spending may fluctuate substantially from year to year, this figure serves as a useful benchmark for annual capital expenditure targets (or allocations to reserves), ensuring that projects are not deferred and replacement needs are met as they arise.

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. Additionally, most assets may not require replacement. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

A detailed 10-year capital replacement forecast is provided in Appendix A – 10-Year Capital Requirements.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

8.5 Risk Analysis

8.5.1 Risk Matrix

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and department or service area. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	Low	Moderate	High	Very High
$602,232	$55,000	$1,145,000	$0	$0
33%	3%	64%	0%	0%

8.6 Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events

Trees and park assets are getting damaged due to recurring extreme weather events.

Growth

The Township is expected to experience a 20% growth in population. Population and employment growth will increase the demand on municipal services, including parks. This can potentially cause capacity issues from a level of service perspective. As the population continues to grow, the Township must prioritize expanding its capacity to serve a larger population.

Capital Funding Strategies

The funding strategies for the Township's land improvement assets is very dependant on borrowing.

8.7 Levels of Service

The following tables identify the Township's current level of service for the vehicles. These metrics include the performance measures that the Township has selected for this AMP.

The proposed levels of service over the next 10 years are to maintain the current levels of services. Therefore, the tables are identical to the current levels of service.

8.7.1 Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the land improvements.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Quality	Description of condition and renewal plans for land-based infrastructure	Acceptable	Regular inspections occur.

8.7.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the land improvements.

Service Attribute	Key Performance Indicator	Current LOS (2025)	Rationale
Quality	Average Condition Rating	Fair (45%)	Few land improvement assets are in high condition due to aging.
Affordability	Capital reinvestment rate	1.2%	Needs Improvement - Investment needs to increase to support future requirements
Risk	Average risk rating	6.69 – Low	Moderate concerns; risk could rise with continued underinvestment.

8.7.3 Proposed Levels of Service

This section provides recommendations for maintaining and improving land based on the current Levels of Service (LOS) assessment, public engagement results, and risk analysis. The recommendations focus on addressing service deficiencies, sustaining acceptable performance levels, and evaluating risks associated with not meeting target service levels.

8.7.3.1 Land Improvements

Current LOS

- Average Condition of Land Improvements: Fair 45%
  Annual Sustainable Capital Reinvestment Rate: Needs Improvement (18.13% of required funding).

Strategies

9. Impacts of 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 enable the Township to plan more effectively for new infrastructure, as well as the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect the types of assets required and the level of service that best meets the community's needs.

9.1 County of Renfrew Official Plan (March 2020)

As a result of amalgamations, many municipalities within the County do not have Local Official Plans that encompass their entire municipality. The County's Official Plan has been designed to provide a consistent and detailed set of policies across Renfrew County that respond to local conditions. Greater Madawaska is amongst the municipalities that have indicated that they will utilize the County Official Plan as their detailed Official Plan.

The Township of Greater Madawaska intends to promote and accommodate recreation community development (recreational and residential) areas within the municipality, while at the same time having regard for the natural environment and the financial and servicing needs of the municipality

The following table outlines the population and employment forecasts allocated to Greater Madawaska.

	2011	2016	2021	2026	2031	2036
Actual Population	2,485	2518[3]	2,864[4]	-	-	-
Project Population – Low	-	2560	2638	2718	2801	2886
Projected Population - High	-	2599	2718	2842	2973	3109

However, according to the 2021 Census, it appears that Greater Madawaska has exceeded its growth projection and has already reached the population it was initially projected to reach around 2031. This may be due to recent migration trends from urban centers to rural communities, driven by remote working options and a cheaper cost of living.

