

Asset Management Plan 2025

Town of Atikokan

September 2025



This Asset Management Plan was prepared by:



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

Key Statistics

\$233m 2023 Replacement Cost of Asset Portfolio

\$233k Replacement Cost of Infrastructure Per Household

26% Percentage of Assets in Fair or Better Condition

14% Percentage of Assets with Assessed Condition Data

\$2.7m Annual Capital Infrastructure Deficit

20 Years Recommended Timeframe for Eliminating Annual Infrastructure Deficit

2.6% Target Reinvestment Rate

1.4% Actual Reinvestment Rate

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1. Executive Summary

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

1.1 Scope

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

This AMP include the following asset categories:



Figure 1 Core and Non-Core Asset Categories

1.2 O. Reg. 588/17 Compliance

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

1.3 Findings

The overall replacement cost of the asset categories included in this AMP totals \$232.9 million. 26% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 14% of assets. For the remaining 86% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

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

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Town's average annual capital requirement totals \$6 million. Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately \$3.3 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of \$2.7 million.

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

1.4 Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax/rate change required to eliminate the Town’s infrastructure deficit based on a 20-year plan:

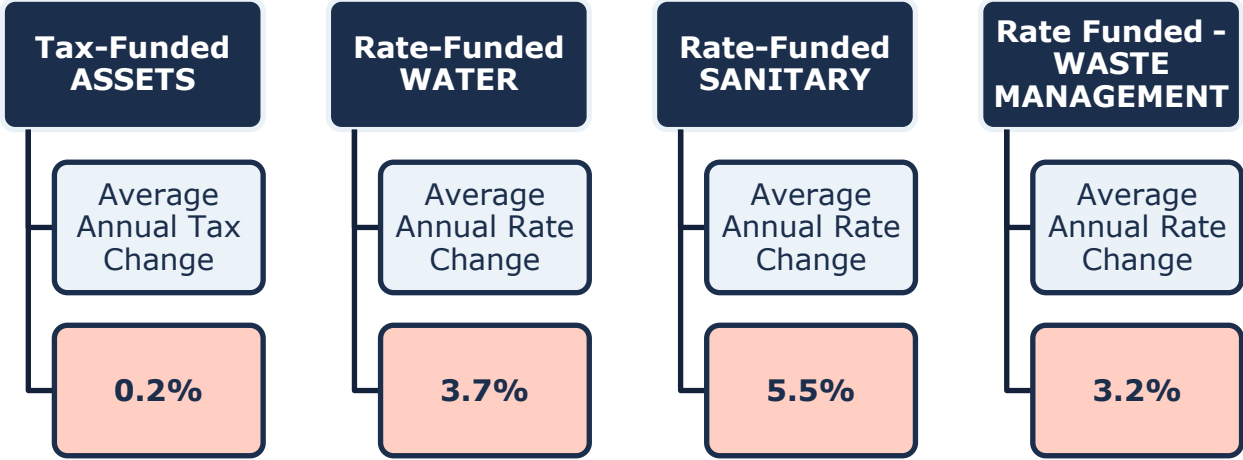


Figure 2 Proposed Tax/Rate Changes

2. Introduction & Context

2.1 Community Profile

The Town of Atikokan is a single-tier municipality and part of the Rainy River District which is located in northwestern Ontario. Atikokan is one of the main entry points and positioned north of the Quetico Provincial Park.

Atikokan, originally a stopover on the Canadian Northern Railway, was officially established in 1954. Its development was heavily influenced by the mining and logging industries, which were the Town's primary economic drivers for many years. Over time, as these industries declined, Atikokan transitioned towards promoting tourism, especially focusing on its proximity to natural attractions like Quetico Provincial Park and began exploring renewable energy projects to diversify its economy.

The region around Atikokan is characterized by its expansive wilderness and numerous water bodies, making it a prime destination for those interested in outdoor recreation such as canoeing, fishing, and backcountry camping. Its proximity to Quetico Provincial Park enhances its appeal as a hub for eco-tourism and wilderness adventures. The region's boreal forests also provide a habitat for diverse wildlife, adding to its attraction for nature enthusiasts and photographers.

Demand in Atikokan is primarily driven by the tourism and renewable energy sectors. The Town capitalizes on its natural setting to attract ecotourists, while also focusing on developing sustainable energy projects to diversify and strengthen its economy. Seasonal activities further boost demand, drawing visitors for events like fishing tournaments and seasonal sports. Additionally, the development of hydroelectric power and other renewable energy initiatives offers economic growth opportunities and attracts investment to the area.

The Town Atikokan's infrastructure priorities include stimulating economic growth, protecting the environment, and promoting sustainable resource use. The Town focuses on economically and environmentally sustainable development, avoiding risk-prone areas, and implementing resource-efficient development patterns to enhance public health and maintain its rural character.

Census Characteristic	Town of Atikokan	Ontario
Population 2021	2,642	14,223,942
Population Change 2016-2021	-4.0%	5.8%
Total Private Dwellings	1,464	5,929,250
Population Density	8.4/km ²	15.9/km ²
Land Area	372.96 km ²	892,411.76 km ²

Table 1 Town of Atikokan Community Profile

2.2 Climate Change

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

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

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

2.2.1 Town of Atikokan Climate Profile

The Town of Atikokan is located in northwestern Ontario within the Rainy River District. The Town is expected to experience notable effects of climate change which include higher average annual temperatures, an increase in total annual precipitation, and an increase in the frequency and severity of extreme events. According to Climatedata.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – the Town of Atikokan may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1971 and 2000 the annual average temperature was 2.4 °C
- Under a high emissions scenario, the annual average temperatures are projected to increase to 4.4 °C by the year 2050 and over 6.5°C by the end of the century.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, Atikokan is projected to experience a 9% increase in precipitation by the year 2050 and a 12% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

- It is expected that the frequency and severity of extreme weather events will change.
- In some areas, extreme weather events will occur with greater frequency and severity than others, especially those impacted by Great Lake winds.

2.2.2 Lake Superior

Lake Superior, the largest and northernmost of the Great Lakes, holds about 10% of the world's fresh surface water, making it a critical resource for the approximately 23 million people living within its watershed. The lake's vast expanse influences local climates, leading to significant weather patterns, including powerful gales, heavy snows in the winter, and dramatic temperature shifts, which can challenge the municipalities around its shores. These weather events pose risks of coastal erosion, property damage, and impacts on local infrastructure, highlighting the need for robust, climate-resilient planning and construction practices among the communities that depend on Lake Superior.

The ecosystem's health and the quality of water in Lake Superior are increasingly at risk due to climate change, which contributes to unusual temperature fluctuations, increased storm intensity, and pollution from urban and agricultural runoff. These environmental pressures threaten drinking water supplies, fish populations, and recreational water activities, underscoring the importance of sustainable watershed management and protective measures against pollution and habitat destruction. The integrity of municipal water systems, the prevention of property loss due to erosion, and the overall public safety and well-being of the lake's surrounding communities depend on concerted efforts to mitigate these impacts through careful environmental stewardship and infrastructure adaptation.

2.2.3 Integration of Climate Change and Asset Management

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

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

2.3 Asset Management Overview

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

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

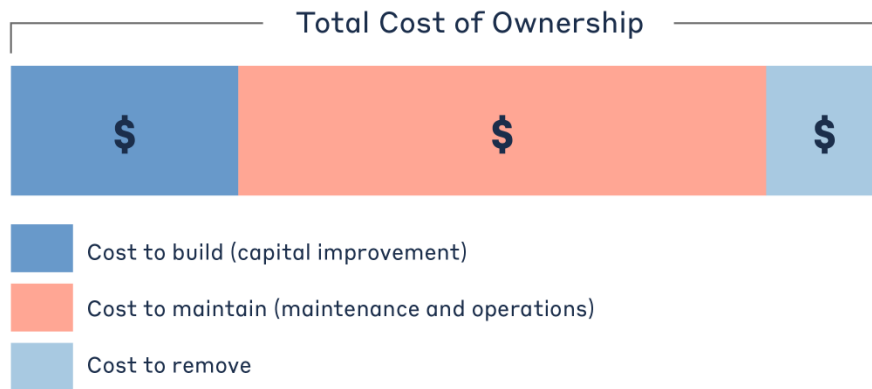


Figure 3 Total Cost of Asset Ownership

These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

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

2.3.1 Foundational Asset Management Documentation

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

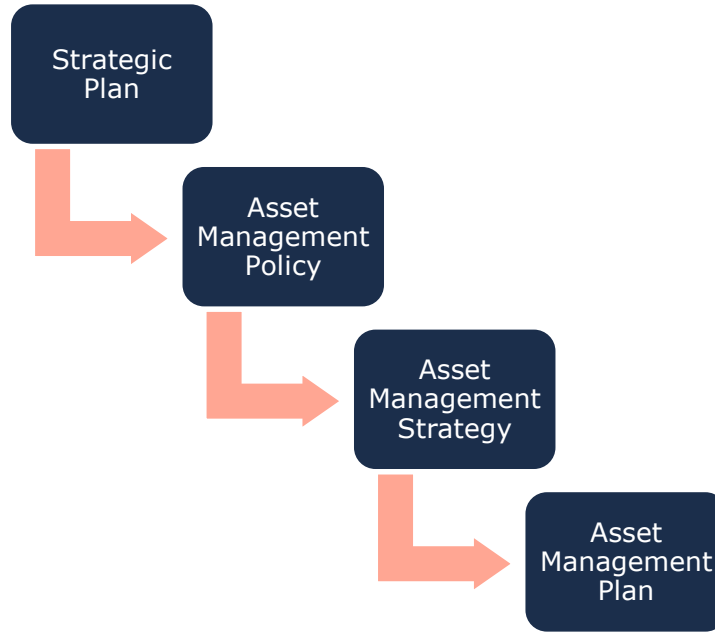


Figure 4 Foundational Asset Management Documents

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

Asset Management Policy

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

The Town adopted By-law No. 24-19 “A By-law to Adopt a Strategic Asset Management Policy” on June 24th, 2019, in accordance with Ontario Regulation 588/17.

The Policy seeks to incorporate several principles into the Town’s day-to-day operations, including:

- Forward Looking
- Infrastructure Prioritization
- Transparency & Evidence Based Decisions
- Innovation
- Community Focused

Asset Management Strategy

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

Several of the recommendations throughout this report highlight specific actions and practices that are expected to improve the Municipality's Asset management practices, internal capacity and cognizance, and resultant decisions. Thus, these recommendations serve informally as an Asset Management Strategy and provide a framework of planned activities to operationalize and support the delivery of the asset management objectives as defined in the policy.

Asset Management Plan

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

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

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

2.3.2 Key Concepts in Asset Management

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

Lifecycle Management Strategies

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its

intended function, and may be characterized by increased cost, risk and even service disruption.

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

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

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

Lifecycle Activity	Cost	Typical Associated Risks
<p>Maintenance</p> <p>Activities that prevent defects or deteriorations from occurring</p>	<p>\$</p>	<ul style="list-style-type: none"> Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions; Diminishing returns associated with excessive maintenance activities, despite added costs; Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
<p>Rehabilitation/ Renewal</p> <p>Activities that rectify defects or deficiencies that are already present and may be affecting asset performance</p>	<p>\$\$\$</p>	<ul style="list-style-type: none"> Useful life may not be extended as expected; May be costlier in the long run when assessed against full reconstruction or replacement; Loss or disruption of service, particularly for underground assets;

Lifecycle Activity	Cost	Typical Associated Risks
<p>Replacement/ Reconstruction</p> <p>Asset end-of-life activities that often involve the complete replacement of assets</p>	<p>\$\$\$\$ \$</p>	<ul style="list-style-type: none"> • Incorrect or unsafe disposal of existing asset; • Costs associated with asset retirement obligations; • Substantial exposure to high inflation and cost overruns; • Replacements may not meet capacity needs for a larger population; • Loss or disruption of service, particularly for underground assets;

Table 2 Lifecycle Management: Typical Lifecycle Interventions

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

Risk & Criticality

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

Risk is a product of two variables: the probability that an asset will fail, and the resulting consequences of that failure event. It can be a qualitative measurement, (i.e. low, medium, high) or quantitative measurement (i.e. 1-5), that can be used to rank assets and projects, identify appropriate

lifecycle strategies, optimize short- and long-term budgets, minimize service disruptions, and maintain public health and safety.

Formula to Assess Risk of Assets

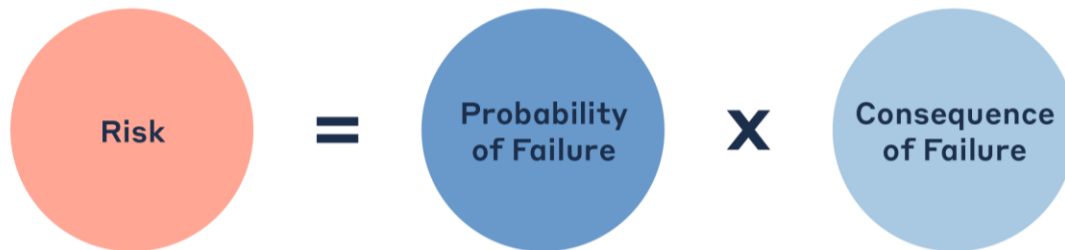


Figure 5 Risk Equations

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

Probability of Failure

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

Consequence of Failure

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

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

Type of Consequence	Description
<i>Direct Financial</i>	Direct financial consequences are typically measured as the replacement costs of the asset(s) affected by the failure event, including interdependent infrastructure.
<i>Economic</i>	Economic impacts of asset failure may include disruption to local economic activity and commerce, business closures, service disruptions, etc. Whereas direct financial impacts can be seen immediately or estimated within hours or days, economic impacts can take weeks, months and years to emerge, and may persist for even longer.
<i>Socio-political</i>	Socio-political impacts are more difficult to quantify and may include inconvenience to the public and key community stakeholders, adverse media coverage, and reputational damage to the community and the Municipality.
<i>Environmental</i>	Environmental consequences can include pollution, erosion, sedimentation, habitat damage, etc.
<i>Public Health and Safety</i>	Adverse health and safety impacts may include injury or death, or impeded access to critical services.
<i>Strategic</i>	These include the effects of an asset's failure on the community's long-term strategic objectives, including economic development, business attraction, etc.

Table 3 Risk Analysis: Types of Consequences of Failure

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

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

Levels of Service

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

The Town measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service. This AMP includes those LOS that are required under O. Reg. 588/17 as well as any additional metrics the Town wishes to track.

Community Levels of Service

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

Technical Levels of Service

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

For core asset categories as applicable (Roads, Bridges & Culverts, Stormwater, Water, and Sanitary) the province, through O. Reg. 588/17, has also provided technical metrics that are required to be included in this AMP.

Current and Proposed Levels of Service

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

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

requires municipalities to demonstrate the achievability of their selected metrics.

2.4 Scope & Methodology

2.4.1 Asset Categories for this AMP

This asset management plan for the Town of Atikokan is produced in compliance with O. Reg. 588/17. The July 2024 deadline under the regulation—the second of three AMPs—requires analysis of core and non-core asset categories.

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

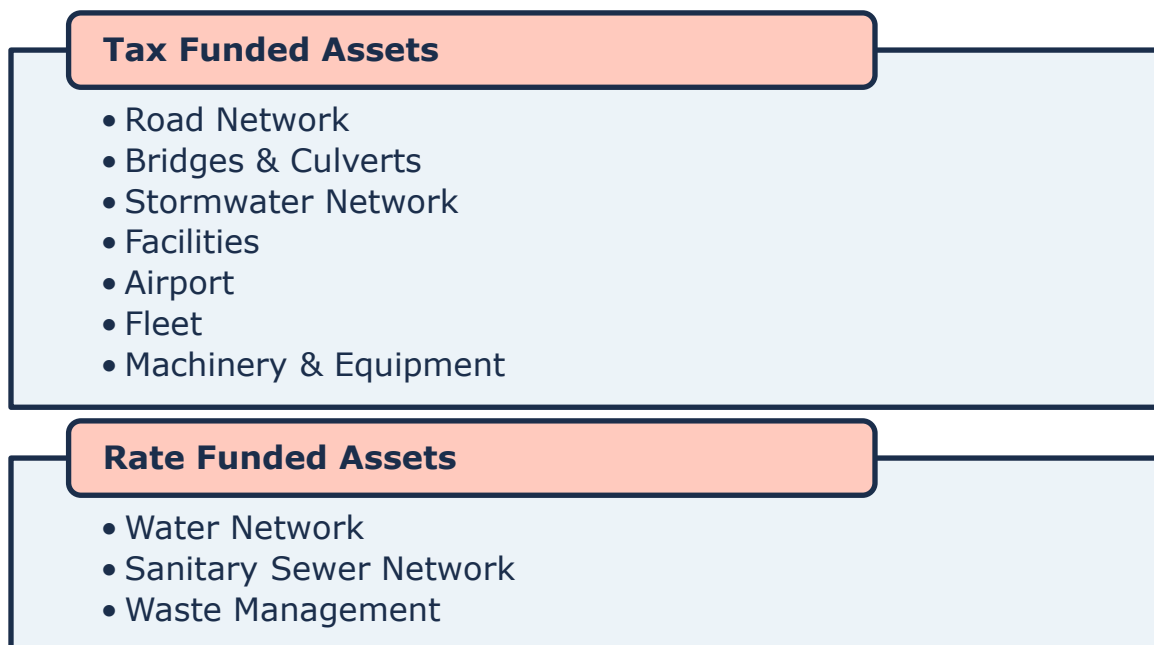


Figure 6 Tax Funded and Rate Funded Asset Categories

2.4.2 Data Effective Date

It is important to note that this plan is based on data as of **December 2023**; therefore, it represents a snapshot in time using the best available processes, data, and information at the Municipality. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.4.3 Deriving Replacement Costs

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

User-Defined Cost and Cost Per Unit

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

Cost Inflation / CPI Tables

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

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

2.4.4 Estimated Service Life & Service Life Remaining

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

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



Figure 7 Service Life Remaining Calculation

2.4.5 Reinvestment Rate

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

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



Figure 8 Target Reinvestment Rate Calculation

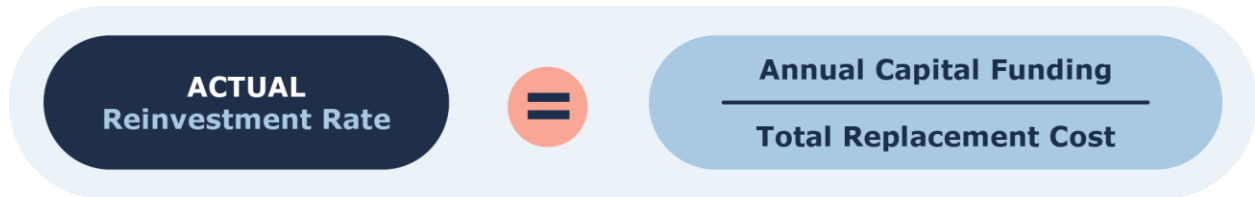


Figure 9 Actual Reinvestment Rate Calculation

2.4.6 Deriving Asset Condition

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

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

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

Table 4 Standard Condition Rating Scale

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

Condition vs. Suitability

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

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

2.5 Ontario Regulation 588/17

As part of the Infrastructure for Jobs and Prosperity Act, 2015, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17)¹. Along with creating better performing organizations, more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

Figure 10 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

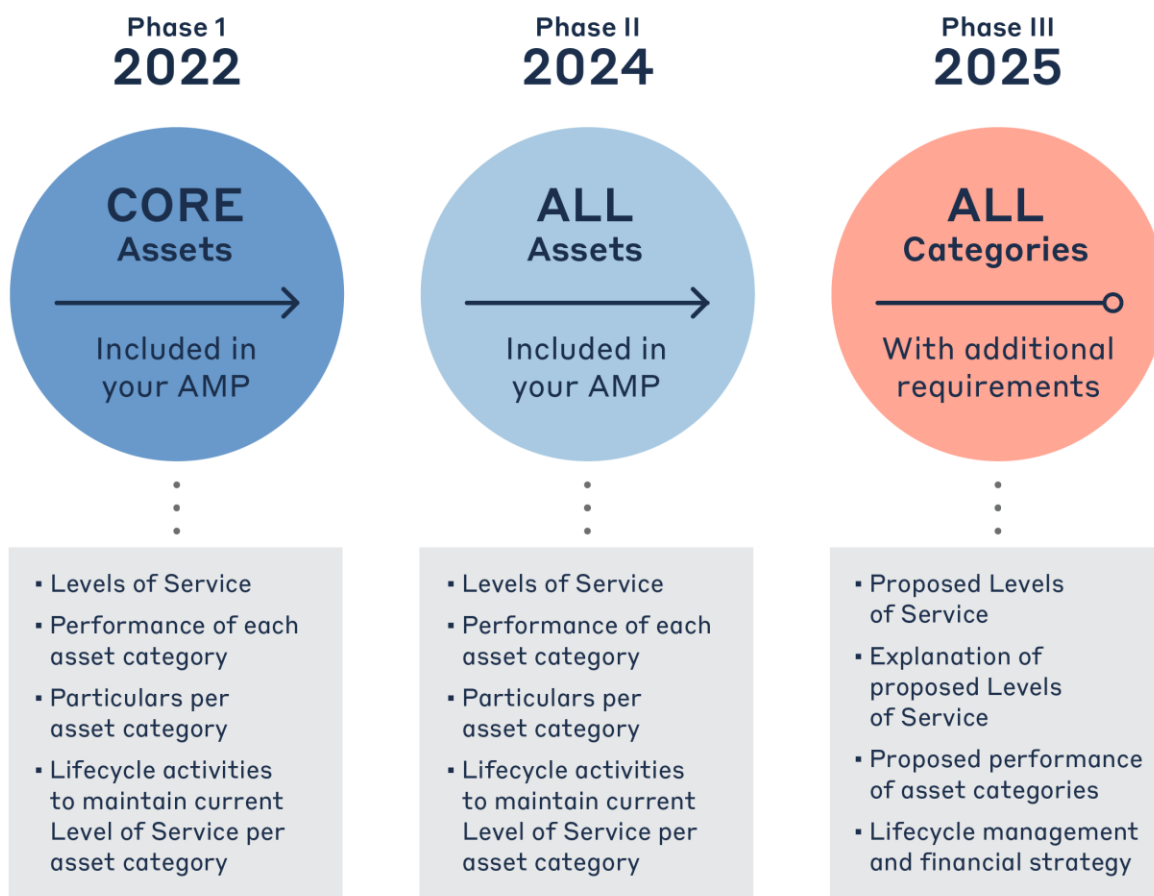


Figure 10 O. Reg. 588/17 Requirements and Reporting Deadlines

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

2.5.1 O. Reg. 588/17 Compliance Review

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1 – 13.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1 – 13.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.3 – 13.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.2 – 13.2	Complete
Description of municipality’s approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.4 – 13.4	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.7 – 13.7	Complete
Current performance measures in each category	S.5(2), 2	4.7 – 13.7	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.4 – 13.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete
Growth considerations	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	14.1 – 14.2	Complete
Proposed levels of service for each category for next 10 years	S.6(1), 1(i-ii)	4.7.3 – 13.7.3	Complete
Explanation of appropriateness of proposed levels of service	S.6(1), 2(i-iv)	4.7.3 – 13.7.3	Complete

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Lifecycle management activities for proposed levels of service	S.6(1), 4(i)	4.7.3 – 13.7.3	Complete
10-year capital costs for proposed levels of service	S.6(1), 4(ii)	Appendix A	Complete
Annual funding availability projections	S.6(1), 4(iii)	Appendix A	Complete

Table 5 O. Reg. 588/17 Compliance Review

3. Portfolio Overview – State of the Infrastructure

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

3.1 Asset Hierarchy & Data Classification

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



Figure 11 Asset Hierarchy and Data Classification

3.2 Portfolio Overview

3.2.1 Total Replacement Cost of Asset Portfolio

The ten asset categories analyzed in this Asset Management Plan have a total current replacement cost of \$232.9 million. This estimate was calculated using user-defined costing, as well as inflation of historical or original costs to current date. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today. Figure 12 illustrates the replacement cost of each asset category; at 30% of the total portfolio, the sewer network forms the largest share of the Town’s asset portfolio, followed by the water network at 19%.