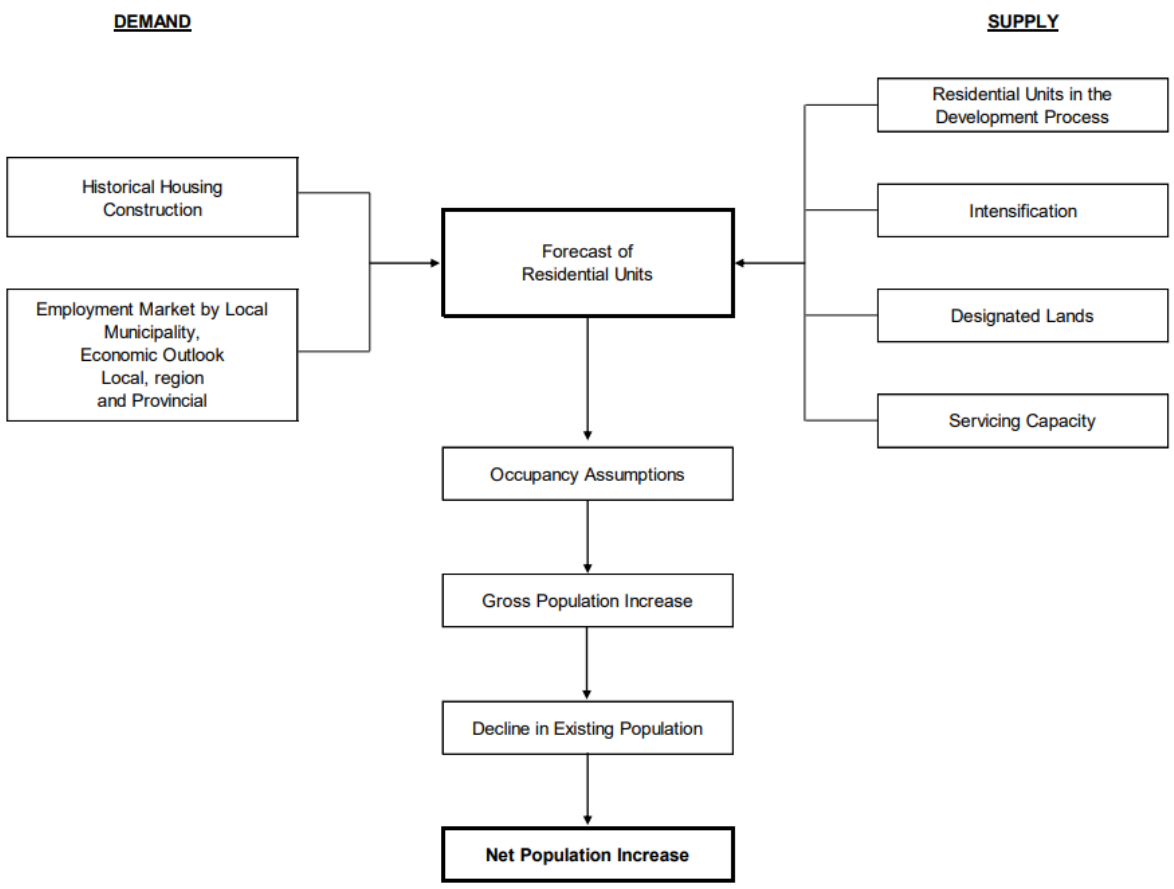
9.2 Development Charge Study (February 2022)

The Development Charge Study identified that the permanent population in Greater Madawaska is anticipated to reach approximately 3,340 by early 2032 and 3,550 by mid-2036, resulting in an increase of approximately 590 and 810 persons, respectively. The Township's seasonal population is forecast to increase to 4,020 persons in 2032 and 4,160 persons in 2036. The Township's total population (permanent and seasonal population) is forecast to reach 7,360 by 2032, and 7,720 by 2036.

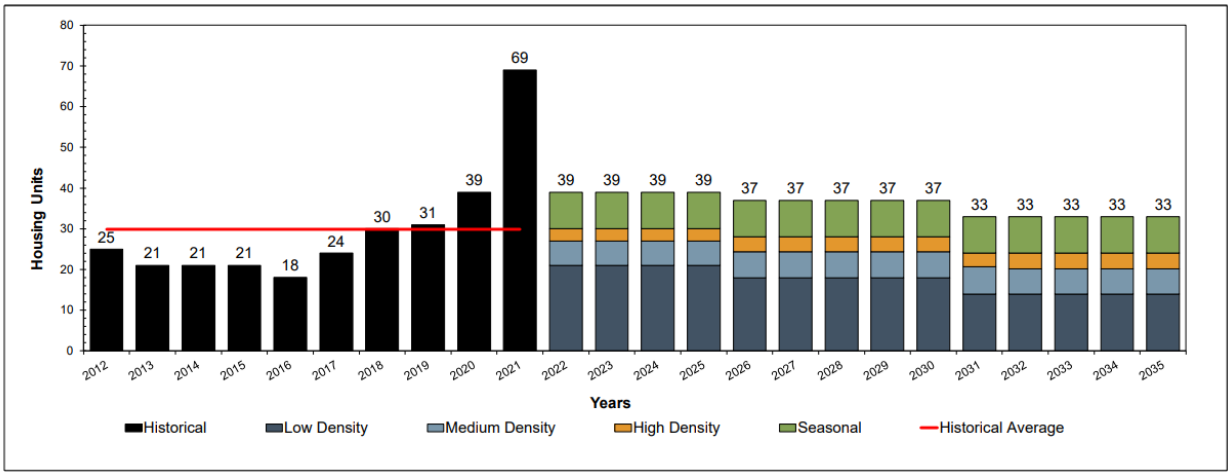
[3] 2016 Census

[4] 2021 Census

The methodology of the residential growth forecast analysis is summarized in the graph below:



Furthermore, the graph below shows the annual housing forecast:



9.3 Impact of Growth on Lifecycle Activities

As the Township of Greater Madawaska experiences significant population and employment growth, the demand for municipal services will rise. The Township will need to expand, maintain, and optimize its infrastructure and facilities to meet community needs while ensuring financial sustainability. Below is an analysis of the impact of growth on key services managed by the Township, focusing on lifecycle activities such as capital investments, operational costs, human resource needs, and long-term sustainability.

9.3.1 Road Network Infrastructure

Lifecycle Considerations:

- Capital Costs: Expansion of road networks, rehabilitation of existing roads, intersection improvements, and investments in active transportation (sidewalks).
- Operational Costs: Increased road maintenance, snow removal, and road resurfacing programs.
- Human Resources: Additional public works staff for road repairs, maintenance crews for winter operations, and transportation planners.

Growth-Related Impacts:

- Strategic Growth Areas like the Village of Calabogie will require road capacity upgrades and enhanced infrastructure.
- New developments will necessitate upgraded arterial (County) and collector roads (Township) to support residential and employment growth.
- Increased traffic volumes will drive the need for intersection improvements.

9.3.2 Community Buildings and Recreational Services

Lifecycle Considerations:

- Capital Costs: Expanding or constructing new community centers and public facilities.
- Operational Costs: Increased facility maintenance, security, energy costs, and staffing for programming.
- Human Resources: More staff for facility management, recreation programming, and customer service.

Growth-Related Impacts:

- New residential developments will drive demand for additional recreational spaces.
- Aging community centers will require major retrofits and accessibility improvements.

9.3.3 Fire and Emergency Services

Lifecycle Considerations:

- Capital Costs: Construction of new fire stations, procurement of fire trucks and emergency response equipment.
- Operational Costs: Training programs, staffing, equipment maintenance, and emergency response planning.
- Human Resources: Additional administration, firefighters, training, and fire prevention personnel.

Growth-Related Impacts:

- More residential and commercial developments will require new fire apparatus, equipment, and updated emergency response plans.
- Intensification areas will require enhanced fire prevention, fire code enforcement and public education measures.
- Climate change-related risks (e.g., flooding and extreme weather) will require expanded emergency preparedness and response efforts.

9.3.4 Parks, Trails and Open Spaces

Lifecycle Considerations:

- Capital Costs: Land acquisition for new parks, development of trails, playground installations, and natural habitat restoration.
- Operational Costs: Ongoing maintenance, landscaping, waste collection, and tree management.
- Human Resources: Additional park maintenance crews, arborists, and recreational programming staff.

Growth-Related Impacts:

- Increased population density will require more green spaces and parkland.
- Expansion of trails and pedestrian pathways will be necessary to support active transportation.
- Higher usage of parks will lead to increased maintenance costs and more demand for sports fields and recreational amenities.

9.3.5 Long-Term Financial and Asset Management Considerations

To maintain financial sustainability, the Township must:

- Incorporate Lifecycle Cost Analysis: Ensure that new infrastructure considers not only capital costs but also long-term maintenance and renewal.

- Develop Sustainable Funding Strategies: Balance capital expenditures with operating budgets and secure provincial/federal funding where possible.
- Prioritize Infrastructure Investment Based on Growth Projections: Align infrastructure plans with population and employment forecasts.
- Enhance Asset Management Practices: Utilize data-driven planning to optimize asset performance and service delivery.

9.3.6 Conclusion

The Township's growth presents both opportunities and challenges in managing its municipal infrastructure and services. By proactively addressing lifecycle activities— capital costs, operational expenses, and workforce requirements—the Township can ensure that roads, facilities, parks, and emergency services continue to meet the needs of its expanding population while maintaining financial sustainability.

10. 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 Greater Madawaska to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

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

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

Note: Periodic grants are normally not included due to Provincial requirements for firm commitments. However, if moving a specific project

forward is wholly dependent on receiving a one-time grant, the replacement cost included in the financial strategy is the net of such grant being received.

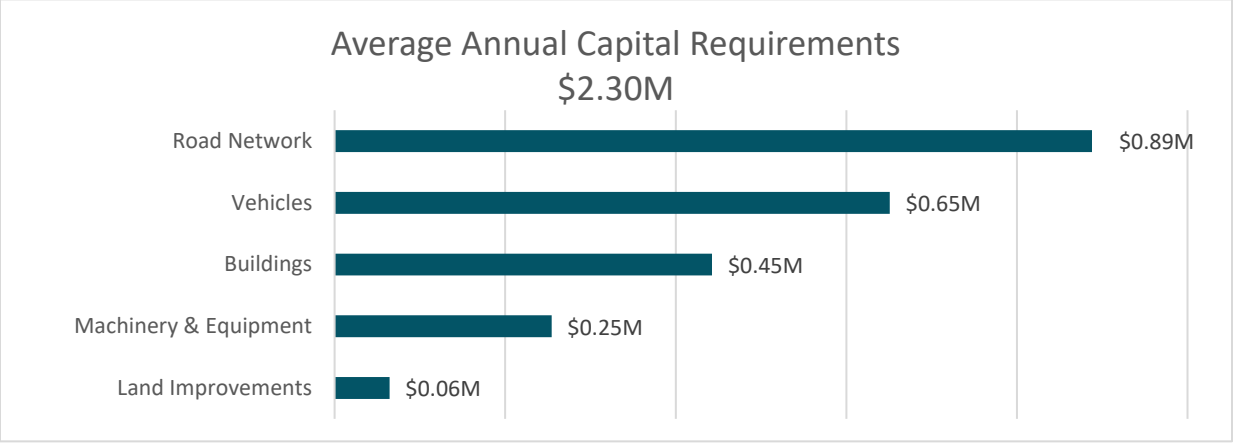
If the financial plan component results in a funding shortfall, the Province requires the inclusion of a specific plan as to how the impact of the shortfall will be managed. In determining the legitimacy of a funding shortfall, the Province may evaluate a Township's approach to the following:

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

10.1 Annual Requirements & Capital Funding

10.1.1 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 $2.30 million 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.