Total Current Replacement Cost: \$232,918,552

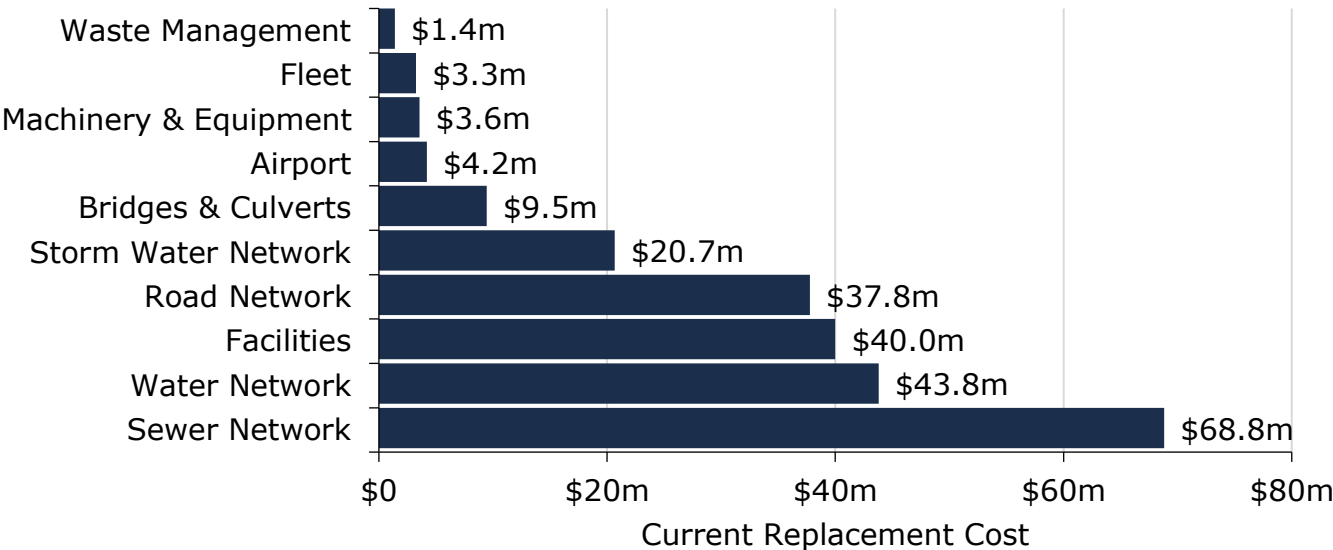


Figure 12 Current Replacement Cost by Asset Category

3.2.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps by comparing the target to the current reinvestment rate. To meet the existing long-term capital requirements, the Town requires an annual capital investment of \$6.0 million, for a target portfolio reinvestment rate of 2.6%. Currently, the annual investment from sustainable revenue sources is \$2.7 million, for a current portfolio reinvestment rate of 1.4%. Target and current re-investment rates by asset category are detailed below.

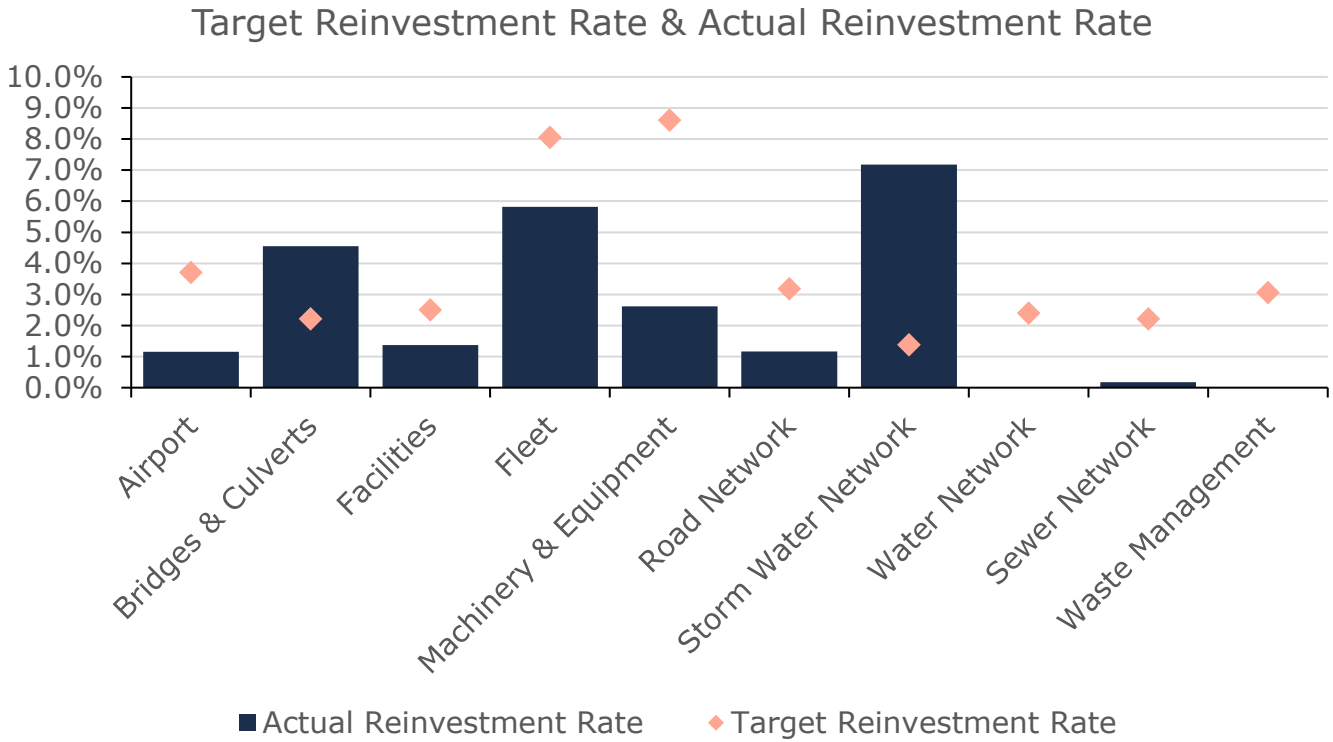


Figure 13 Current Vs. Target Reinvestment Rate

3.2.3 Condition of Asset Portfolio

Figure 14 summarize asset conditions at the category level. Based on both assessed condition and age-based analysis, 26% of the Town’s infrastructure portfolio is in fair or better condition, with the remaining 74% in poor or worse condition. Typically, assets in poor or worse condition may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

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

Condition data was available for majority of the road network and bridges & culverts. For all remaining assets, including major infrastructure such as storm mains and buildings, age was used as an approximation of condition for most of these assets. Age-based condition estimations can skew data and lead to potential under- or overstatement of asset needs.

Further, when assessed condition data was available, it was projected to current year (2023). This 'projected condition' can generate lower condition ratings than those established at the time of the condition assessment. The rate of this deterioration will also depend on lifecycle curves used to project condition over time. See Table 6 for details on how condition data was derived for each asset segment.

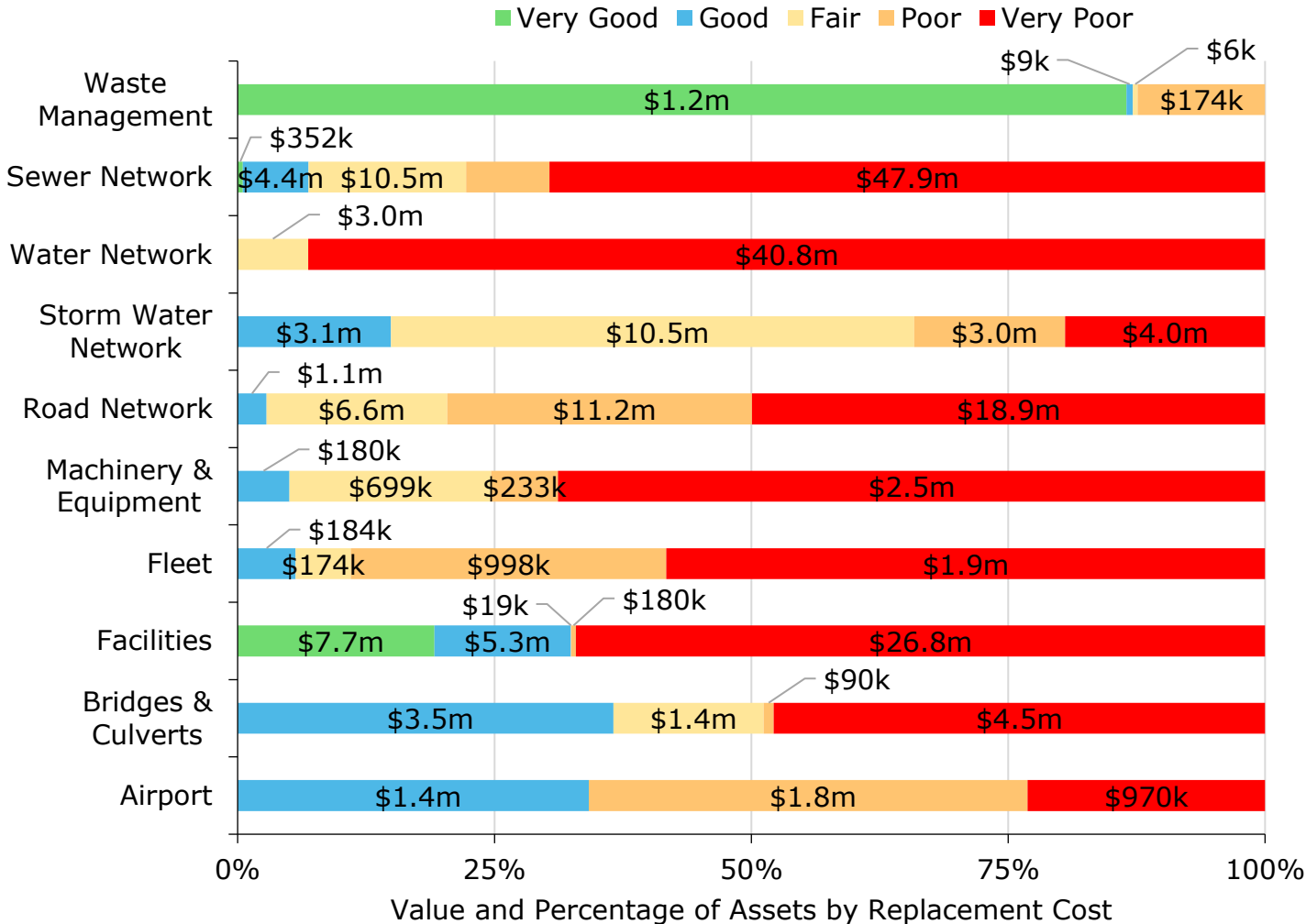


Figure 14 Asset Condition by Asset Category

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

Source of Condition Data

This AMP relies on assessed condition for 14% of assets, based on and weighted by replacement cost. For the remaining assets, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment(s)	% of Assets with Assessed Conditions	Source of Condition Data
Road Network	Paved Roads	82%	Street Scan Data
Bridges & Culverts	Bridges Structural Culverts Pedestrian Bridges	100%	2023 OSIM Report
Water Network	All	0%	Age-Based
Sewer Network	All	0%	Age-Based
Stormwater Network	All	0%	Age-Based
Waste Management	All	0%	Age-Based
Facilities	All	0%	Age-Based
Airport	All	0%	Age-Based
Fleet	All	0%	Age-Based
Machinery & Equipment	All	0%	Age-Based

Table 6 Source of Condition Data

3.2.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 70% of the Town’s assets will require replacement within the next 10 years (not accounting for asset replacement backlog).

3.2.5 Risk Matrix

Using the risk equation and preliminary risk models, Figure 15 shows how assets across the different asset categories are stratified within a risk matrix.

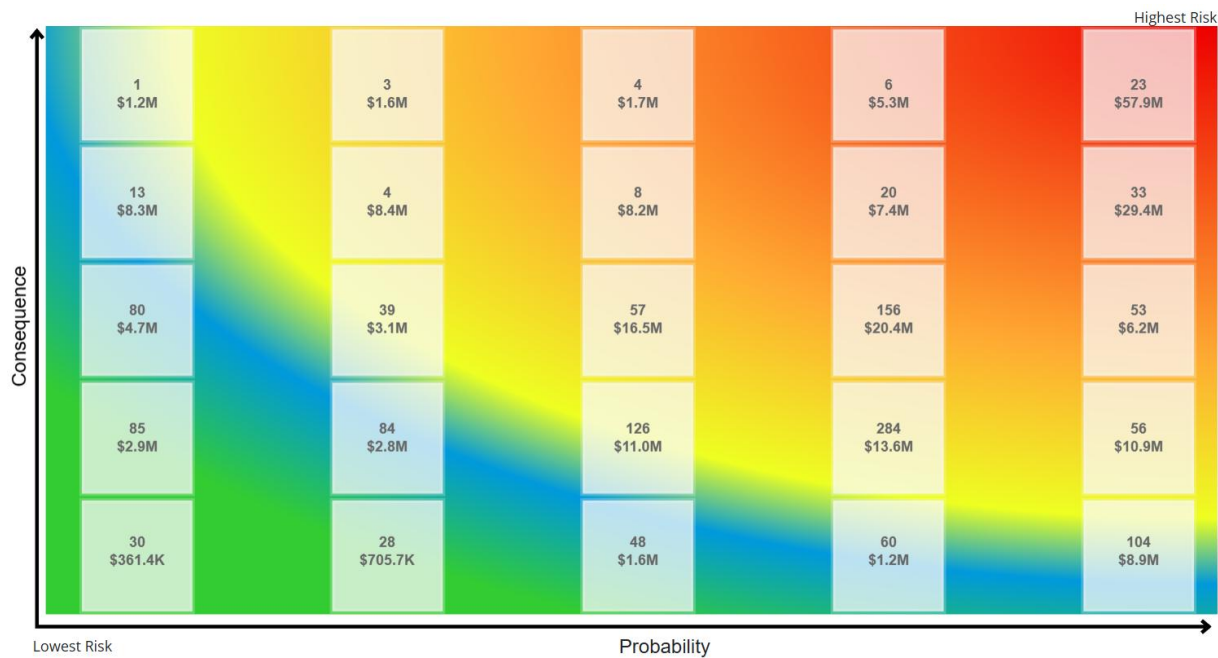


Figure 15 Risk Matrix: All Assets

The analysis shows that based on current risk models, approximately 49% of the Town’s assets, with a current replacement cost of approximately \$115 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates and were considered to be most essential to the Town.

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

We caution that since risk ratings rely on many factors beyond an asset’s physical condition or age, assets in a state of disrepair can sometimes be classified as low-risk, despite their poor condition rating. In such cases,

although the probability of failure for these assets may be high, their consequence of failure ratings were determined to be low based on the attributes used and the data available.

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

3.2.6 Forecasted Capital Requirements

Aging assets require maintenance, rehabilitation, and replacement. Figure 16 below illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for all asset categories analyzed in this AMP over a 60-year time horizon. On average, \$6 million is required each year to remain current with capital replacement needs for the Town’s asset portfolio. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. This figure relies on age and available condition data.

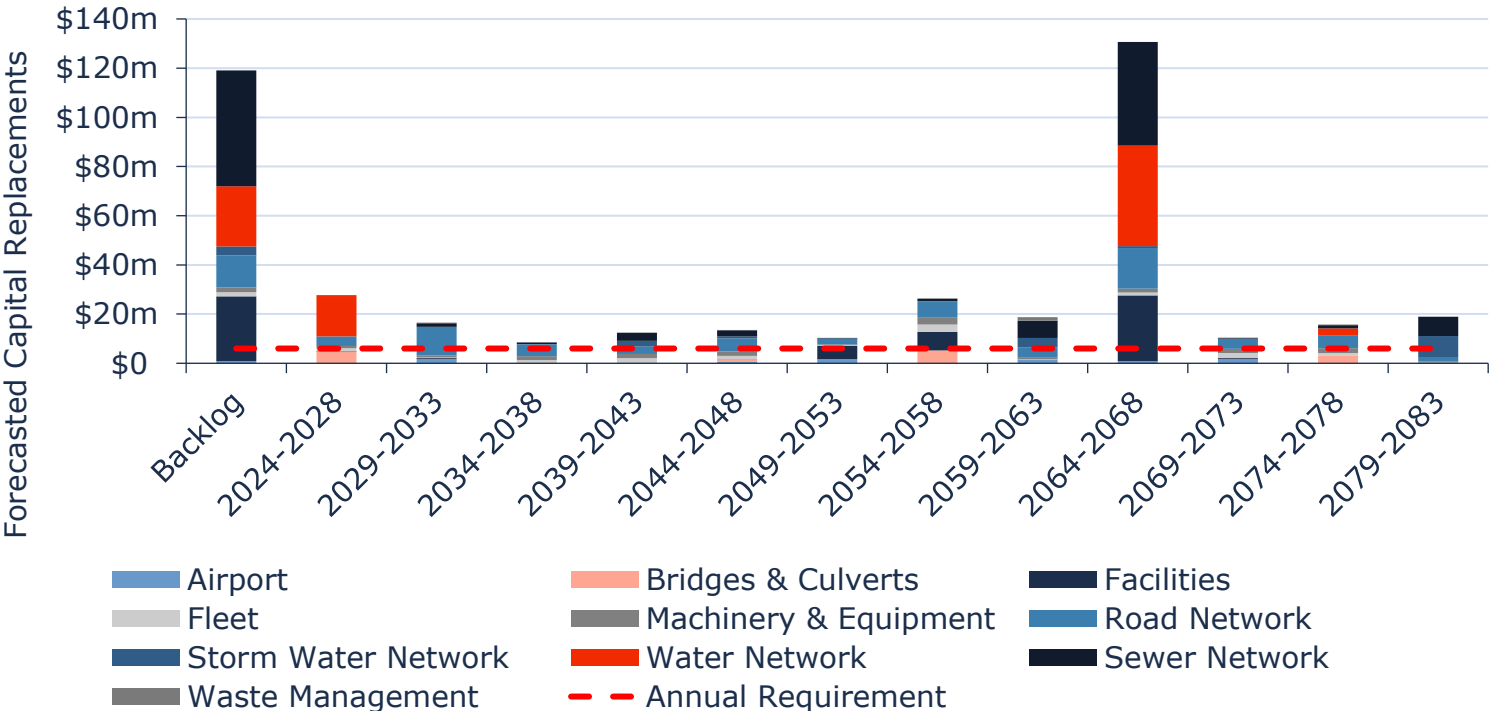


Figure 16 Capital Replacement Needs: Portfolio Overview 2024-2083

The chart also illustrates a backlog of more than \$119 million, comprising assets that remain in service beyond their estimated useful life. It is unlikely that all such assets are in a state of disrepair, requiring immediate replacements. This makes continued and expanded targeted and consistent condition assessments integral. Risk frameworks, proactive lifecycle strategies, and levels of service targets can then be used to prioritize projects, continuously refine estimates for both backlogs and ongoing capital needs and help select the right treatment for each asset. In addition, more effective componentization of buildings will improve these projections, including backlog estimates.