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

The following table compares two scenarios for the Road Network:

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

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	$2,250,445	$888,084	$1,362,361

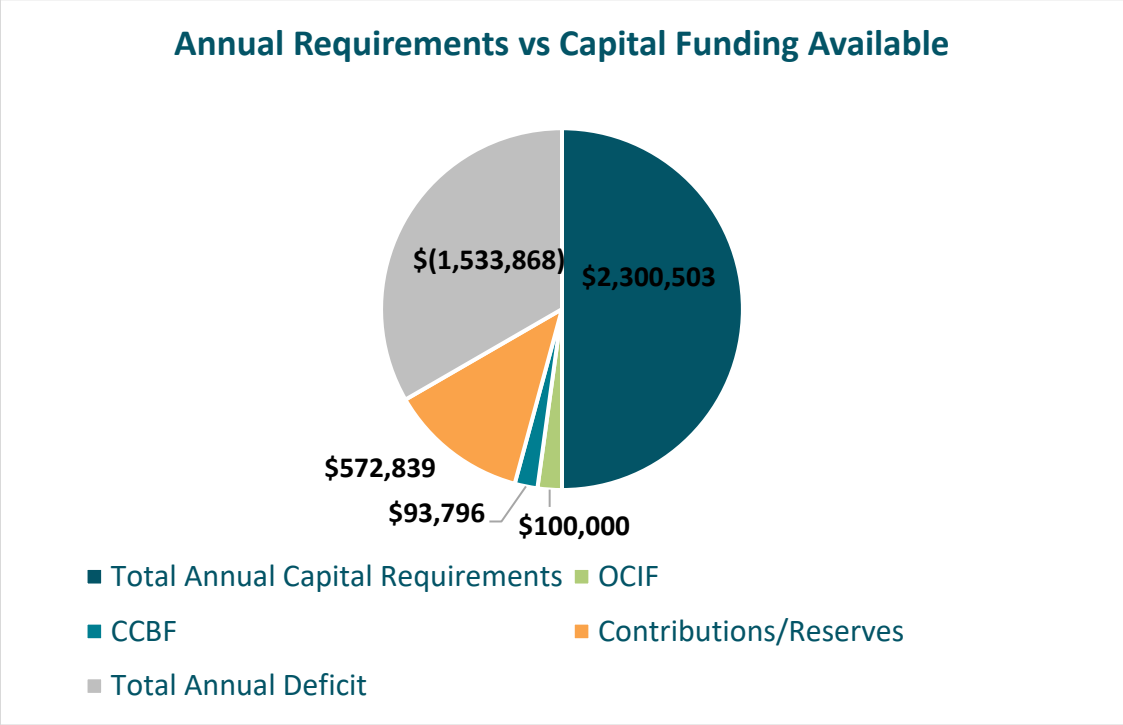
The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of $1,362,361 for the Road Network. This represents an overall reduction of the annual requirements by 60.5%. As the lifecycle strategy scenario represents the lowest cost option available to the Township, we have used these annual requirements in the development of the financial strategy.

10.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $766,635 per year towards capital

projects. However, this figure includes Ontario Community Infrastructure Fund (OCIF) contributions, which may be discontinued in future years.

Given the annual capital requirement of $2,300,503, there is currently a funding gap of $1,533,868 annually.



10.2 Funding Objective

We have developed a scenario that would enable Greater Madawaska to achieve full funding within 10 years for the following assets:

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

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

10.3 Financial Profile: Tax Funded Assets

10.3.1 Current Funding Position

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

Annual Investment Requirements	
Current Funding Position	**Average Annual Requirement**
Asset Category	
Buildings	442,543
Land Improvements	64,460
Machinery & Equipment	254,427
Road Network	888,084
Vehicles	650,989
Average Annual Requirement	**$ 2,300,503**
Annual Funding Available	
Reserve Contribution	572,839
Canada Community Building Fund	93,796
OCIF	100,000
OMPF	
Development Funds	
Parkland Dedication	
Total Annual Funding Available	**$ 766,635**
Annual Deficit	**$ (1,533,868)**

The average annual investment requirement for the above categories is $2,300,503. Annual revenue currently allocated to these assets for capital purposes is $766,635, leaving an annual deficit of $1,533,868. Put differently, these infrastructure categories are currently funded at 33.3% of their long-term requirements.