Core Assets

Road Network



Replacement Cost	Average Condition	Financial Capacity	
\$37.8 m	Poor	Annual Requirement:	\$1,202,000
		Funding Available:	\$438,000
		Annual Deficit:	\$764,000

Bridges & Culverts



Replacement Cost	Average Condition	Financial Capacity	
\$9.5 m	Poor	Annual Requirement:	\$209,000
		Funding Available:	\$430,000
		Annual Deficit:	(\$221,000)

Water Network



Replacement Cost	Average Condition	Financial Capacity	
\$43.8 m	Very Poor	Annual Requirement:	\$1,050,000
		Funding Available:	\$0
		Annual Deficit:	\$1,050,000

Sewer Network



Replacement Cost	Average Condition	Financial Capacity	
\$68.8 m	Very Poor	Annual Requirement:	\$1,527,000
		Funding Available:	\$124,000
		Annual Deficit:	\$1,403,000

Stormwater Network



Replacement Cost	Average Condition	Financial Capacity	
\$20.7 m	Fair	Annual Requirement:	\$285,000
		Funding Available:	\$1,484,000
		Annual Deficit:	(\$1,199,000)

4. Road Network

The Road Network is a critical component of the provision of safe and efficient transportation services and is one of the highest value asset categories. It includes all municipally owned and maintained roadways as well as sidewalks, road culverts and streetlights. The Town’s road assets are maintained by the Public Works department.

4.1 Inventory & Valuation

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Asphalt Roads	38,020	Length km)	\$27,794,000	User-Defined
Surface Treated Roads	21,478	Length (m)	\$5,446,000	Cost/Unit
Curbs	16,218	Length (m)	\$2,400,000	User-Defined
Sidewalks	630	Length (m)	\$1,487,000	Cost/Unit
Streetlights	1,420	Quantity	\$632,000	User-Defined
TOTAL			\$37,759,000	

Table 7 Detailed Asset Inventory: Road Network

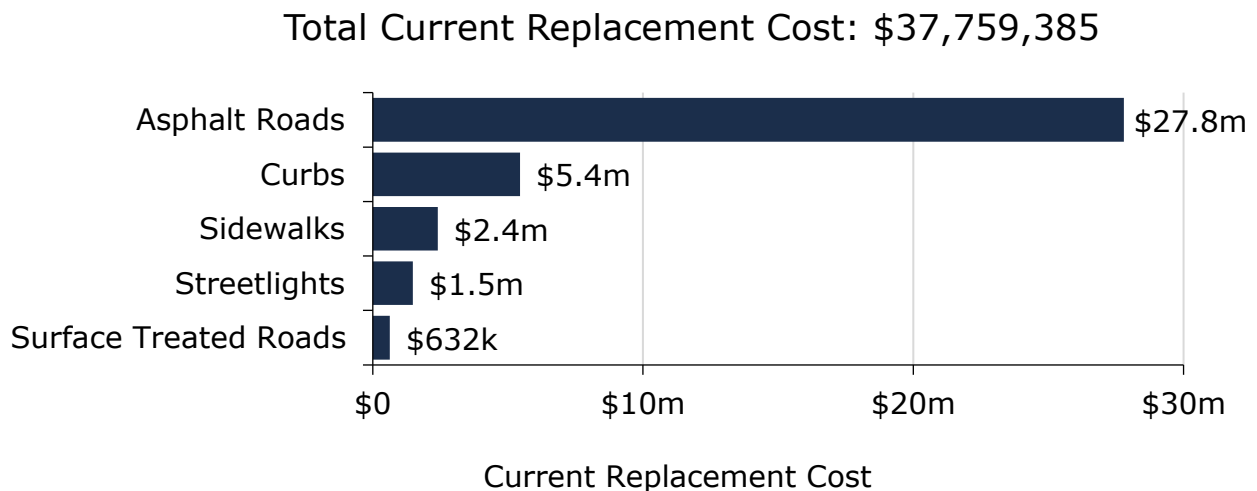


Figure 17 Portfolio Valuation: Road Network

4.2 Asset Condition

Figure 18 summarizes the replacement cost-weighted condition of the Town’s road network. Based on a combination of field inspection data and age, 20% of assets are in fair or better condition; the remaining 80% of assets are in poor to very poor condition. Condition assessments were available for 100% of roads, based on replacement cost. This condition data was projected from inspection date to current year to estimate their condition today. No condition data was available for the remaining asset types.

Assets in poor or worse condition may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As illustrated in Figure 18, the majority of the Town’s road network assets are in fair or better condition.

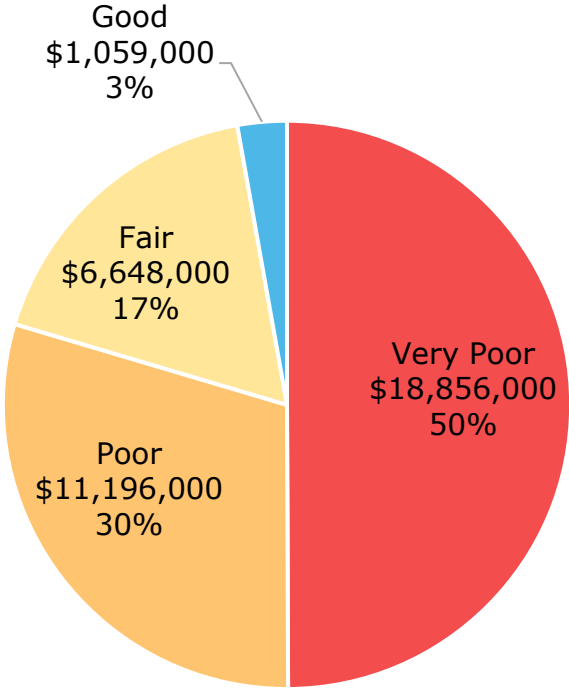


Figure 18 Asset Condition: Road Network Overall

As illustrated in Figure 19, based on condition assessments, the majority of the Town’s road network is in poor or worse condition; however, 100% of streetlights are in fair condition.

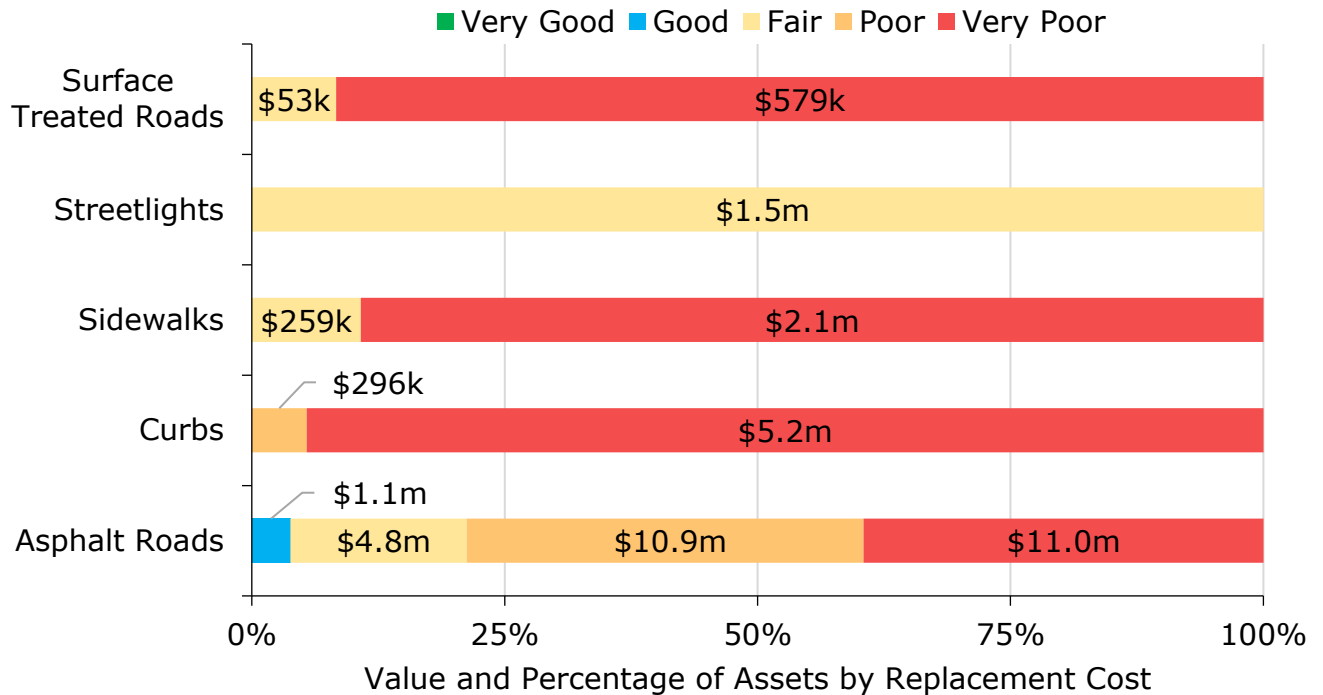


Figure 19 Asset Condition: Road Network by Segment

4.3 Age Profile

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

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

Figure 20 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

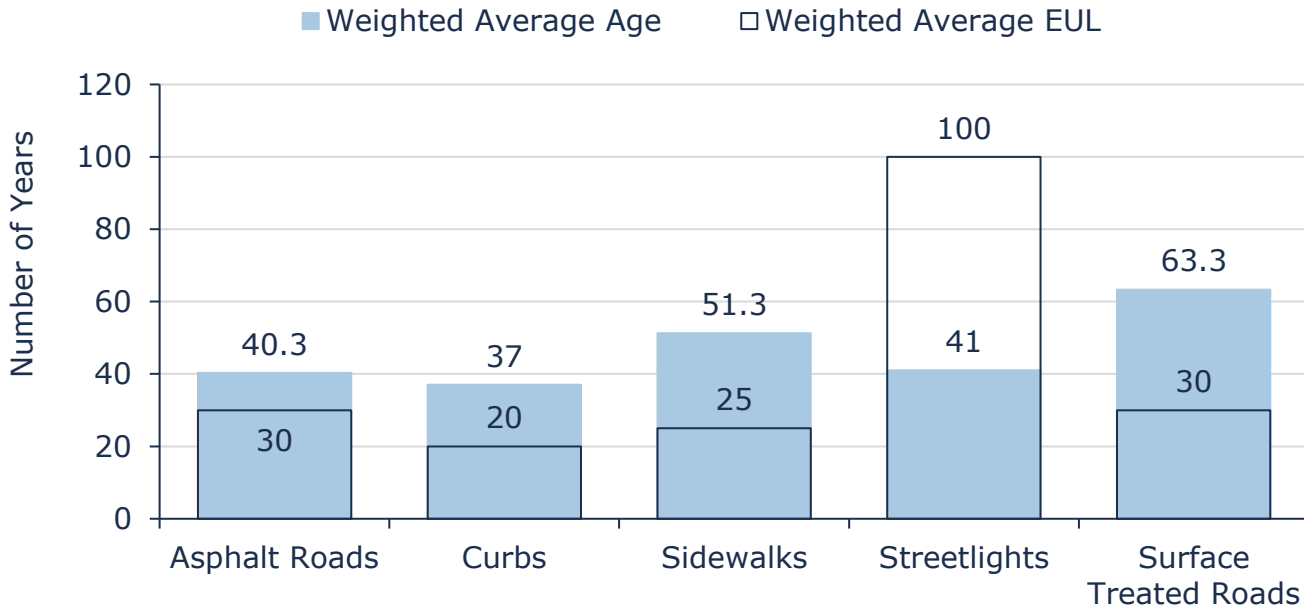


Figure 20 Estimated Useful Life vs. Asset Age: Road Network

Age analysis shows that the majority of paved roads have surpassed their expected useful life, with an average age of 40.3 years against a design life of 30 years (asphalt) and 63.3 years against a design life of 50 years (Surface Treated Roads). Curbs and sidewalks have also surpassed their expected useful life, while streetlights are currently within their expected useful lives.

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

4.4 Current Approach to Lifecycle Management

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

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of asphalt 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.

Asphalt Roads		
Event Name	Event Class	Event Trigger
Crack Sealing	Maintenance	Years 5,12, & 17
Patching	Maintenance	Years 10 & 20
Full Reconstruction	Replacement	35 Years (Rounded)

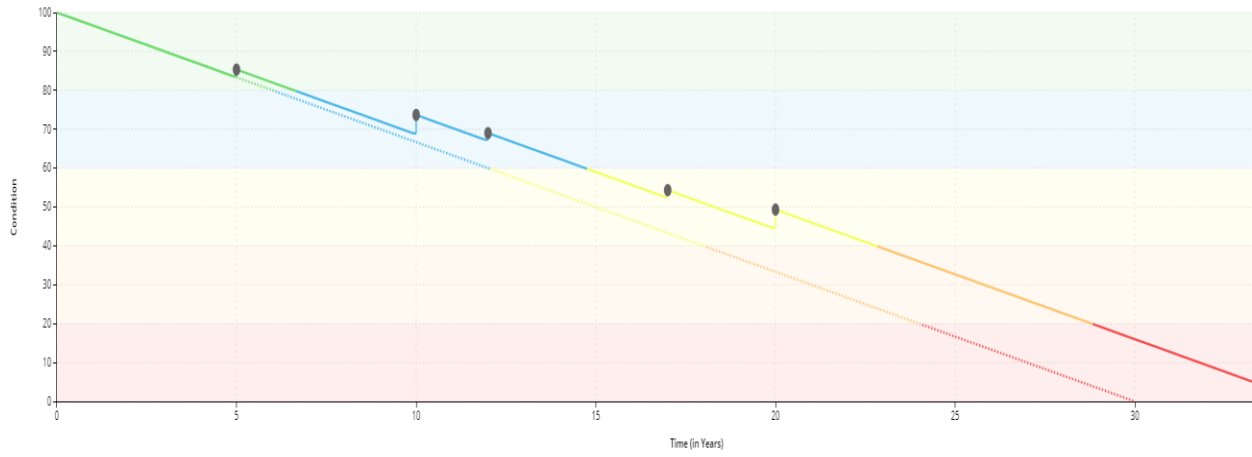


Table 8 Lifecycle Management Strategy: Road Network (HCB Roads)

The Town’s surface treated roads comprise a small portion of the Town’s road network. Surface treated roads receive pothole repairs as needed, which preserves the assets expected service life but does not extend it.

Gravel roads receive ongoing maintenance which includes regular regrading, dust control and re-gravelling. Gravel roads are typically managed through perpetual maintenance which, if completed as required can theoretically enable the asset to hold a limitless service life.

4.5 Forecasted Long-Term Replacement Needs

Figure 21 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town’s road network. This analysis was run until 2083 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$1.2 million for all assets in the road network. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The chart illustrates substantial capital needs throughout the forecast period. It also shows a backlog of \$13.0 million, dominated by asphalt roads. These projections are based on asset replacement costs, age analysis, and condition data when available, as well as lifecycle modeling (roads only). They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

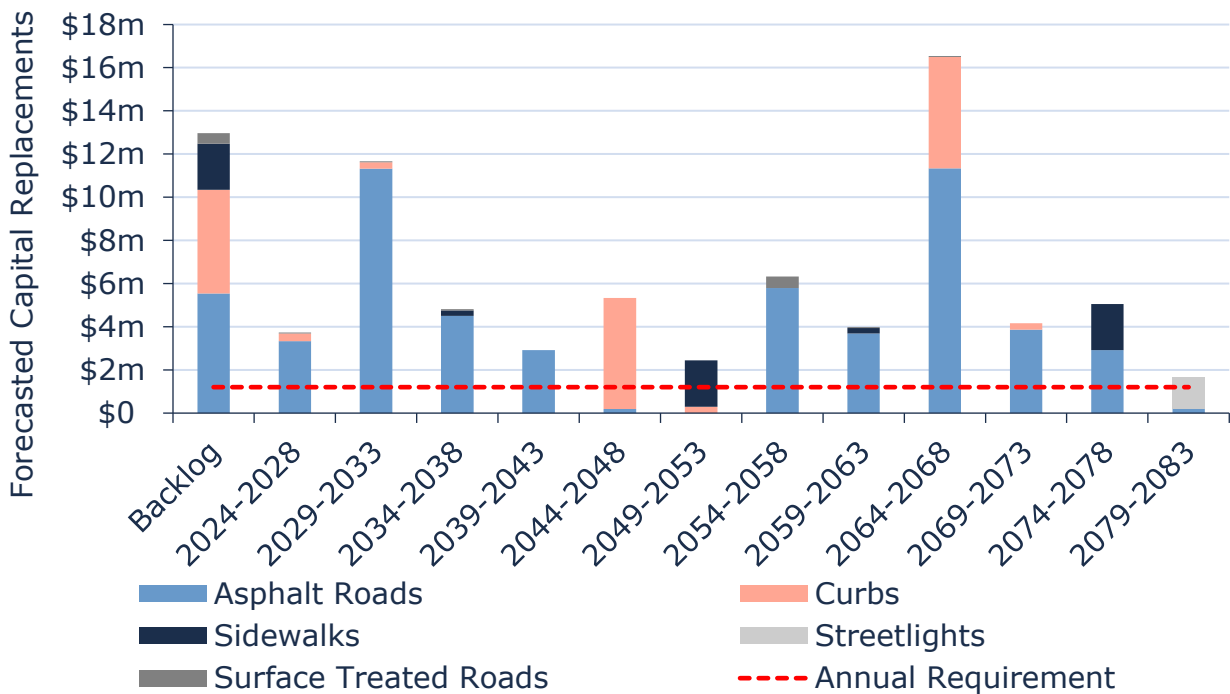


Figure 21 Forecasted Capital Replacement Needs: Road Network 2024-2083

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

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

4.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, repair priority, and road

class. The risk ratings for assets without useful attribute data were calculated using only condition and their replacement costs.