10.3.2 Full Funding Requirements

In 2025, the Township of Greater Madawaska had annuals of $4,600,645. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Road Network	9.43%
Buildings	3.69%
Vehicles	0.93%
Machinery & Equipment	12.86%
Land Improvements	6.41%
Total	33.32%

The Township scenario modelling includes capturing the above changes and allocating them to the infrastructure deficit outlined above. The table below outlines this concept and presents several options:

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	$ 1,533,868	$ 1,533,868	$ 1,533,868	$ 1,533,868
Tax Increase Required	33.32%	33.32%	33.32%	33.32%
Annually	5.9%	2.9%	1.9%	1.4%

10.3.3 Financial Strategy Recommendations

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

a) When realized, reallocating the debt cost reductions to the infrastructure deficit as outlined above.

b) Staff recommend rounding the increase of tax revenues from 2.9% to 3.0% each year for the next 10 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
c) allocating the current gas tax and OCIF revenue as outlined previously.
d) allocating the scheduled OCIF grant increases to the infrastructure deficit as they occur.
e) reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
f) 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.
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full funding on an annual basis in 10 years and provides financial sustainability over the period modelled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available.

10.4 Use of Debt

To ensure long-term fiscal sustainability, our funding models must proactively address the risks associated with rising interest rates and the cost implications of debt financing.

As part of our strategic financial planning, the Township's 10-year financial framework includes both projected capital contributions and the debentures required to support ongoing infrastructure investment. This integrated

approach ensures that we can fund proposed projects while preserving the current levels of service that our residents rely on.

The following table outlines how Greater Madawaska will use debt to fund its 10-year capital plan. There is currently $3,332,861 of debt outstanding for the assets covered by this AMP, with corresponding principal and interest payments of $588,071, well within its provincially prescribed maximum of the estimated annual repayment limit of $848,360 as of 2024 FIR Data.

Schedule of Debenture Repayments

Year	New Debt	2025 (Budget)	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing (start of budget year	$ 5,220,950	$ 638,339	$715,689	$694,574	$ 673,644	$ 597,013	$ 522,844	$ 504,761	$ 486,711	$ 267,351	$ 181,977
2026	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2027	$ 285,903	$ -	$ -	$ -	$ 26,328	$ 26,328	$ 26,328	$ 26,328	$ 26,328	$ 26,328	$ 26,328
2028	$ 256,843	$ -	$ -	$ -	$ -	$ 23,652	$ 23,652	$ 23,652	$ 23,652	$ 23,652	$ 23,652
2029	$ 166,229	$ -	$ -	$ -	$ -	$ -	$ 15,307	$ 15,307	$ 15,307	$ 15,307	$ 15,307
2030	$ 2,982,557	$ -	$ -	$ -	$ -	$ -	$ -	$ 274,652	$ 274,652	$ 274,652	$ 274,652
2031	$ 2,812,758	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 259,016	$ 259,016	$ 259,016
2032	$ 1,554,943	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,189	$ 143,189
2033	$ 215,485	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 19,843
2034	$ 828,739	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2035	$ 1,760,184	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Annual Debt Repayments		**$ 638,339**	**$715,689**	**$694,574**	**$ 699,972**	**$ 646,993**	**$ 588,131**	**$ 844,700**	**$1,085,666**	**$1,009,494**	**$ 943,964**
Estimated Annual Repayment Limit		$ 1,535,856	$847,955	$922,130	$1,001,191	$1,085,452	$1,175,248	$1,270,935	$1,372,893	$1,481,525	$1,597,259
Estimated Remaining Annual Repayment Limit		$ 897,517	$132,265	$227,556	$ 301,219	$ 438,459	$ 587,117	$ 426,235	$ 287,227	$ 472,030	$ 653,295

10.5 Use of Reserves

10.5.1 Available Reserves

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

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

By reserve category, the table below outlines the details of the reserves currently available to Greater Madawaska.

Reserve Category	Balance at December 31, 2024
Capital Works Reserve	$ 933,590.00
Development Charge Reserve	$ (87,223.00)
Parkland Dedication Reserve	$ 143,889.00
Total Reserves	**$ 990,256.00**

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 consider when determining their capital reserve requirements include:

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

These reserves are available for use for total asset categories during the phase-in period to full funding. This, coupled with Greater Madawaska'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.

10.5.2 Recommendation

To achieve the proposed levels of service goals outlined in this Asset Management Plan, the Township must address the funding gap for tax-funded assets. The analysis indicates that the current annual tax-funded capital investment falls short of the required sustainable levels, creating risks to infrastructure condition and service reliability over time.

To bridge this gap and maintain long-term financial sustainability, the following strategies should be considered:

- Gradual tax levy increases to phase in additional funding for capital rehabilitation and replacement. A structured annual increase would help align funding with lifecycle needs while minimizing short-term financial strain.
- Strategic reallocation of budget surpluses and reserve contributions to prioritize critical infrastructure needs and reduce reliance on debt financing.
- Increased grant and partnership funding to support major capital investments while reducing the burden on taxpayers.
- The Township should proactively apply for available provincial and federal funding programs such as the Canada Community-Building Fund (CCBF).
- Enhanced asset lifecycle management strategies to extend the useful life of tax-funded assets and optimize long-term capital planning, reducing the immediate financial burden.