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

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

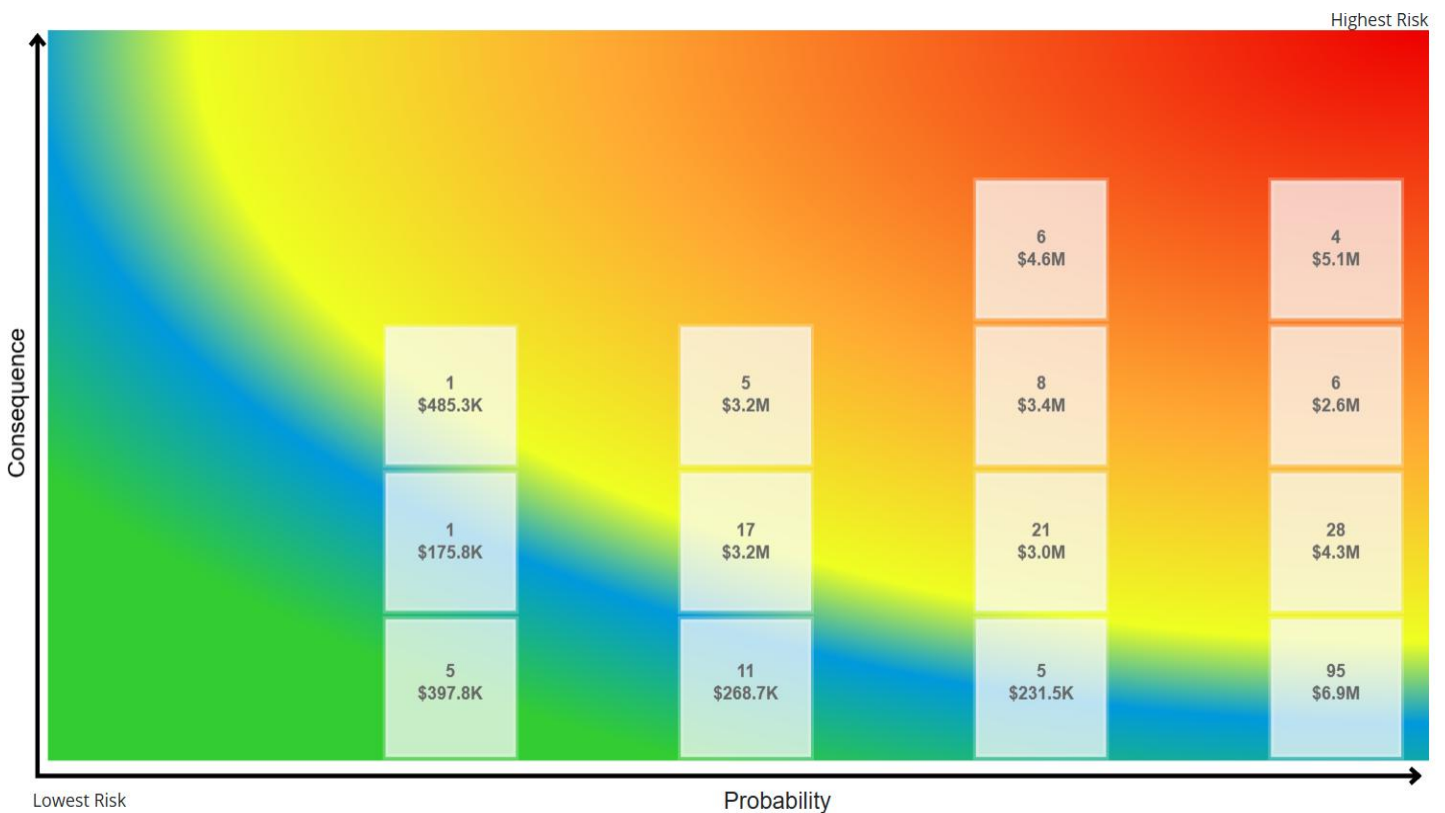


Figure 22 Risk Matrix: Road Network

4.7 Levels of Service

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

4.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	The Town's road network includes various pedestrian infrastructure throughout the core settlement areas in addition to a road network comprised of local and provincial highways throughout the Municipal boundaries. For a map view of the road network please refer to Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	<p>Road conditions are assessed using street scan and are rated on a 0-100 scale. Assets are classified in 5 condition ranges as follows:</p> <p>Very Good (85-100): In excellent condition with few visible defects.</p> <p>Good (70-84): In good condition with accumulating slight defects.</p> <p>Fair (55-69): In fair condition with intermittent patterns of slight to moderate defects.</p> <p>Poor (40-54): In poor condition with frequent patterns of moderate defects.</p> <p>Very Poor (0-39): In very poor condition with extensive severe defects.</p>

Table 9 O. Reg. 588/17 Community Levels of Service: Road Network

4.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km ²)	6.54 km/km ²
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km ²)	0.81 km/km ²
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km ²) ²	26.10 km/km ²
Quality	Average pavement condition index for paved roads in the Town	20%
	Average surface condition for unpaved roads in the Town (e.g. excellent, good, fair, poor)	Fair
Performance	Target vs. Actual capital reinvestment rate	3.2% vs. 1.2%

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

4.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km ²)	6.54 km/km ²	6.54 km/km ²	↔
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km ²)	0.81 km/km ²	0.81 km/km ²	
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km ²)	26.10 km/km ²	26.10 km/km ²	

² Includes both paved and gravel roads.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	Average pavement condition index for paved roads in the Town	20%	30%	↑
	Average surface condition for unpaved roads in the Town (e.g. excellent, good, fair, poor)	Fair	Fair	↔
Performance	Target vs. Actual Capital reinvestment rate	3.2% vs. 1.2%	3.2% vs. 3.2%	↑

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

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Maintain lane-km of arterial, collector, and local roads, allows for funding levels to be maintained, requiring no increases to the annual investment required.

Target 2: Specific condition targets for the paved roads in the Town will require an increase in the annual investment required to achieve the proposed condition target, or an updated Road Needs Assessment to more accurately determine the current condition of paved roads.

Target 3: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

5. Bridges & Culverts

Bridges & Culverts represent a critical portion of the transportation services provided to the community. The Department of Public Works is responsible for the maintenance of all bridges and culverts located across municipal roads with the goal of keeping structures in an adequate state of repair and minimizing service disruptions.

5.1 Inventory & Valuation

Table 12 summarizes the quantity and current replacement cost of bridges and culverts.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Bridges	3	Quantity	\$6,849,000	CPI
Culverts	1	Quantity	\$1,549,000	CPI
Dams	1	Quantity	\$175,000	CPI
Pedestrian Bridges	5	Quantity	\$878,000	CPI
TOTAL			\$9,451,000	CPI

Table 12 Detailed Asset Inventory: Bridges & Culverts

Total Current Replacement Cost: \$9,451,038

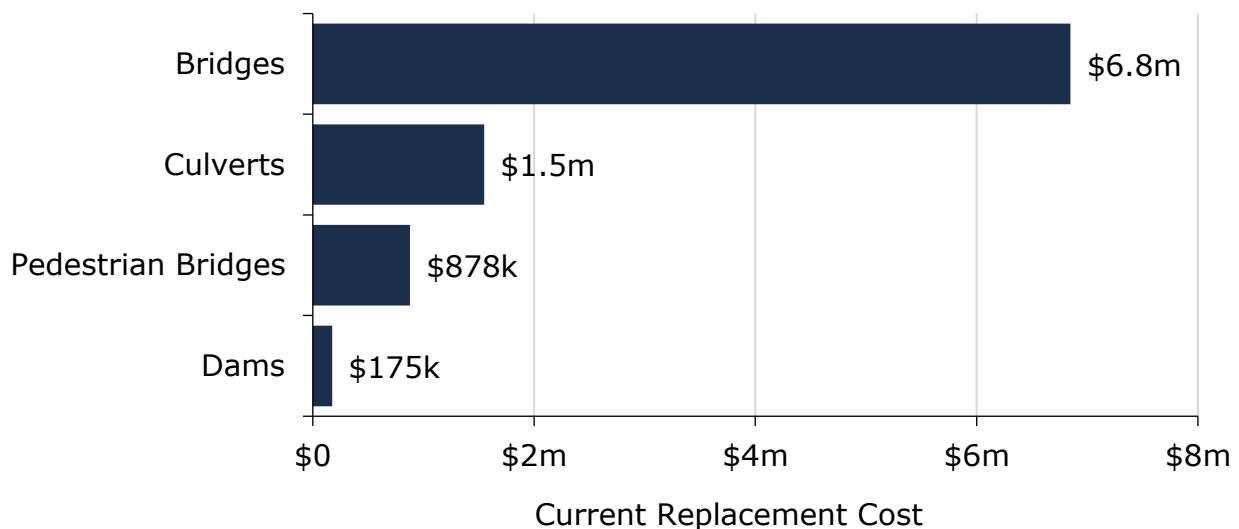


Figure 23 Portfolio Valuation: Bridges & Culverts

5.2 Asset Condition

Figure 24 summarizes the replacement cost-weighted condition of the Town's bridges and culverts. Based on the Town's recent Ontario Structures Inspection Manual (OSIM) assessments, 51% bridges and culverts are in fair or better condition. Some elements or components of these structures may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition. At 49% of the total bridges and culverts portfolio, assets in poor or worse condition may require replacement in the immediate or short term.

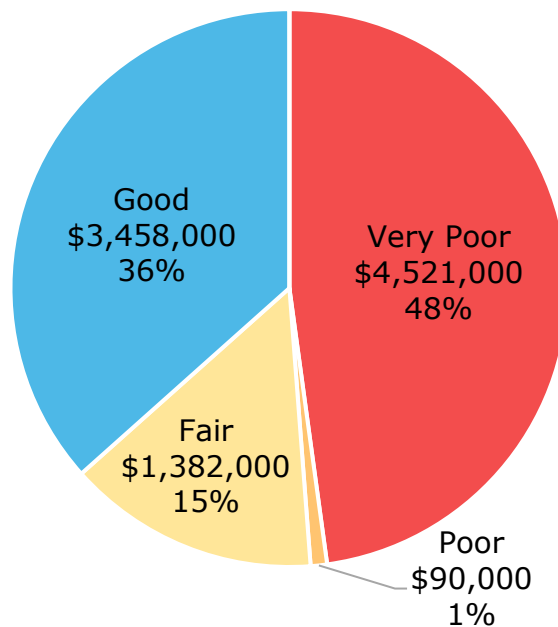


Figure 24 Asset Condition: Bridges & Culverts Overall

As further detailed in Figure 25, based on in-field condition assessments, 51% of bridge and culvert assets were identified in fair or better condition. As bridges and structures reach a poor or worse rating (i.e., a bridge condition index of less than 40), they are not necessarily unsafe for regular use, individual circumstances must be considered. The OSIM ratings are designed to identify repairs needed to elevate condition ratings to a fair or higher.

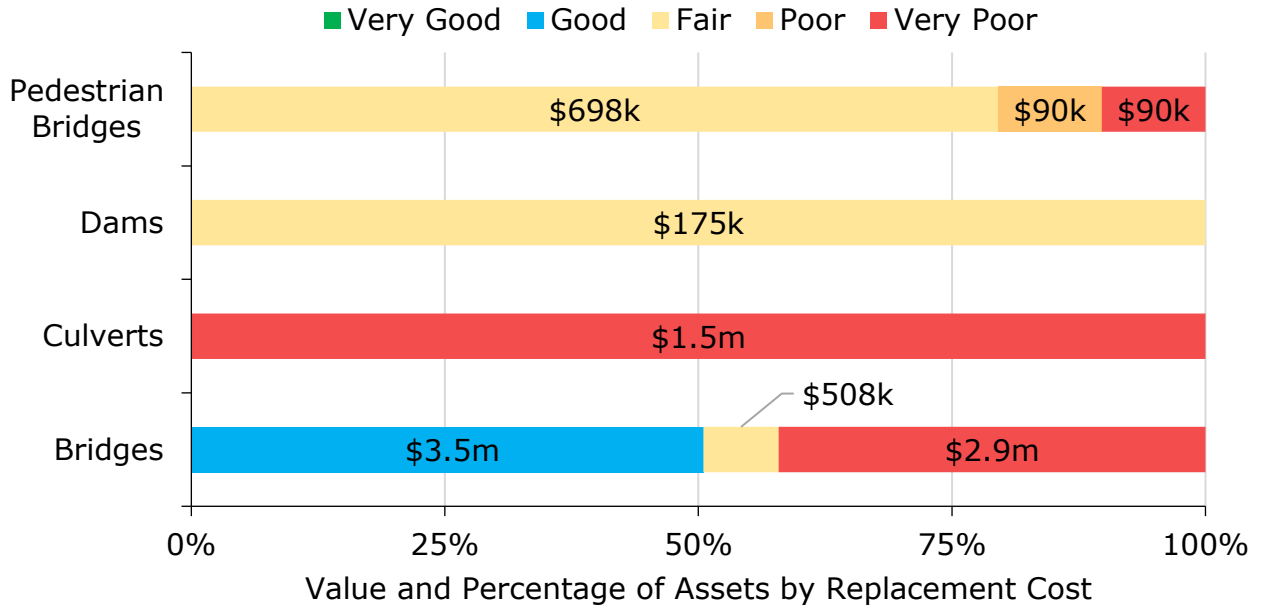


Figure 25 Asset Condition: Bridges & Culverts by Segment

5.3 Age Profile

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

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

Figure 26 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

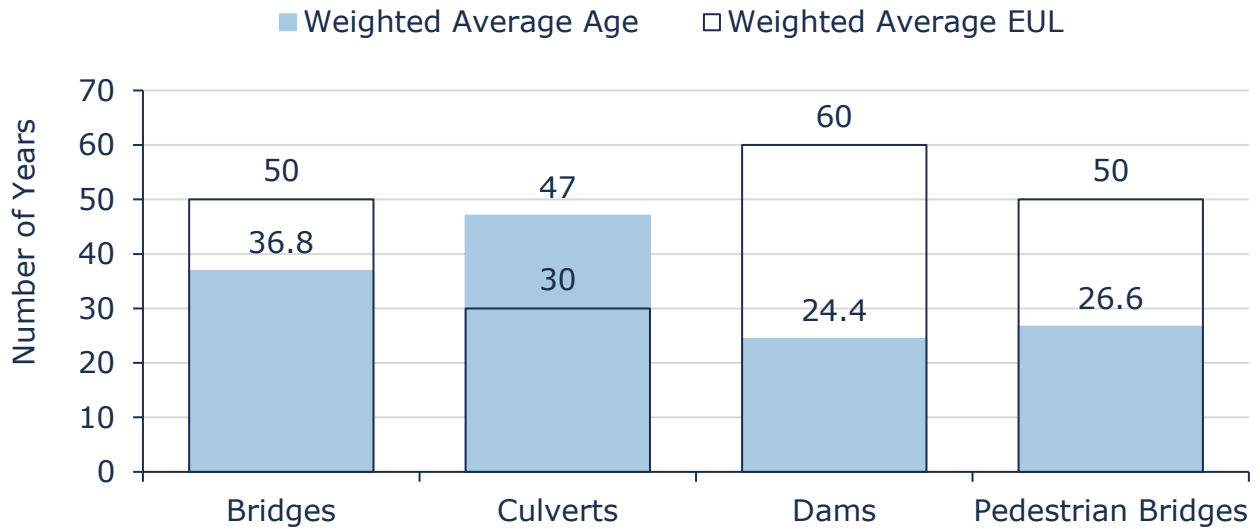


Figure 26 Estimated Useful Life vs. Asset Age: Bridges & Culverts

Age analysis reveals that on average, bridges are nearing the end of their estimated useful life, with an average age of 36.8 years against an average EUL of 50 years. On average, culverts have exceeded their estimated useful life, with an average age of 47 years, against an average EUL of 30 years. OSIM assessments should continue to be used in conjunction with age and asset criticality to prioritize capital and maintenance expenditures.

5.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	On an annual basis bridge and structural culvert decks and joints are cleaned. Thereafter, additional cleaning is compelled as needed.

Rehabilitation / Replacement	All major lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2023 by Kresin Engineering Corporation.

Table 13 Lifecycle Management Strategy: Bridges & Culverts

5.5 Forecasted Long-Term Replacement Needs

Figure 27 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town’s bridges and culverts. This analysis was run until 2058 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements for bridges and culverts total \$209,000. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

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

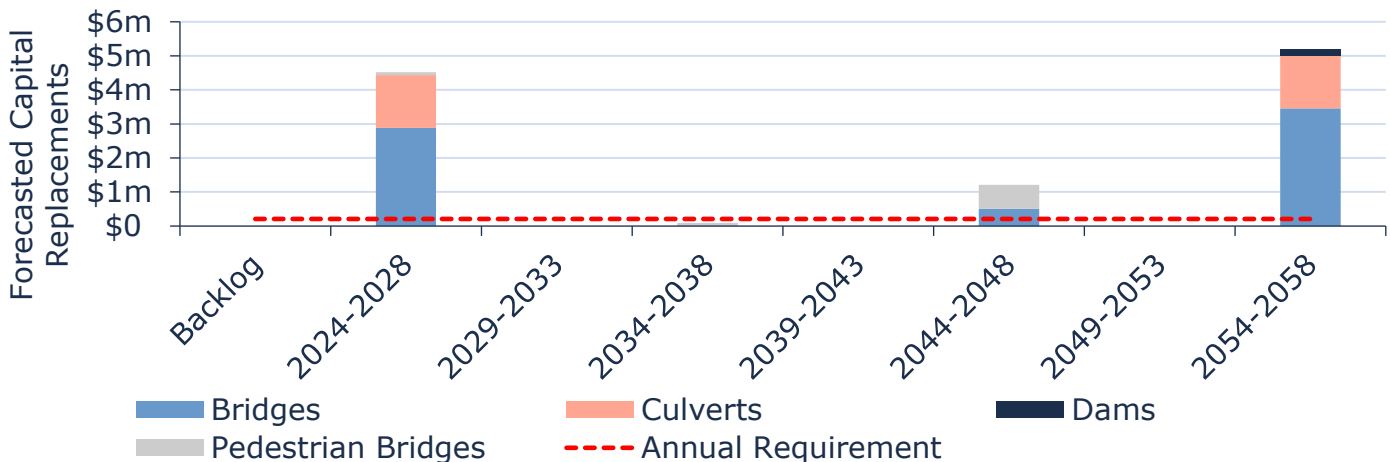


Figure 27 Forecasted Capital Replacement Needs: Bridges & Culverts 2024-2058

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

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

5.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement cost, road class, AADT, detour length, and special routes.

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

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

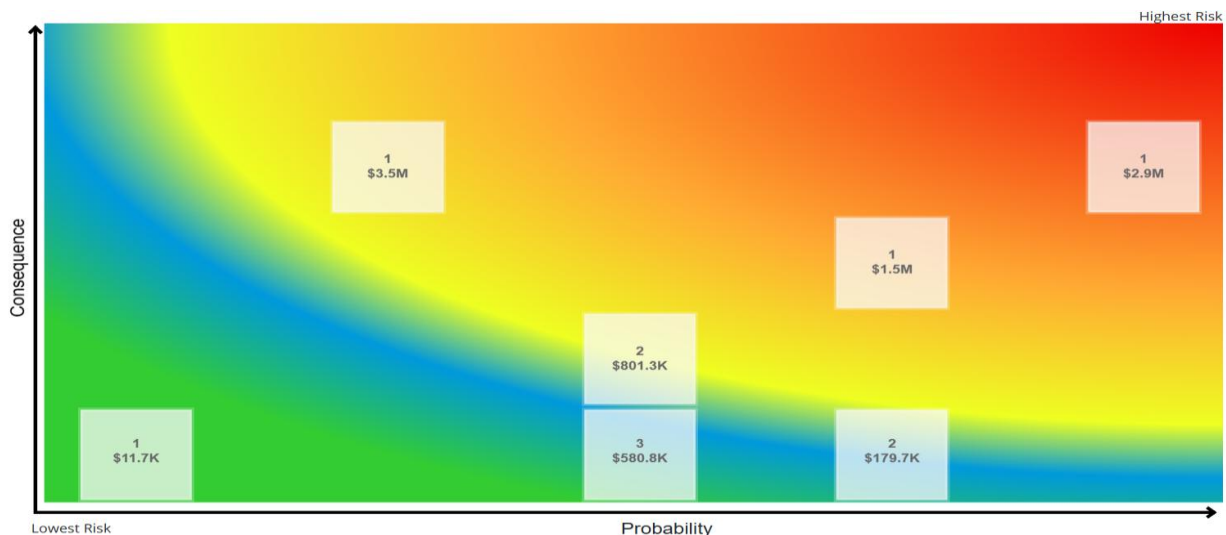


Figure 28 Risk Matrix: Bridges & Culverts

5.7 Levels of Service

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

5.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Of the Town's four road bridges and structural culvert assets, one bridge (White Street) has loading restrictions which is largely due to it being a single lane bridge. For the remaining assets most types of vehicles, including heavy transport, motor vehicles, and emergency vehicles, can cross them without restriction.
Quality	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	The condition of vehicle bridges ranges from very good (80) to very poor (10). The weighted average condition of bridges is Fair (47). The condition of the Town's only structural culvert is poor (10). See Appendix C for images.

Table 14 O. Reg. 588/17 Community Levels of Service: Bridges & Culverts

5.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of bridges in the Town with loading or dimensional restrictions	25%
Quality	Average bridge condition index value for bridges in the Town	43%

Service Attribute	Technical Metric	Current LOS (2023)
	Average bridge condition index value for structural culverts in the Town	10%
Performance	Target vs. Actual capital reinvestment rate	2.2% vs. 4.5%

Table 15 O. Reg. 588/17 Technical Levels of Service: Bridges & Culverts

5.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	% of bridges in the Town with loading or dimensional restrictions	25%	25%	↔
Quality	Average bridge condition index value for bridges in the Town	43%	50%	↑
	Average bridge condition index for structural culverts in the Town	10%	30%	
Performance	Target vs. Actual capital reinvestment rate	2.2% vs. 4.5%	4.5% vs. 4.5%	↔

Table 16 O. Reg. 588/17 Proposed Levels of Service: Bridges & Culverts

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Maintain % of bridges with loading or dimensional restrictions allows for funding levels to be maintained, requiring no increases to the annual investment required.

Target 2: Specific condition target – bridges and culverts will require an increase in the annual investment required to achieve the proposed condition targets, as outlined in the Financial Strategy.

Target 3: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

6. Water Network

The Town of Atikokan water infrastructure assets are maintained by the Public Works Department and Northern Waterworks Incorporated (NWI). NWI is the Overall Responsible Operator (ORO) for the Water Treatment Plant while the Town is the ORO for the distribution system. A dedicated Public Works foreman oversees the distribution systems maintenance and is also responsible for the preparation of contracts and the supervision of works for distribution repair, replacement, and rehabilitation projects.