Without these adjustments, the Township will face continued infrastructure deterioration, increasing maintenance costs, and higher long-term financial risks. Proactive funding strategies will ensure that the Township's tax-funded assets can meet service level expectations while maintaining fiscal responsibility.

11. Recommendations & Key Considerations

This section outlines key financial and asset management recommendations to ensure the Township of Greater Madawaska can achieve long-term financial sustainability, service reliability, and infrastructure resilience. The focus is on aligning capital investment with service level expectations while accounting for growth impacts and the increasing complexity of asset management.

11.1 Financial Sustainability & Long-Term Funding Strategy

To achieve the maintained proposed levels of service goals, the Township must address the $1.5 million annual funding gap for tax-funded assets. The following strategies should be considered:

- Structured tax levy increases: Implementing a phased tax increase (e.g., 3.0% annually over 10 years) to close the infrastructure deficit while balancing affordability.
- Reallocating existing revenue sources: Redirecting funding from the asset categories with surpluses to those facing deficits.
- Expanding the use of senior government grants: Prioritizing applications for funding programs such as the Canada Community-Building Fund (CCBF).
- Evaluating debt financing for critical projects: Targeted borrowing may or may not be available for high-priority infrastructure investments.
- Adjusting future budgets for inflation: Ensuring annual infrastructure funding accounts for construction cost escalations and inflationary pressures.

Failure to implement these strategies could result in accelerated asset deterioration, increased maintenance costs, and reduced service reliability, making long-term infrastructure sustainability difficult to achieve.

11.1.1 Table: Tax-Funded Capital Assets – Financial Overview

Category	Description	Projected Impact
Asset Type	All Categories	Infrastructure & Services
Planning Horizon	10-Year Financial Plan	2025–2034
Average Annual Increase	Tax Levy Impact to Support Capital Needs	3.0% per year
Purpose	Maintain Current Service Levels & Infrastructure	Sustainable Investment Model
Risk Consideration	Rising Interest Rates & Debt Servicing Costs, Asset Risk, Maintaining levels of service, Growth	Incorporated into Forecast

11.2 Growth-Related Financial Planning & Asset Rationalization

As the Township's infrastructure portfolio expands, the Township must account for the long-term cost of growth. While new development often brings additional tax revenue, it also creates new financial liabilities for maintenance, rehabilitation, and eventual replacement. To ensure sustainable expansion, the Township should:

- Develop a long-term growth cost model: Incorporate lifecycle funding requirements for new infrastructure in financial planning to avoid creating unfunded liabilities.

- Assess the cost-benefit of new asset acquisitions: Before assuming ownership of new infrastructure, ensure that the long-term maintenance and replacement costs are accounted for.
- Review opportunities for asset disposal: As the Township's portfolio grows, some underutilized or redundant assets may be candidates for divestment, reducing financial strain and allowing reinvestment in critical infrastructure.
- Increase development charge allocations for infrastructure renewal: Ensuring that new developments contribute fairly to the cost of maintaining the overall infrastructure network.

Without integrating growth planning into financial forecasting, the Township risks accumulating infrastructure that cannot be adequately maintained without substantial future tax increases.

11.3 Improving Asset Data for Better Decision-Making

To enhance capital planning and risk management, the Township should:

- Expand condition assessments across all asset classes to reduce reliance on age-based deterioration models.
- Refine risk models to prioritize high-impact assets and optimize capital investment decisions.
- Improve lifecycle cost modelling to identify cost-effective intervention points and maximize infrastructure longevity.
- Leverage emerging technologies (e.g., GIS) for real-time monitoring and predictive maintenance.

Better data will enable more accurate funding requirements and support strategic reinvestment in the Township's growing asset base.

11.4 Conclusion

The Township's infrastructure portfolio is not only expanding but also aging and deteriorating, and increasing financial pressures present significant challenges for effective management and maintenance. To maintain service reliability and compliance with O. Reg. 588/17, the Township must commit

to a phased financial strategy, integrate growth considerations, and optimize asset management practices.

By implementing these recommendations, the Township can balance infrastructure investment, financial sustainability, and community expectations, ensuring long-term resilience and responsible asset stewardship.

Appendices

Appendix A - 10-year Capital Requirements

Appendix B – Level of Service Maps & Photos

Appendix C – Risk Rating Criteria

Appendix D – Additional Asset Portfolio Breakdown by Sub-Segments

Appendix A: 10-Year Capital Requirements

The following tables identify the capital cost requirements for each of the next 10 years in order to meet projected capital requirements and maintain the current level of service.

Road Network											
Asset Segment	**Backlog**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Road Network	$0	$886,346	$424,000	$347,740	$276,000	$1,353,771	$1,752,510	$745,985	$175,480	$122,836	$342,186
Culverts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$199,180
Road Network Total	**$0**	**$886,346**	**$424,000**	**$347,740**	**$276,000**	**$1,353,771**	**$1,752,510**	**$745,985**	**$175,480**	**$122,836**	**$541,366**

Buildings											
Asset Segment	**Backlog**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Buildings											
Environmental services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250,000	$0
Government Services	$0	$0	$0	$0	$0	$0	$150,000	$0	$0	$0	$0
Protective Services	$0	$0	$300,000	$200,000	$0	$0	$500,000	$0	$0	$0	$0
Public Works Services	$0	$20,000	$0	$0	$0	$500,000	$0	$0	$0	$0	$400,000
Recreation and Cultural Services	$0	$50,000	$0	$0	$0	$50,000	$0	$0	$0	$0	$0
Buildings Total	**$0**	**$70,000**	**$300,000**	**$200,000**	**$0**	**$550,000**	**$650,000**	**$0**	**$0**	**$250,000**	**$400,000**

Machinery & Equipment											
Asset Segment	**Backlog**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Machinery & Equipment											
Environmental Services	$0	$12,000	$0	$0	$13,000	$0	$0	$30,000	$0	$0	$43,000
Government Services	$0	$0	$0	$0	$0	$15,000	$17,000	$0	$0	$0	$0
Protective Services	$0	$401,000	$75,000	$0	$0	$0	$30,000	$8,000	$120,000	$25,000	$0
Public Works Services	$0	$0	$0	$0	$93,000	$0	$22,400	$1,380,000	$0	$0	$0
Recreation and Cultural Services	$0	$6,000	$0	$0	$0	$0	$0	$0	$0	$0	$90,000
Machinery & Equipment Total	**$0**	**$419,000**	**$75,000**	**$0**	**$106,000**	**$15,000**	**$69,400**	**$1,418,000**	**$120,000**	**$25,000**	**$133,000**

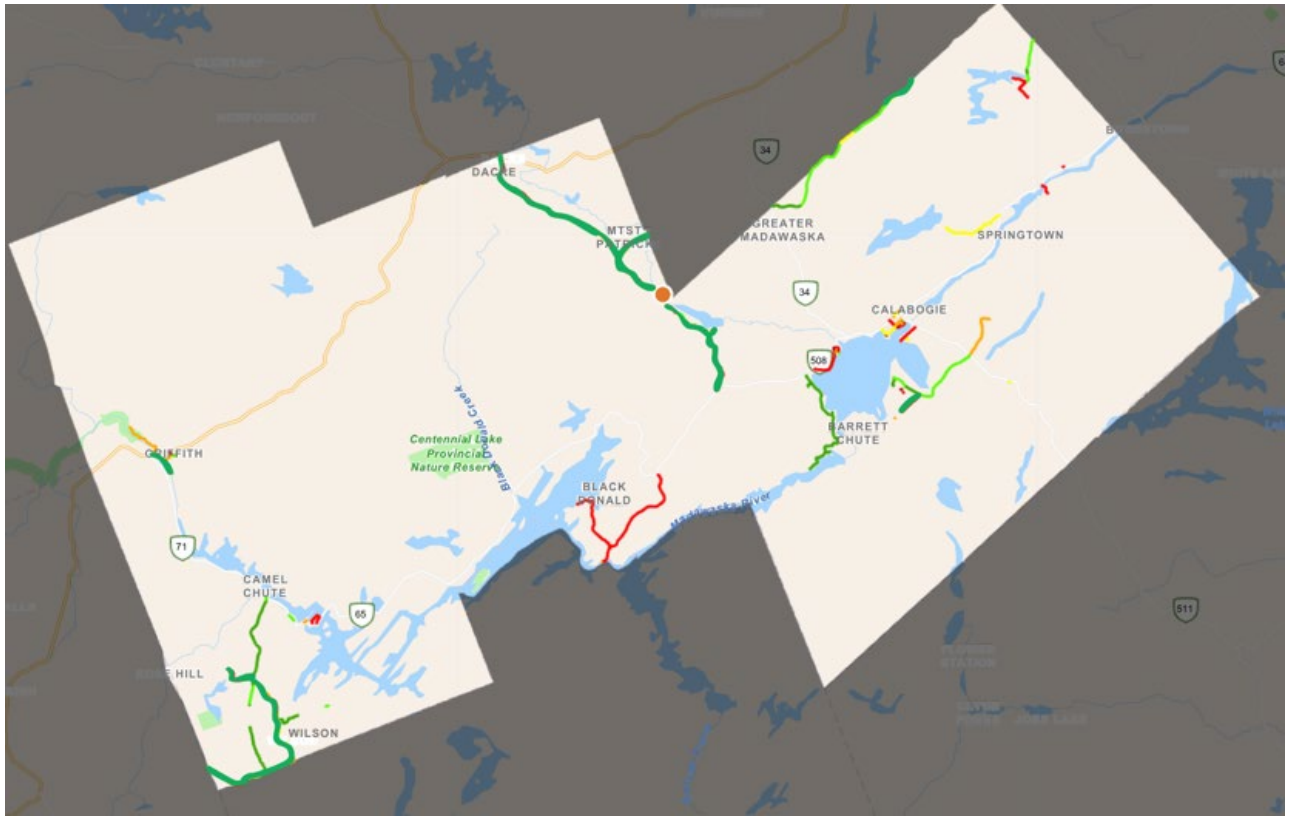
Vehicles											
Asset Segment	**Backlog**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Vehicles											
Environment Services	$0	$0	$0	$0	$180,000	$250,000	$0	$0	$0	$0	$0
Protective Services	$0	$0	$110,000	$0	$120,000	$850,000	$480,000	$0	$880,000	$1,006,000	$0
Public Works Services	$0	$0	$110,000	$470,000	$430,000	$410,000	$410,000	$150,000	$365,000	$710,000	$185,000
Recreation and Cultural Services	$0	$20,000	$0	$0	$0	$60,000	$0	$0	$0	$75,000	$0
Vehicles Total	**$0**	**$20,000**	**$220,000**	**$470,000**	**$730,000**	**$1,570,000**	**$890,000**	**$150,000**	**$1,245,000**	**$1,791,000**	**$185,000**