6.1 Inventory & Valuation

Table 17 summarizes the quantity and current replacement cost of the Town’s various water network assets.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Hydrants	264	Quantity	\$4,554,000	User-defined
Water Mains	31,973	Length (m)	\$22,939,000	Cost/Unit
Water Plant	2	Quantity	\$16,320,000	CPI
TOTAL			\$43,814,000	

Table 17 Detailed Asset Inventory: Water Network

Total Current Replacement Cost: \$43,813,693

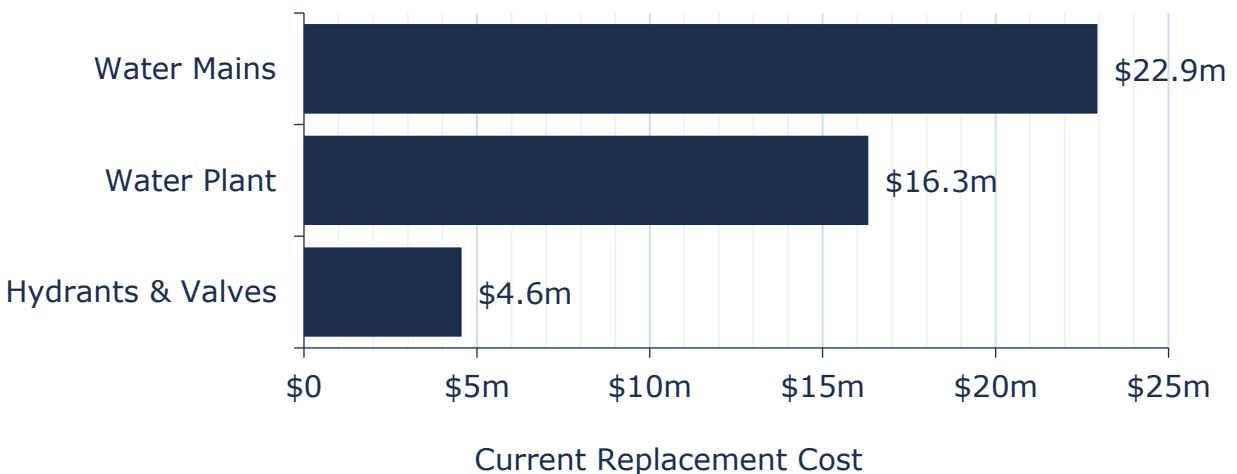


Figure 29 Portfolio Valuation: Water Network

6.2 Asset Condition

Figure 30 summarizes the replacement cost-weighted condition of the Town’s water network. Based on age, 7% of assets are in fair or better condition; the remaining 93% of assets are in poor to very poor condition. No condition data was available for water assets.

Assets in poor or worse condition may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As illustrated in Figure 30, the majority of the Town’s water network assets are in very poor condition.

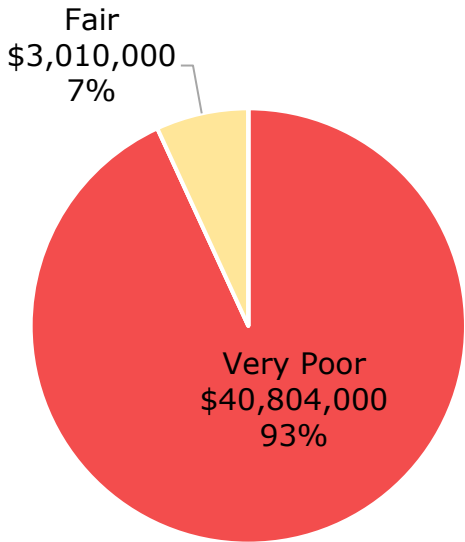


Figure 30 Asset Condition: Water Network Overall

As illustrated in Figure 31, based on age-based conditions, the majority of the Town’s water assets are in very poor condition; however, 66% of hydrants are in fair condition.

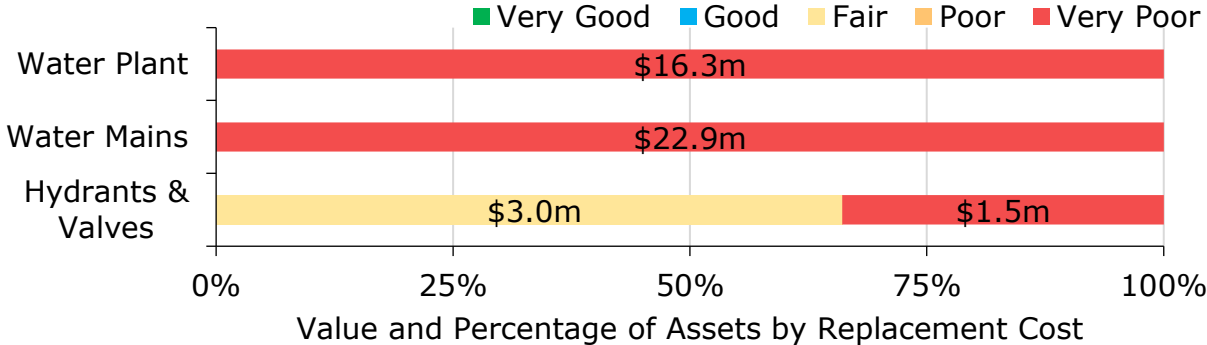


Figure 31 Asset Condition: Water Network by Segment

6.3 Age Profile

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

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

Figure 32 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

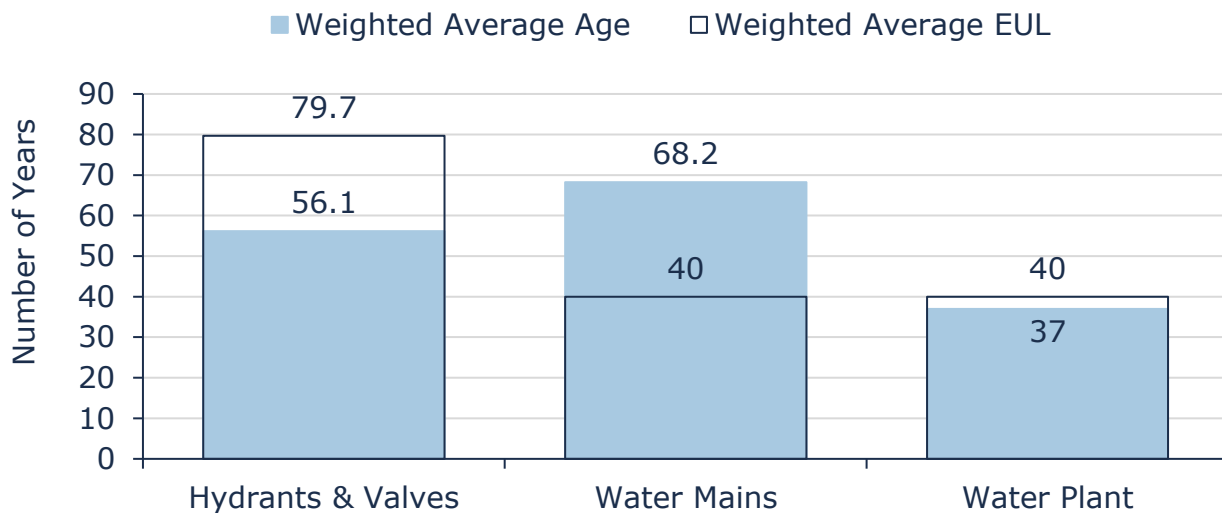


Figure 32 Estimated Useful Life vs. Asset Age: Water Network

6.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Main flushing is completed on 100% of the network twice per year using in-house resources.
	Routine hydrant maintenance is completed annually; additional maintenance is completed based on results of main flushing.
	A leak detection surey for the entire distribution network was approved in 2021 and work was completed in 2022.
	Northern Waterworks Incorporated (NWI) is the Overall Responsible Operator for the water treatment plant and completes regular operation and maintenance of the plants machinery, equipment, and buildings.
Rehabilitation	NWI completes regular flow meter verification.
	Annually NWI provides a list of recommended capital rehabilitation and replacements projects at the Water treatment plant. Projects are reviewed and may be approved by the Town of Atikokan.
	Watermain relining was completed extensively in 1996 but no new projects have been completed since. Based on findings from the leak detection study, main relining may be considered as a rehabilitation approach.
Replacement	Watermain replacements are completed when other related linear assets are also planned for replacement (i.e., road replacement). Replacement decisions also consider the history of main brakes and the assets condition.

Table 18 Lifecycle Management Strategy: Water Network

6.5 Forecasted Long-Term Replacement Needs

Figure 33 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town’s water network. This analysis was run until 2078 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$1.1 million for all assets in the water network. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital

expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The chart illustrates substantial capital needs throughout the forecast period. It also shows a backlog of \$24.5 million, dominated by water mains. These projections are based on asset replacement costs, age analysis, and condition data when available. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

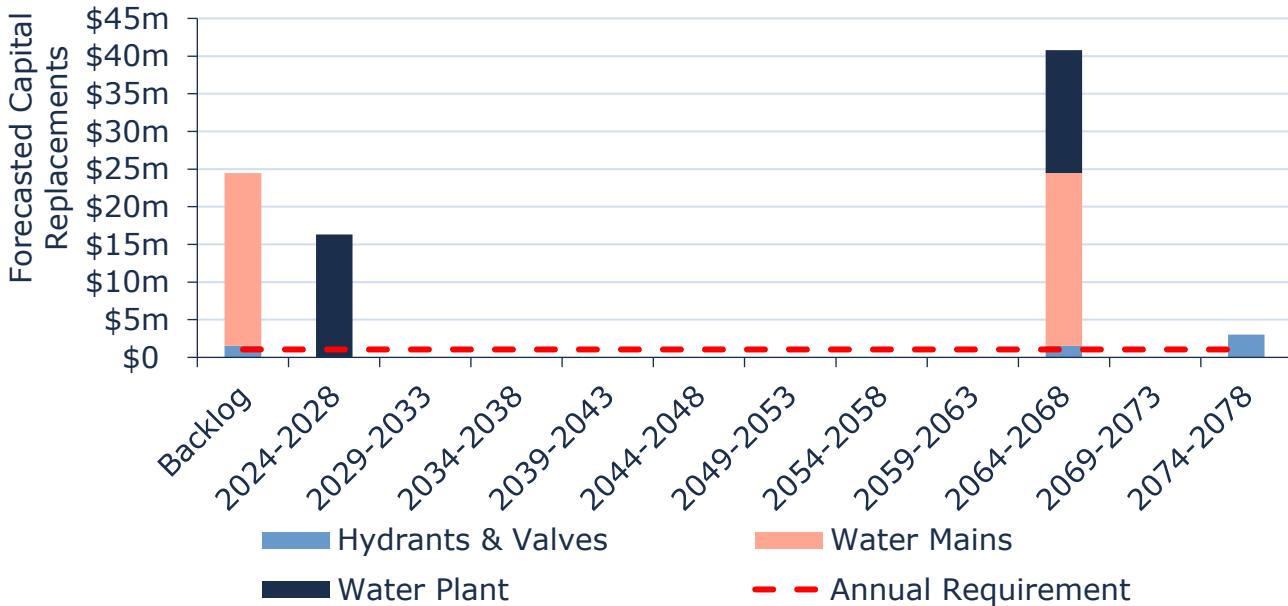


Figure 33 Forecasted Capital Replacement Needs: Water Network 2024-2078

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

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

6.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, material, diameter and replacement cost.

The risk ratings for assets without useful attribute data were calculated using only condition, and their replacement costs.

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

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

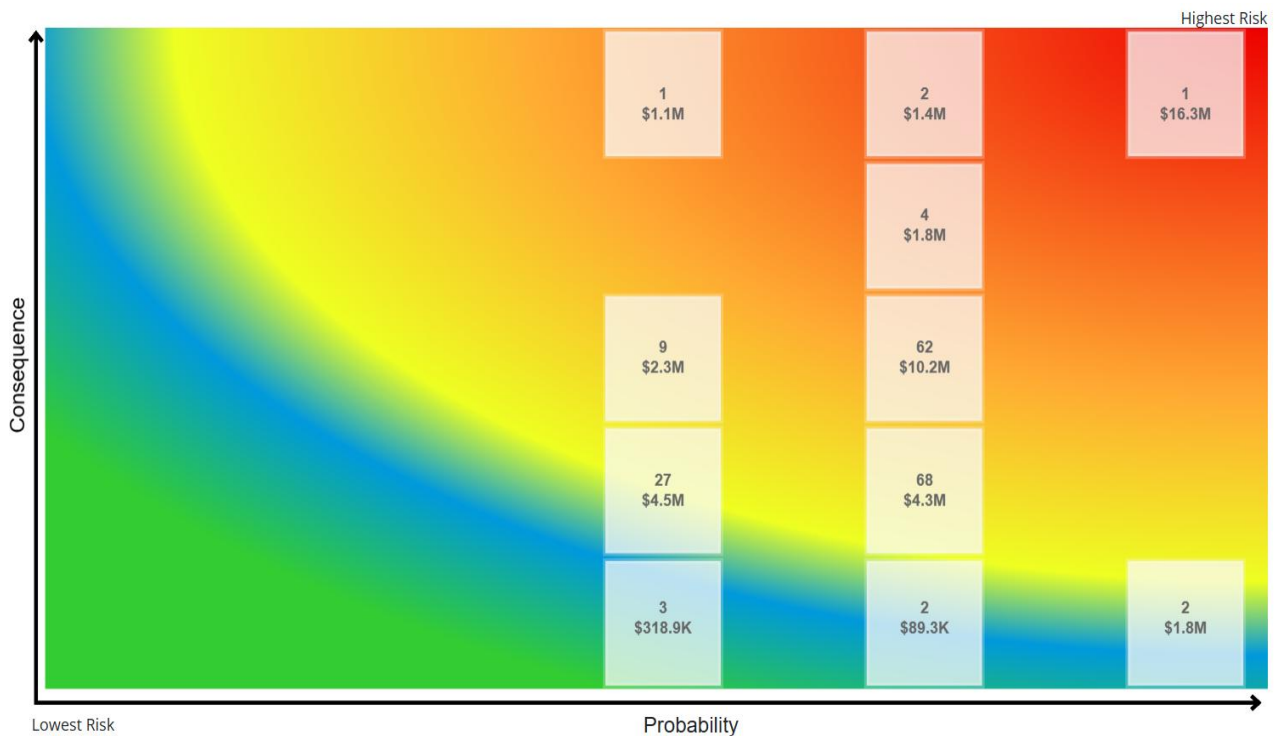


Figure 34 Risk Matrix: Water Network

6.7 Levels of Service

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

6.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	The Municipal water system provides water to a variety of users including residential, commercial, and light industrial. The distribution system primarily services the Town's central neighborhoods bound by Mackenzie Ave to the South, O'Brien street to the North, Spring Avenue to the west, and Highway 622 to the east. See Appendix C for maps
	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	Most properties within the Town's central neighborhoods are connected to municipal water. At this time, the Town does not have a comprehensive Fire Flow study, but it is assumed that properties with a 15-meter radius of a fire hydrant have adequate fire flow. See Appendix C for map of the water main network.
Reliability	Description of boil water advisories and service interruptions	<p>In 2023 there were four (5) boil water advisories (BWA) notices issued, affecting the following number of customers:</p> <p>February 12 – 17: 2 commercial buildings affected</p> <p>March 21 – 31: 9 residential affected</p> <p>July 7 – 14: 9 commercial buildings affected</p> <p>September 13 – 21: 19 residential affected</p> <p>The town also had a town wide BWA which lasted for 2 days.</p>

Table 19 O. Reg. 588/17 Community Levels of Service: Water Network

6.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of properties connected to the municipal water system	93%
	% of properties where fire flow is available	93%
Quality	Average condition rating for water network	7%
Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	2.22
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0.006
Performance	Target vs. Actual capital reinvestment rate	2.4% vs. 0%

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

6.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	% of properties connected to the municipal water system	93%	93%	↔
	% of properties where fire flow is available	93%	93%	

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Quality	Average condition rating for water network	7%	30%	↑
Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	2.22	0	↓
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0.006	0	
Performance	Target vs. Actual capital reinvestment rate	2.4% vs. 0%	2.4% vs. 2.4%	↑

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

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Maintaining the number of properties connected to the water system, and where fire flow is available allows for funding levels to be maintained, requiring no increases to the annual investment required.

Target 2: Specific target conditions for the water network will require an increase in the annual investment required to achieve proposed target conditions, as outlined in the Financial Strategy.

Target 3: Decreasing the number of boil water advisories and water main breaks will require that the Town is more proactive with their lifecycle management strategies for the water network, which can be achieved by increasing the annual investment required as per the Financial Strategy.

Target 4: Achieving the target capital reinvestment rate will require the Town to implement the water rate increase of 3.7% annually for the next 20 years, as outlined in the Financial Strategy.

7. Sanitary Sewer Network

The collection components of the sanitary sewer network are managed by the Town of Atikokan. The treatment plant and pump stations are managed by Northern Waterworks Incorporated.

The tables to follow provide an overview of sanitary sewer network assets.

7.1 Inventory & Valuation

Table 22 summarizes the quantity and current replacement cost of the Town’s various sanitary sewer network assets.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Machinery & Equipment	3	Quantity	\$242,000	CPI
Pumping Stations	11	Quantity	\$6,192,000	CPI
Sewer Mains	27,609	Length (m)	\$17,550,000	Cost/Unit
Sewer Manholes	449	Quantity	\$7,764,000	Cost/Unit
Sewer Treatment Plant	2	Quantity	\$37,062,000	CPI
TOTAL			\$68,810,000	

Table 22 Detailed Asset Inventory: Sanitary Sewer Network

Total Current Replacement Cost: \$68,809,739

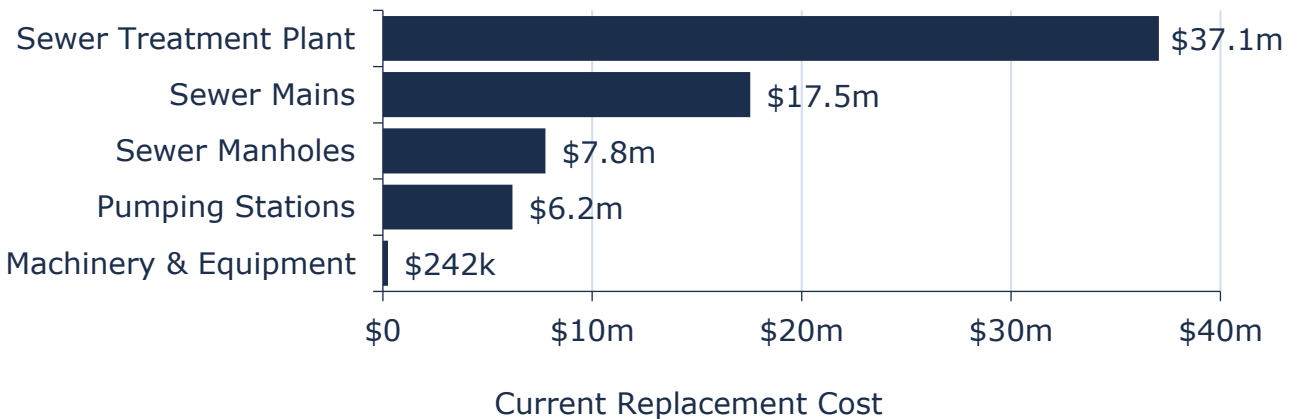


Figure 35 Portfolio Valuation: Sanitary Sewer Network

7.2 Asset Condition

Figure 36 summarizes the replacement cost-weighted condition of the Town’s sanitary sewer network. Based on age, 22% of assets are in fair or better condition; the remaining 78% of assets are in poor to very poor condition. No condition data was available for sanitary sewer assets.

Assets in poor or worse condition may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As illustrated in Figure 36 the majority of the Town’s sanitary sewer network assets are in poor or very poor condition.

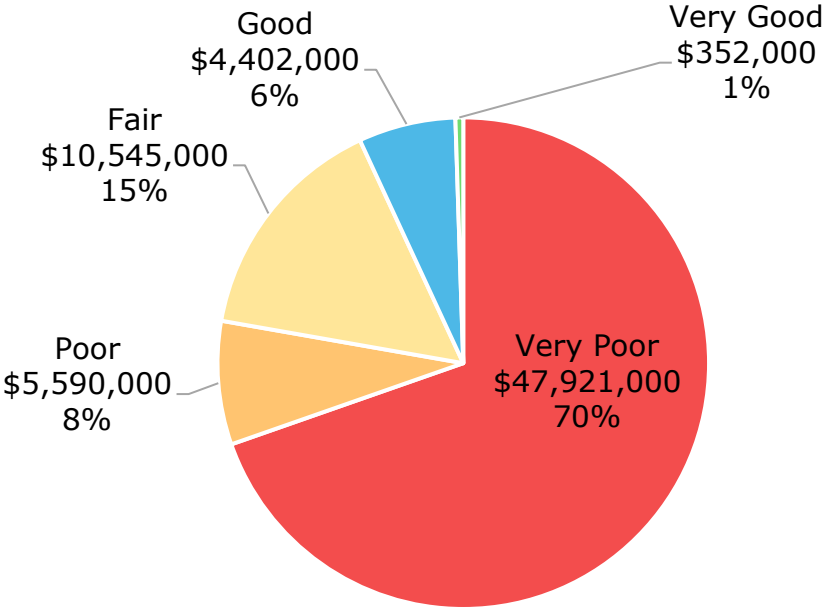


Figure 36 Asset Condition: Sanitary Sewer Network Overall

As illustrated in Figure 37, based on age-based conditions, the majority of the Town’s sewer mains are in poor or very poor condition however, 39% of sewer mains are in fair or good condition.

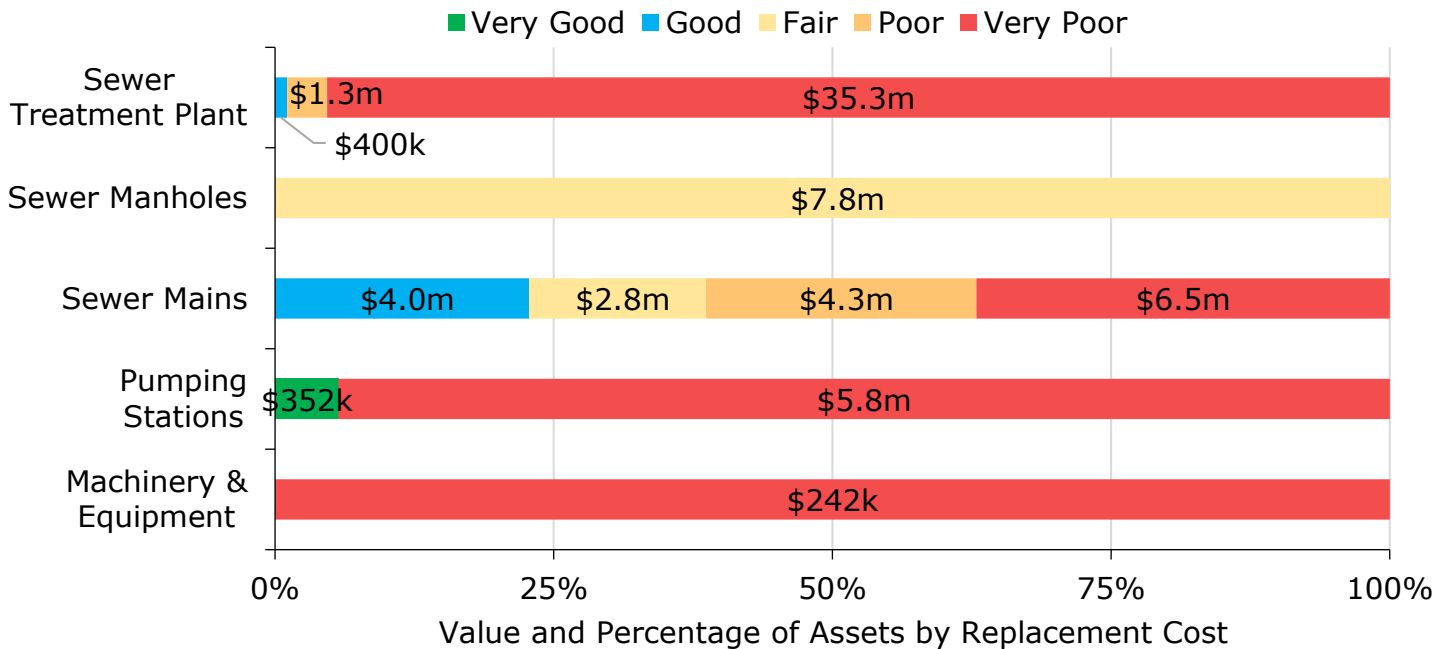


Figure 37 Asset Condition: Sanitary Sewer Network by Segment

7.3 Age Profile

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

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

Figure 38 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

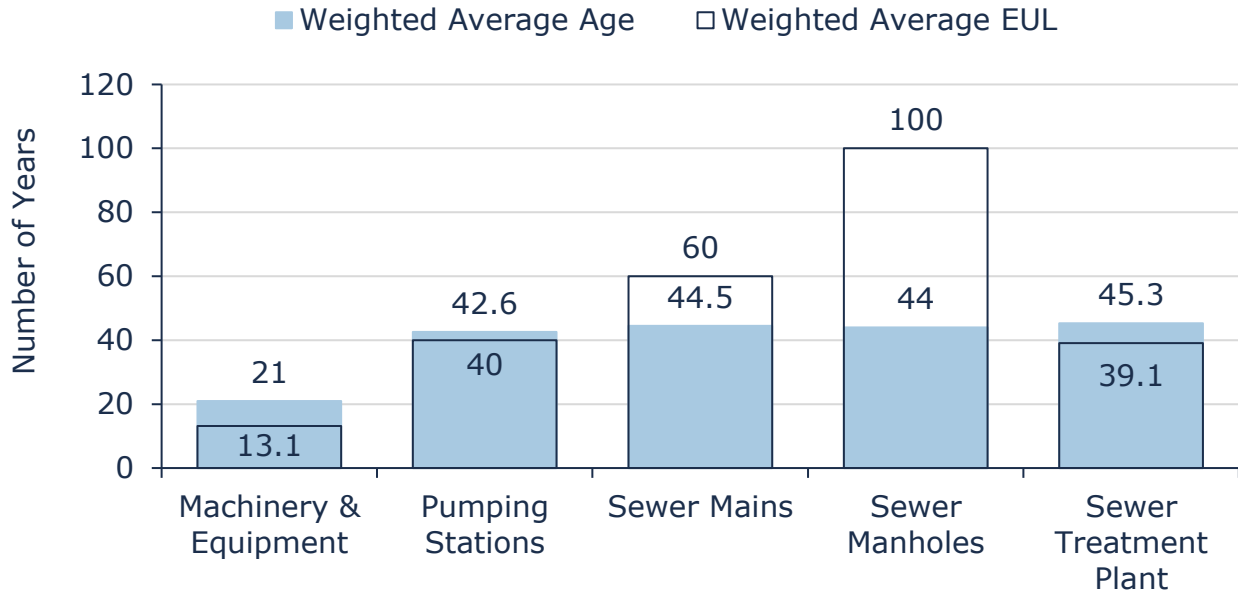


Figure 38 Estimated Useful Life vs. Asset Age: Sanitary Sewer Network

7.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset’s characteristics, location, utilization, maintenance history and environment. The following lifecycle strategy has been developed as a proactive approach to managing the lifecycle of sanitary mains. A trenchless re-lining strategy is expected to extend the service life of sanitary mains at a lower total cost of ownership.

Activity Type	Description of Current Strategy
Maintenance & Inspection	On annual basis the entire collection network is flushed and as needed rodded, to clear any obstructions. At this time, manholes are also inspected and issues are remediated as required.
	Northern Waterworks Incorporated (NWI) is the Overall Responsible Operator for the waste water treatment plant and pump stations. NWI completes regular operation and maintenance of the plants machinery, equipment, and buildings.
	In 2021 CCTV inspections were completed on approximately 15% of the collection network. In 2023, the Town intends to complete additional CCTV inspections,

Activity Type	Description of Current Strategy
	focusing on problematic mains. Thereafter, the Town intends to complete inspections of remaining mains so that they have comprehensive condition information.
Rehabilitation	Annually NWI provides a list of recommended capital rehabilitation and replacements projects at the wastewater treatment plant. Projects are reviewed and may be approved by the Town of Atikokan.
	Wastewater main relining has not been completed to date, but it is a rehabilitation strategy that the Town is actively investigating.
Replacement	Wastewater asset replacement decisions have historically been based on meeting legislative compliance. In more recent years considerations have broadened to also include a review of asset condition and coordinated replacement with other linear assets. Currently replacement decisions are formally planned a year in advance.

Table 23 Lifecycle Management Strategy: Sanitary Sewer Network

7.5 Forecasted Long-Term Replacement Needs

Figure 39 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Town’s sanitary sewer network. This analysis was run until 2083 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$1.5 million for all assets in the sanitary sewer network. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The chart illustrates substantial capital needs throughout the forecast period. It also shows a backlog of \$47.1 million. These projections are based on asset replacement costs, age analysis, and condition data when available. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

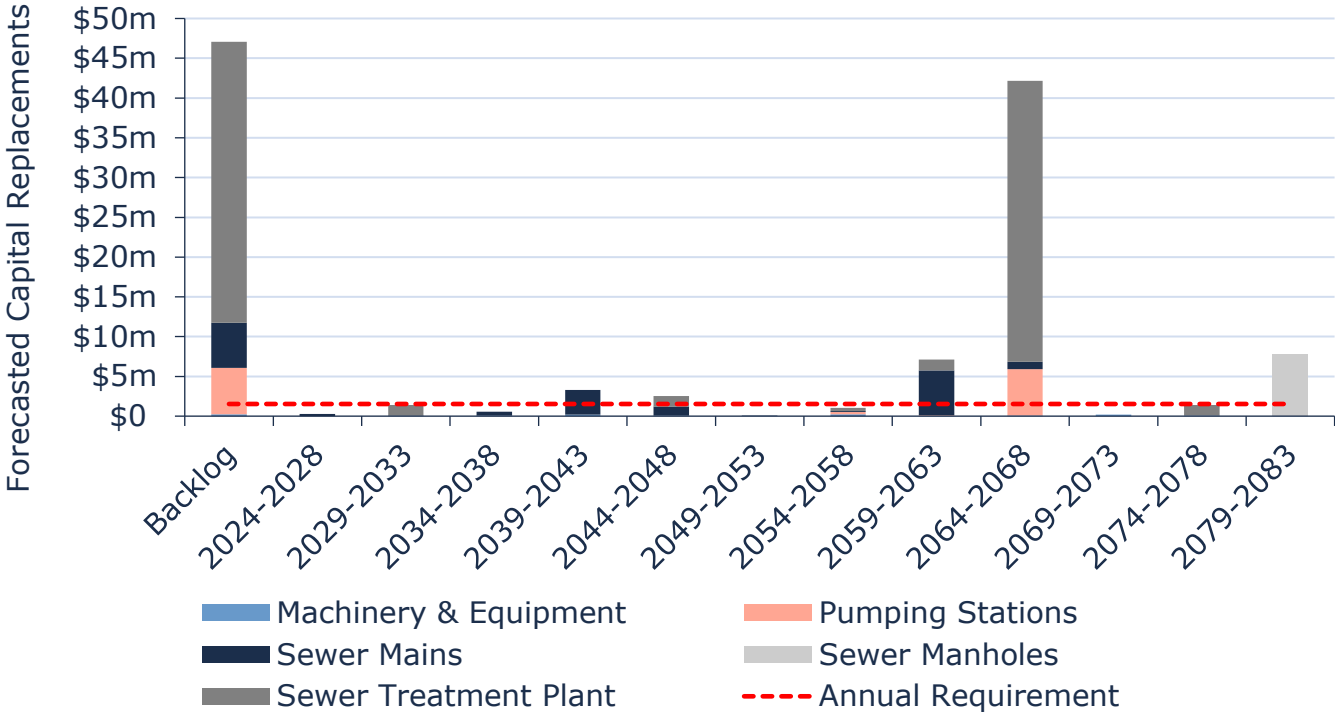


Figure 39 Forecasted Capital Replacement Needs: Sanitary Sewer Network 2024-2083

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

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

7.6 Risk Analysis

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

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

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

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

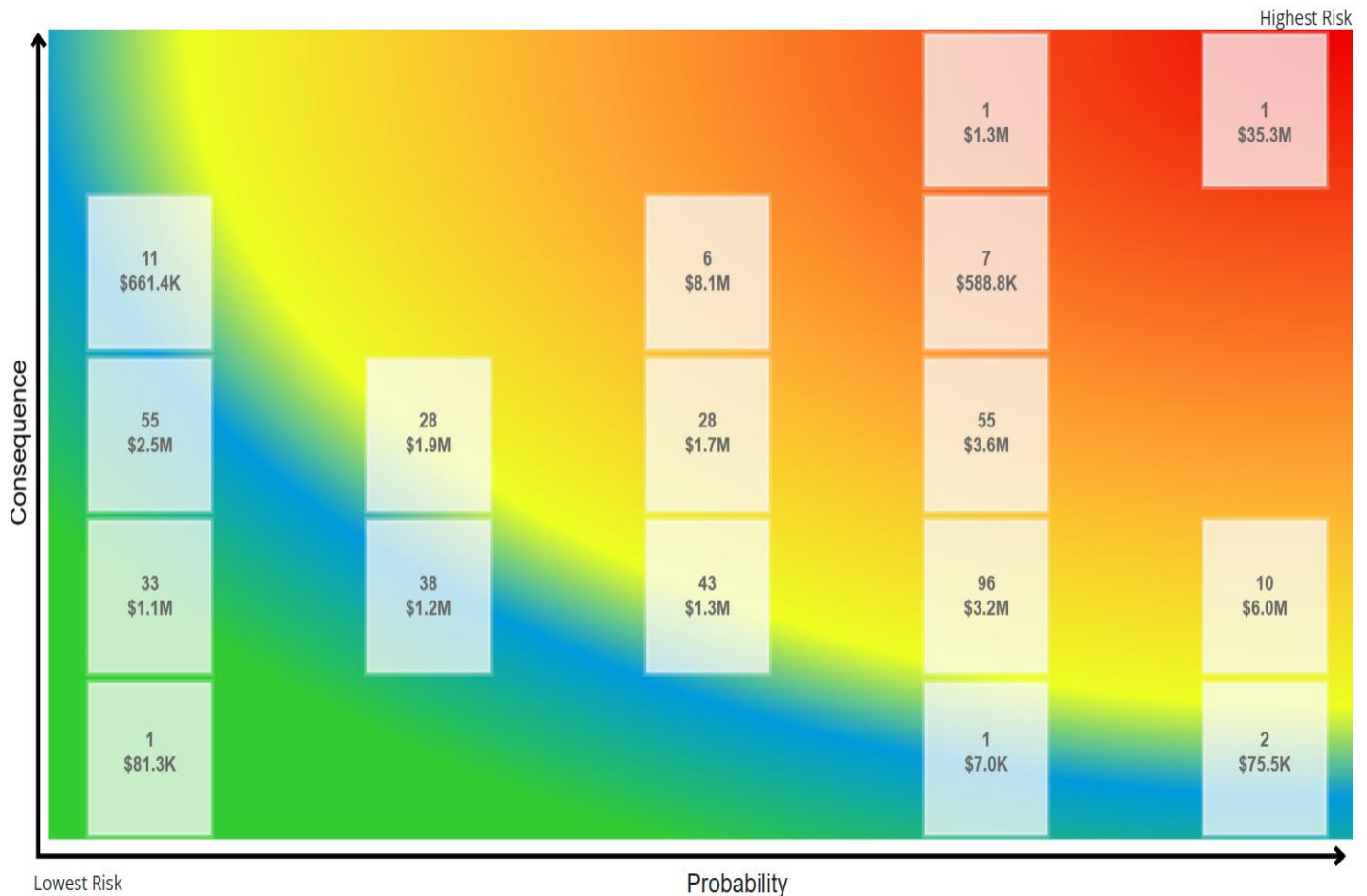


Figure 40 Risk Matrix: Sanitary Sewer Network

7.7 Levels of Service

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

7.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system	The Municipal wastewater system provides water to a variety of users including residential, commercial, and light industrial. The collection system primarily services the Town's central neighborhoods bound by Mackenzie Ave to the South, O'Brien street to the North, Spring Avenue to the west, and Highway 622 to the east. See Appendix C for maps.
Reliability	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	The Town does not own any combined sewers
Reliability	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	The Town does not own any combined sewers

Service Attribute	Qualitative Description	Current LOS (2023)
	<p>Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes</p>	<p>Stormwater can enter into sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g. weeping tiles). In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its designed capacity. In some cases, this can cause water and/or sewage to overflow backup into homes. The disconnection of weeping tiles from sanitary mains and the use of sump pumps and pits directing storm water to the storm drain system can help to reduce the chance of this occurring.</p>
	<p>Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration</p>	<p>The municipality follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers. These standards have been determined with consideration of the minimization of sewage overflows and backups.</p>
	<p>Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system</p>	<p>All effluent compliance limits and objectives were achieved throughout the reporting period for the effluent parameter's carbonaceous biochemical oxygen demand, total ammonia nitrogen, E. coli and pH. Effluent compliance limits and design objectives were not achieved for the effluent parameters total suspended solids and total phosphorus.</p>

Table 24 O. Reg. 588/17 Community Levels of Service: Sanitary Sewer Network

7.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of properties connected to the municipal wastewater system	92%
	% of sanitary sewer network flushed annually	14%
Quality	Average condition rating for sanitary sewer network	13%
Reliability	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	N/A – The Town does not own any combined sewers.
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0
Performance	Target vs. Actual capital reinvestment rate	2.2% vs. 0.2%

Table 25 O. Reg. 588/17 Technical Levels of Service: Sanitary Sewer Network

7.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	% of properties connected to the municipal wastewater system	92%	92%	↔
	% of sanitary sewer network flushed annually	14%	14%	
Quality	Average condition rating for sanitary sewer network	13%	20%	↑
Reliability	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0	0	↔
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0	0	
Performance	Target vs. Actual capital reinvestment rate	2.2% vs. 0.2%	2.2% vs. 2.2%	↑

Table 26 O. Reg. 588/17 Proposed Levels of Service: Sanitary Sewer Network

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Maintaining the % of properties connected the wastewater system, the % of the network flushed annually, the number of wastewater backups and the number of effluent violations allows for funding levels to be maintained, requiring no increases to the annual investment required.

Target 2: Specific target conditions for the sanitary network will require an increase in the annual investment required to achieve proposed target conditions, as outlined in the Financial Strategy.

Target 3: Achieving the target capital reinvestment rate will require the Town to implement the sanitary rate increase of 5.5% annually for the next 20 years, as outlined in the Financial Strategy.

8. Stormwater Network

The Town’s stormwater network consists of storm mains, manholes and catch basins. These assets are owned and operated by the Town’s Public Works Department.

8.1 Inventory & Valuation

Table 27 summarizes the quantity and current replacement cost of all stormwater management assets available in the Town’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Catch Basins	537	Quantity	\$3,383,000	Cost/Unit
Manholes	298	Quantity	\$5,464,000	Cost/Unit
Storm Mains	27,827	Length (m)	\$11,817,000	Cost/Unit
TOTAL			\$11,817,000	

Table 27 Detailed Asset Inventory: Stormwater Network

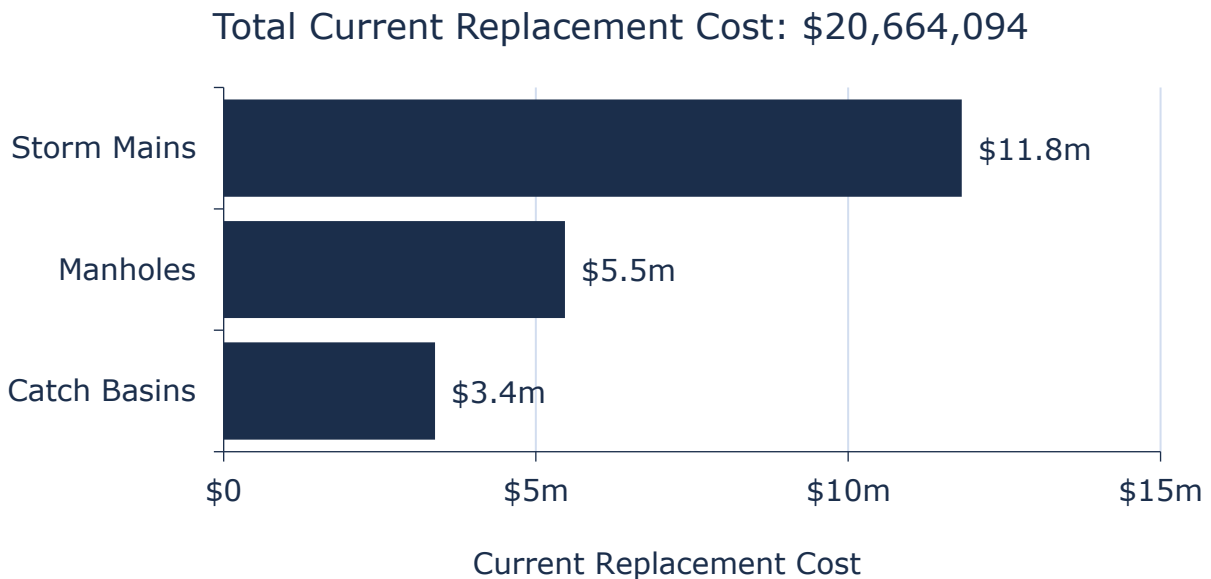


Figure 41 Portfolio Valuation: Stormwater Network

8.2 Asset Condition

Figure 42 summarizes the replacement cost-weighted condition of the Town’s stormwater management assets. Based on age data only, approximately 34% of assets are in poor to very poor condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

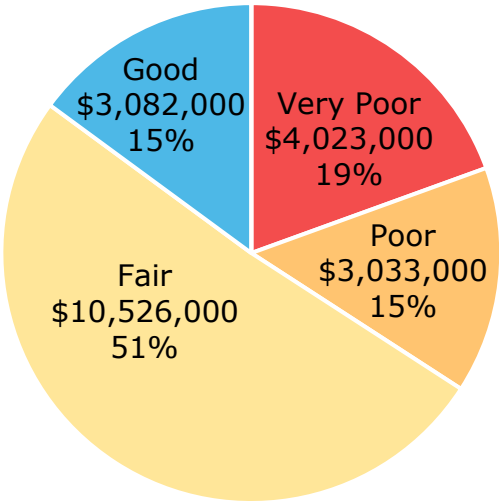


Figure 42 Asset Condition: Stormwater Network Overall

Figure 43 summarizes the age-based condition of stormwater assets. The analysis illustrates that the manholes and catch basins are in fair condition. However, 34% of mains are in poor or worse condition.