Buildings											
Asset Segment	**Backlog**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Buildings											
Environmental services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250,000	$0
Government Services	$0	$0	$0	$0	$0	$0	$150,000	$0	$0	$0	$0
Protective Services	$0	$0	$300,000	$200,000	$0	$0	$500,000	$0	$0	$0	$0
Public Works Services	$0	$20,000	$0	$0	$0	$500,000	$0	$0	$0	$0	$400,000
Recreation and Cultural Services	$0	$50,000	$0	$0	$0	$50,000	$0	$0	$0	$0	$0
Buildings Total	**$0**	**$70,000**	**$300,000**	**$200,000**	**$0**	**$550,000**	**$650,000**	**$0**	**$0**	**$250,000**	**$400,000**

All Assets											
Asset Segment	**Backlog**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Buildings	$0	$70,000	$300,000	$200,000	$0	$550,000	$650,000	$0	$0	$250,000	$400,000
Land Improvements	$0	$15,000	$0	$0	$50,000	$150,000	$0	$10,000	$15,000	$0	$922,000
Machinery & Equipment	$0	$419,000	$75,000	$0	$106,000	$15,000	$69,400	$1,418,000	$120,000	$25,000	$133,000
Road Network	$0	$886,346	$424,000	$347,740	$276,000	$1,353,771	$1,752,510	$745,985	$175,480	$122,836	$541,366
Vehicles	$0	$20,000	$220,000	$470,000	$730,000	$1,570,000	$890,000	$150,000	$1,245,000	$1,791,000	$185,000
Total All Assets	**$0**	**$1,410,346**	**$1,019,000**	**$1,017,740**	**$1,162,000**	**$3,638,771**	**$3,361,910**	**$2,323,985**	**$1,555,480**	**$2,188,836**	**$2,181,366**

Appendix B: Current Level of Service Maps

Road Network Map



Appendix C: Risk Rating Criteria

11.4.1.1 Probability of Failure

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
Road Network Buildings Vehicles Machinery & Equipment Land Improvements	Condition	100%	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
			Ductile Iron	4
			Asbestos Cement	3
			Copper	3

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
			Riveted Steel	3
			HDPE	2
			PVC	2

11.4.1.2 Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Road Network	Economic (80%)	Replacement Cost (100%)	$0-25,000	1
			$25,001-100,000	2
			$100,001-500,000	3
			$500,001-$1,000,000	4
			$1,000,001 - $4,000,000	5
	Social (20%)	Road Class (20%)	6	1
			5	2
			3-4	3
			2	4

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
			1	5
Buildings	Economic (80%)	Replacement Cost (100%)	$0-$10,000	1
			$10,001-$40,000	2
			$40,001-$100,000	3
			$100,001-$500,000	4
			$500,001-1,000,000	5
	Social (20%)	Department (100%)	Environmental Services	2
			Government Services	2
			Recreation and Cultural Services	2

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
			Public Works Services	4
			Protective Services	5

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Vehicles	Economic (80%)	Replacement Cost (100%)	$0-$5,000	1
			$5,001-$10,000	2
			$10,001-$20,000	3
			$20,001-$40,000	4
			$40,001-650,000	5
	Social	Department	Environmental Services	2

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
	(20%)	(100%)	Government Services	2
			Recreation and Cultural Services	2
			Public Works Services	4
			Protective Services	5
Machinery & Equipment	Economic (80%)	Replacement Cost (100%)	$0-$10,000	1
			$10,001-$30,000	2
			$30,001-$70,000	3
			$70,001-$150,000	4
			$150,001-350,000	5

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
	Social (20%)	Department (100%)	Environmental Services	2
			Government Services	2
			Recreation and Cultural Services	2
			Public Works Services	4
			Protective Services	5

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Land Improvements	Economic (80%)	Replacement Cost (100%)	$0-$10,000	1
			$10,001-$20,000	2
			$20,001-$50,000	3

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
			$50,001-$100,000	4
			$100,001-450,000	5
	Social (20%)	Department (100%)	Environmental Services	2
			Government Services	2
			Recreation and Cultural Services	2
			Public Works Services	4
			Protective Services	5