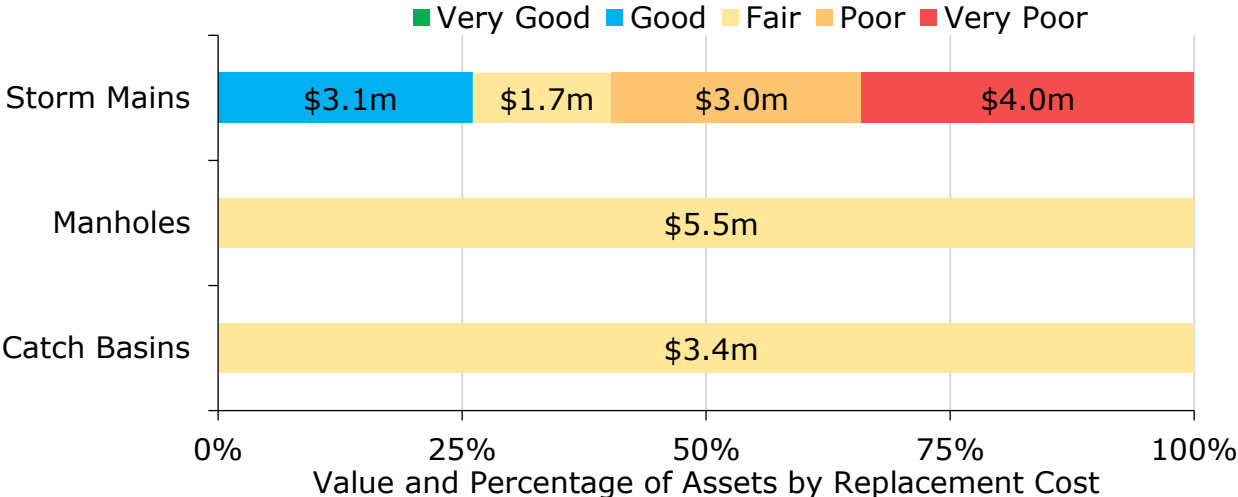


Figure 43 Asset Condition: Stormwater Network by Segment

8.3 Age Profile

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

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

Figure 44 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

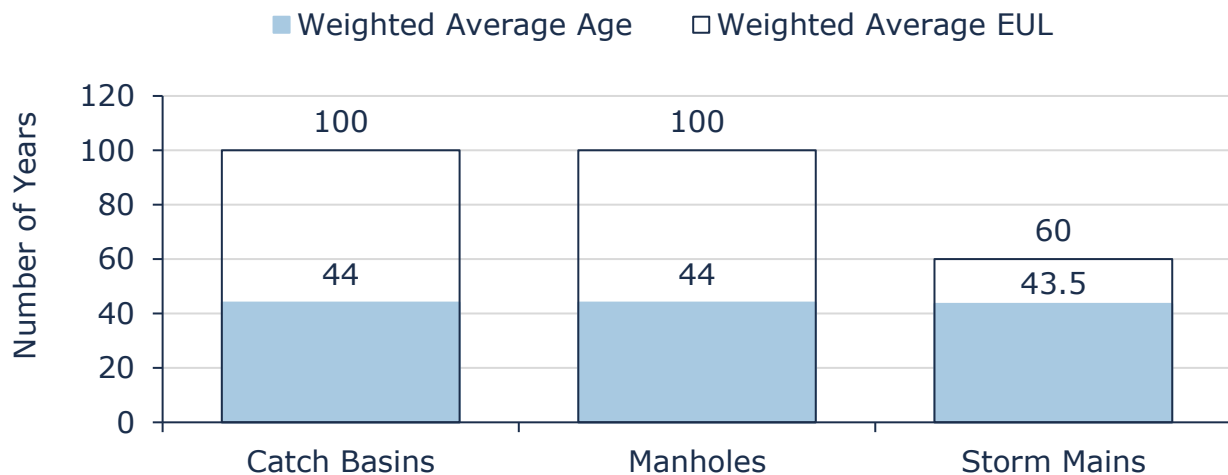


Figure 44 Estimated Useful Life vs. Asset Age: Stormwater Network

8.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Storm ditches are inspected annually and cleaned as needed.
	Select portions of the storm mains are cleaned and flushed annually in advance of CCTV inspections. The latest CCTV inspections were completed in 2023.
	To ensure proper functioning storm main frames and grates are reset as needed based on call-in requests and field observations.
Replacement	Storm main replacement decisions are primarily based on coordinating replacement with other related linear assets (i.e., roads, water, sewer) and are otherwise premised on CCTV information where available and/or identifiable issues (i.e., ponding).
Inspection	In 2021 CCTV inspections of storm mains located adjacent to major roads were completed. In 2022, Atikokan completed other storm mains that were not assessed in 2021 and are identified as problematic. In the long-term the Town intends to assemble CCTV condition information on the entire network.

Table 28 Lifecycle Management Strategy: Stormwater Network

8.5 Forecasted Long-Term Replacement Needs

Figure 45 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town’s stormwater network assets. This analysis was run until 2083 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$285,000 for all assets in the stormwater network. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

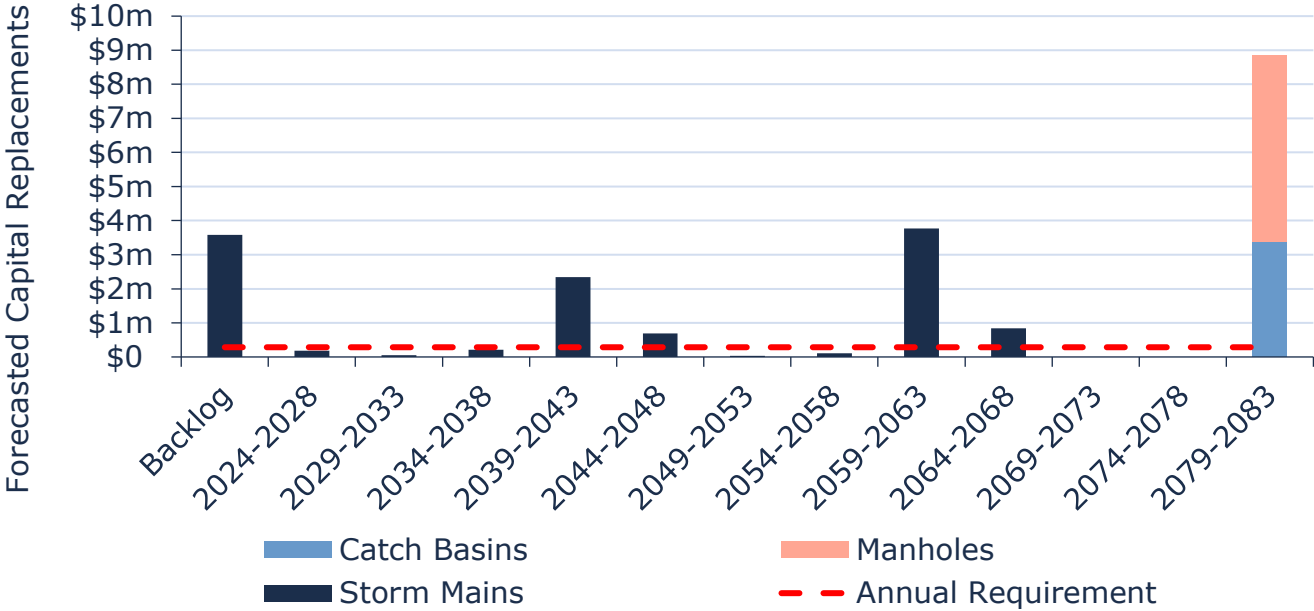


Figure 45 Forecasted Capital Replacement Needs Stormwater Network 2024-2083

The chart illustrates a backlog of \$3.6 million for stormwater assets, dominated by storm mains. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. Forthcoming CCTV inspections may reveal a higher backlog. The inspections may also help reduce long-term projections by providing more accurate condition data for mains than age. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

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

8.6 Risk Analysis

The risk matrix below is generated using available asset data, including condition, material, replacement cost and diameter. For assets where attributes were unavailable, the risk ratings for assets were calculated using only replacement cost and condition.

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

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

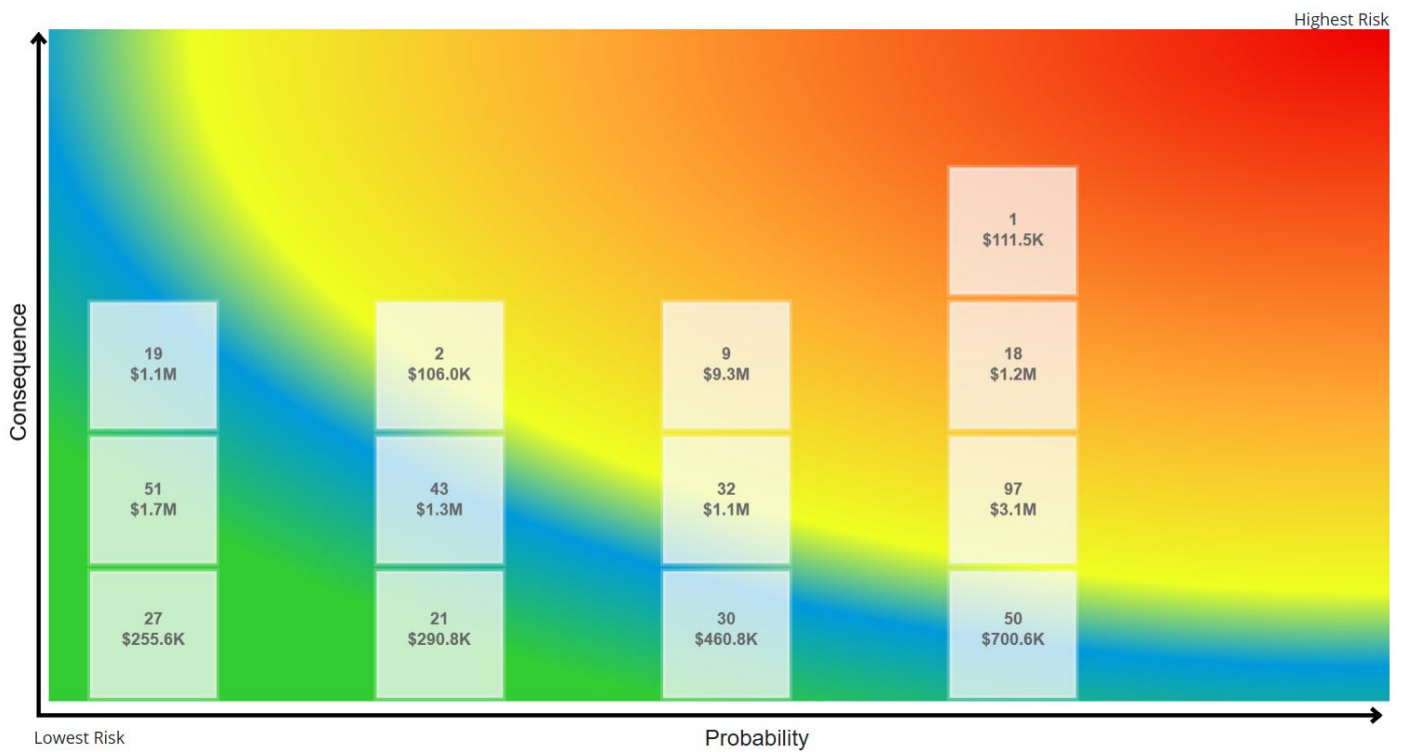


Figure 46 Risk Matrix: Stormwater Network

8.7 Levels of Service

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

8.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include map, of the user groups or areas of the Town that are protected from flooding, including the extent of protection provided by the municipal storm water network	Stormwater Infrastructure is located throughout the core areas of the Town. This infrastructure generally provides protection from flooding events to the extent of the systems design limits. See Appendix C for maps.

Table 29 O. Reg. 588/17 Community Levels of Service: Stormwater Network

8.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of properties in municipality designed to be resilient to a 100-year storm	TBD
	% of the municipal stormwater management system designed to be resilient to a 5-year storm	TBD ³
	% of stormwater network flushed annually	14%
Quality	Average condition rating for stormwater network	43%
Performance	Target vs. Actual capital reinvestment rate	1.4% vs. 7.2%

Table 30 O. Reg. 588/17 Technical Levels of Service: Stormwater Network

³ The Municipality is working to gather information on the percentage of the system that is resilient to a 5-year storm. The Municipality is also seeking to increase their storm water resilience design standard.

8.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Scope	% of stormwater network flushed annually	14%	14%	↔
Quality	Average condition rating for stormwater network	43%	50%	↑
Performance	Target vs. Actual capital reinvestment rate	1.4% vs. 7.2%	7.2% vs. 7.2%	↑

Table 31 O. Reg. 588/17 Proposed Levels of Service: Storm Water Network

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Maintaining the % of the stormwater network flushed annually allows for funding levels to be maintained, requiring no increases to the annual investment required.

Target 2: Specific target conditions for the storm water network will require an increase in the annual investment required to achieve proposed target conditions, as outlined in the Financial Strategy.

Target 3: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

Non-Core Assets

Facilities



Replacement Cost	Average Condition	Financial Capacity	
\$40.0 m	Poor	Annual Requirement:	\$1,003,000
		Funding Available:	\$547,000
		Annual Deficit:	\$456,000

Airport



Replacement Cost	Average Condition	Financial Capacity	
\$4.2 m	Poor	Annual Requirement:	\$156,000
		Funding Available:	\$48,000
		Annual Deficit:	\$107,000

Fleet



Replacement Cost	Average Condition	Financial Capacity	
\$3.2 m	Very Poor	Annual Requirement:	\$262,000
		Funding Available:	\$189,000
		Annual Deficit:	\$73,000

Machinery & Equipment



Replacement Cost	Average Condition	Financial Capacity	
\$ 3.6 m	Very Poor	Annual Requirement:	\$307,000
		Funding Available:	\$93,000
		Annual Deficit:	\$214,000



Waste Management

Replacement Cost	Average Condition	Financial Capacity	
\$ 1.4 m	Very Good	Annual Requirement:	\$43,000
		Funding Available:	\$0
		Annual Deficit:	\$43,000

9. Facilities

The Town’s facilities portfolio includes the museum, various administrative and public works facilities, as well as public libraries and recreational assets. The total current replacement of buildings is estimated at approximately \$40 million.

9.1 Inventory & Valuation

Table 32 summarizes the quantity and current replacement cost of all buildings assets available in the Municipality’s asset register. Facilities assets are not componentized. The quantity listed represents the number of asset records currently available for each department.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Educational	5	Quantity	\$2,117,000	CPI
Government	7	Quantity	\$8,726,000	CPI
Health	5	Quantity	\$1,334,000	CPI
Recreation	21	Quantity	\$26,901,000	CPI
Storage	6	Quantity	\$924,000	CPI
TOTAL			\$40,002,000	

Table 32 Detailed Asset Inventory: Facilities

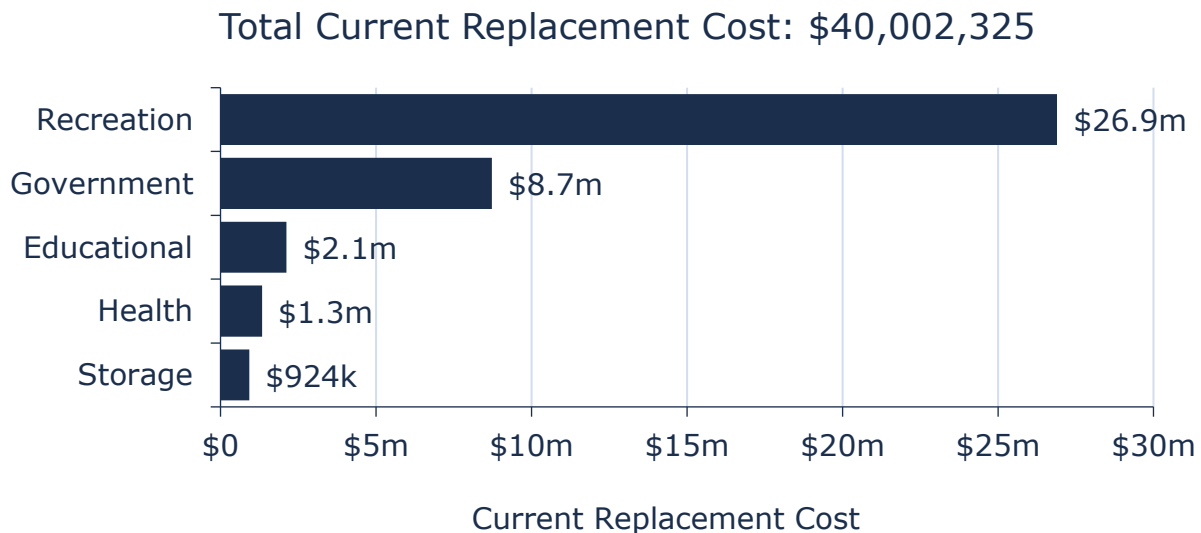


Figure 47 Portfolio Valuation: Facilities

9.2 Asset Condition

Figure 48 summarizes the replacement cost-weighted condition of the Town’s buildings portfolio. Based on age-based data, 32% of buildings assets are in fair or better condition; however, 68% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As buildings are not componentized, condition data is presented only at the site level, rather than at the individual element or component level within each building. This drawback is further compounded by the lack of assessed condition data, requiring the use of age-based estimates only.

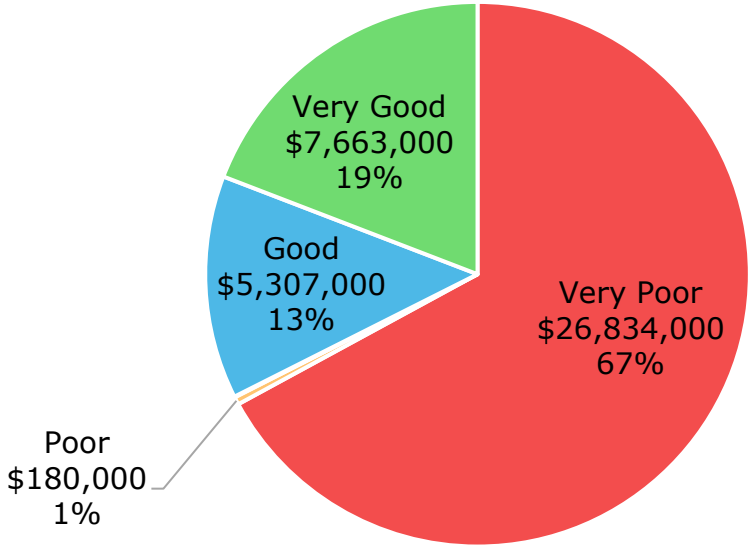


Figure 48 Asset Condition: Facilities Overall

Figure 49 summarizes the age-based condition of buildings by each department. A substantial portion of government assets and the majority storage, recreation, health and educational assets of are in poor to worse condition. However, in the absence of componentization, this data has limited value. Componentization of assets and integration of condition assessments will provide a more accurate and reliable estimation of the condition of various facilities.

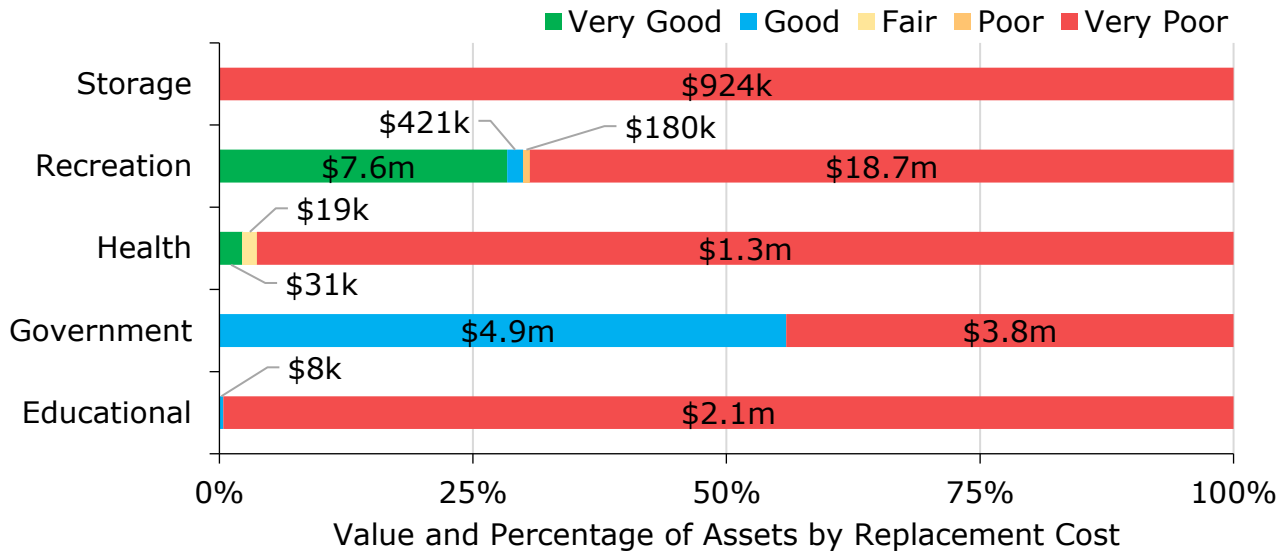


Figure 49 Asset Condition: Facilities by Segment

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

9.3 Age Profile

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

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

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

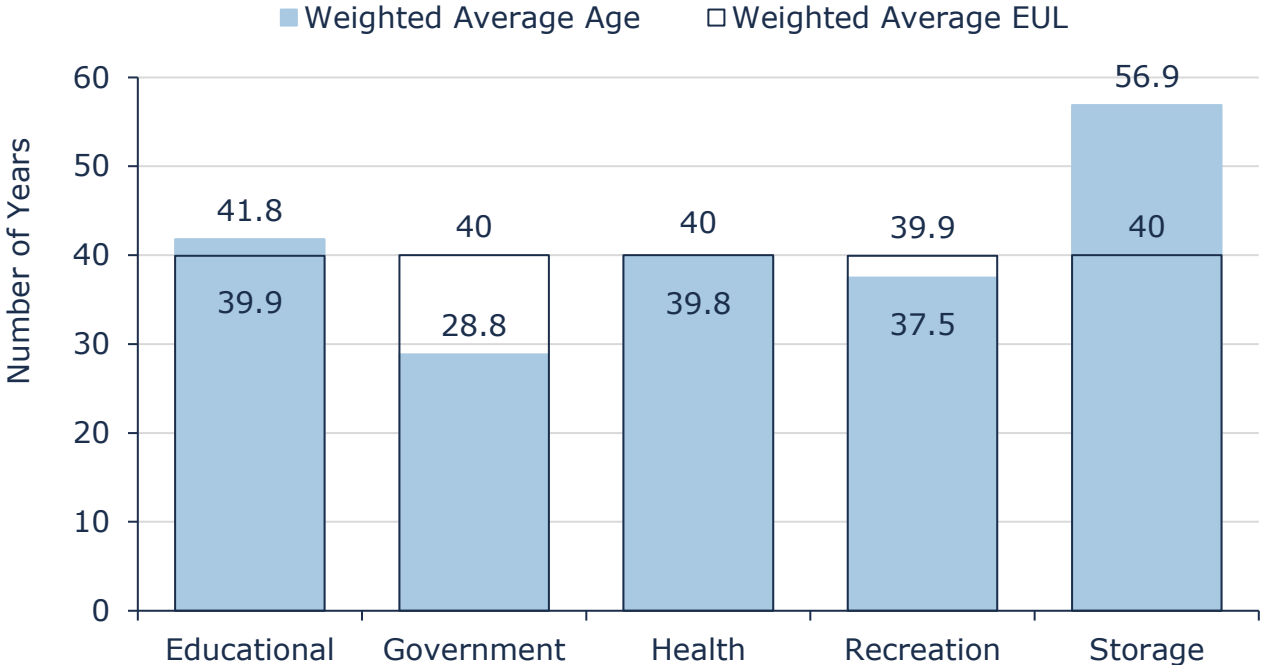


Figure 50 Estimated Useful Life vs. Asset Age: Facilities

Age analysis reveals that, on average, buildings assets are in the earlier stages of their serviceable life. However, based on acquisition years, most library and recreation assets have consumed nearly 100% of their established useful life. Once again, this analysis presented only at the site level, rather than at the individual element or component level. Useful and meaningful age analysis for buildings is entirely predicated on effective componentization.

9.4 Current Approach to Lifecycle Management

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

Table 33 outlines the Town’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Maintenance is triggered by inspections identifying safety, accessibility, functionality, and structural issues.
	HVAC servicing is completed twice annually by an external contractor
Rehabilitation/ Replacement	Rehabilitations such as roof replacements or HVAC component replacements are considered on an as needed basis
	The primary considerations for asset replacement are asset failure, availability or grant funding, safety issues and volume of use
Inspection	Internal inspections are conducted monthly for health and safety requirements, as well as to identify any maintenance concerns
	All critical components are inspected weekly by internal staff to ensure they are in proper working condition
	Facility Needs Assessment Studies are conducted by an external contractor periodically on different facilities

Table 33 Lifecycle Management Strategy: Facilities

9.5 Forecasted Long-Term Replacement Needs

Figure 51 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town’s buildings portfolio. This analysis was run until 2058 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$1.0 million for all buildings. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The chart also illustrates a backlog of more than \$26.3 million for facilities and comprising assets that have reached the end of their useful life but still remain in operation. These projections and estimates are based on current asset records, their replacement costs, and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

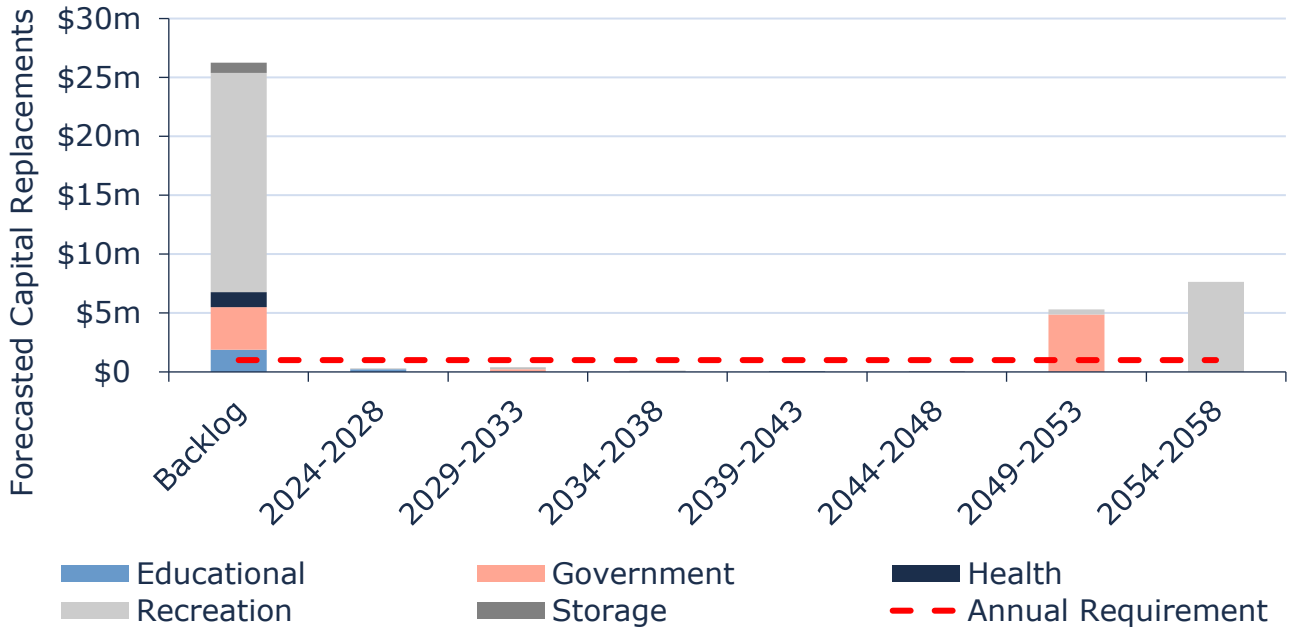


Figure 51 Forecasted Capital Replacement Needs Facilities 2024-2058

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

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

9.6 Risk Analysis

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

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

information that improves confidence in the criteria used to assess asset risk and criticality.

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

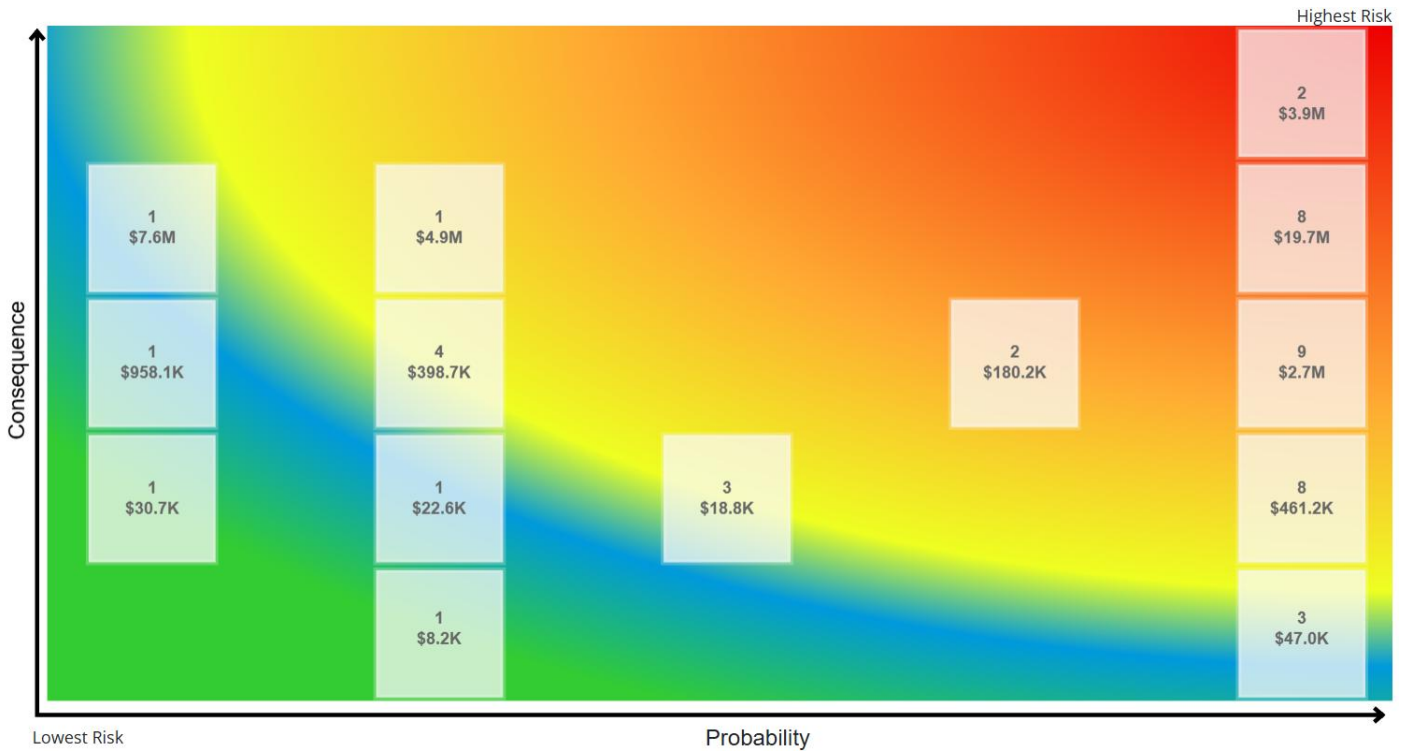


Figure 52 Risk Matrix: Facilities

9.7 Levels of Service

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

9.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include maps, of the types of facilities that the municipality operates and maintains	<p>Facilities within Atikokan include those dedicated to government, such as Town Hall and the Tourist Bureau.</p> <p>Health services are supported by the Medical Clinic and various cemetery buildings.</p> <p>Public works is supported by various equipment garages and storage shed facilities.</p> <p>Recreation provides its services through a variety of facilities such as the community center, arena, pool and golf course.</p> <p>Museums and Libraries in the Town provide educational services.</p>
Quality	Description of the inspection process and timeline for facilities	<p>Facilities are inspected monthly for health and safety concerns, and to identify any deficiencies by internal staff. Facility Needs Assessments have been completed on various buildings throughout the years on a random basis. The Town aims to improve their formal condition inspection process for their facilities, and inspect at least one facility per year going forward.</p>

Table 34 Community Levels of Service: Facilities

9.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average facility condition index value for facilities in the municipality	25%
Performance	Target vs. Actual capital reinvestment rate	2.5% vs. 1.4%

Table 35 Technical Levels of Service: Facilities

9.7.3 Proposed Levels of Service

As per O. Reg. 588/17, the municipality is mandated to document its proposed levels of service for the Buildings & Facilities. The table that follows summarizes the Municipality's proposed levels of service for the Facilities, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Quality	Average facility condition index value for facilities in the municipality	25%	30%	↑
Performance	Target vs. Actual capital reinvestment rate	2.5% vs. 1.4%	2.5% vs. 2.5%	

Table 36 O. Reg. 588/17 Proposed Levels of Service: Facilities

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Specific Condition Targets requires an increase in the condition of the Town's facilities. As the Town's building conditions are currently based solely on age, implementing a condition assessment strategy, and data governance policy, to update conditions within in the Citywide system, will result in a more accurate representation of the Town's building conditions. The Town staff has indicated that the Town's buildings are in good operating condition. Continuing to follow the defined lifecycle management strategies for buildings and implementing a condition assessment and data governance policy to update conditions in Citywide will allow the Town to achieve their target level of service.

Target 2: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

10. Airport

The Town’s airport portfolio includes the terminal building, hangar, storage shelter, fuel system, lighting, and roads. The total current replacement of airport assets is estimated at approximately \$4.2 million.

10.1 Inventory & Valuation

Table 37 summarizes the quantity and current replacement cost of all airport assets available in the Town’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Airport Buildings	4	Quantity	\$488,000	CPI
Airport Fuel System	1	Quantity	\$301,000	CPI
Airport Roads	3	Quantity	\$3,406,000	CPI
TOTAL			\$4,195,000	

Table 37 Detailed Asset Inventory: Airport

Total Current Replacement Cost: \$4,195,380

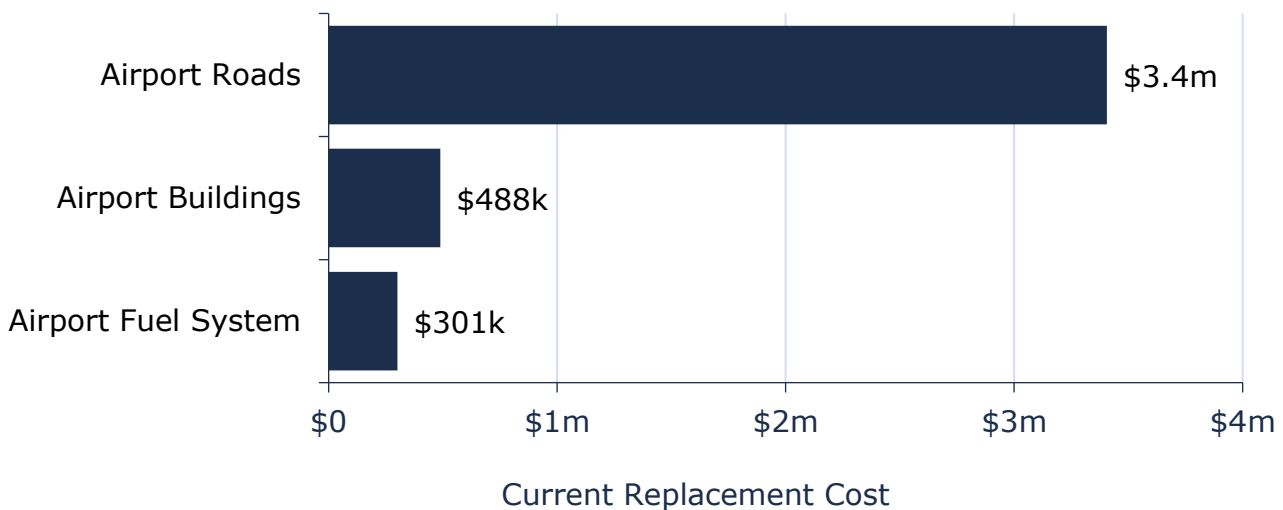


Figure 53 Portfolio Valuation: Airport

10.2 Asset Condition

Figure 54 summarizes the replacement cost-weighted condition of the Municipality’s airport portfolio. Based on age data, 34% of assets are in fair or better condition, the remaining 66% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

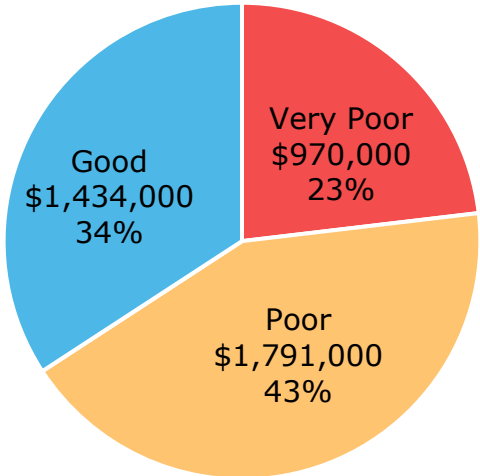


Figure 54 Asset Condition: Airport Overall

Figure 55 summarizes the age-based condition of airport assets by each department. Assets in poor or worse condition are primarily concentrated in airport fuel system and buildings.

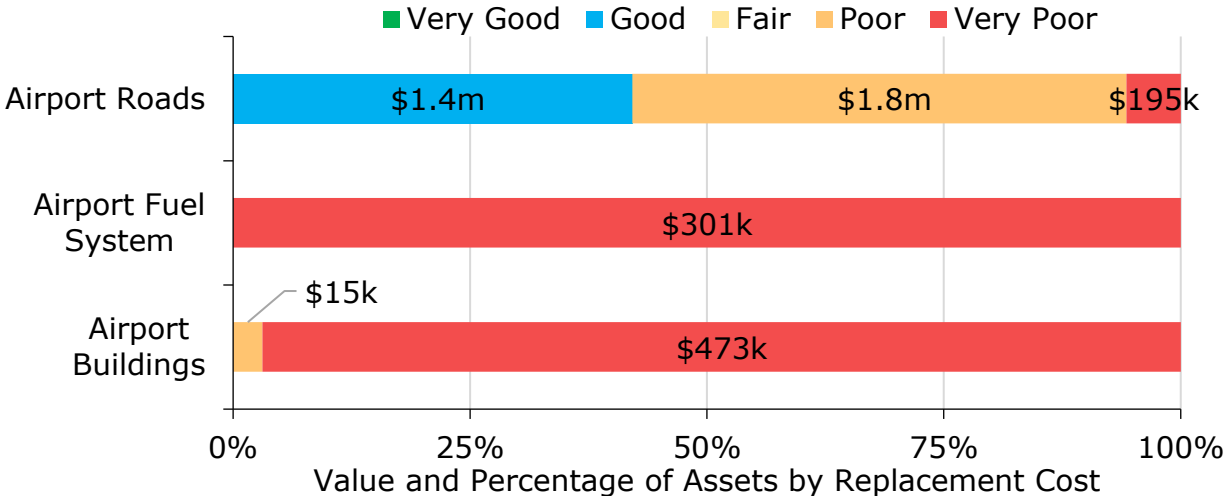


Figure 55 Asset Condition: Airport by Segment

10.3 Age Profile

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

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

Figure 56 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

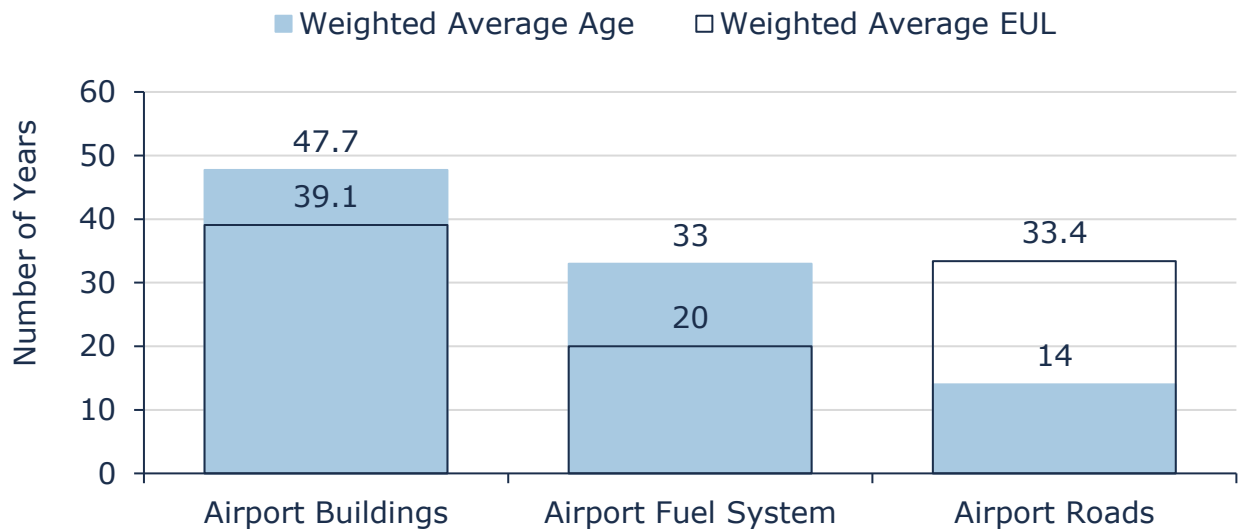


Figure 56 Estimated Useful Life vs. Asset Age: Airport

10.4 Current Approach to Lifecycle Management

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

Table 38 outlines the Town’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Brushing and spraying is completed every 2 years
Rehabilitation / Replacement	Crack-sealing is completed annually on the airport runway Replacement is considered when an asset fails, fails to meet the Navigation Canada regulations, or when breakdowns become more frequent
Inspections	Inspections are conducted daily by internal staff to ensure condition remains consistent day to day and ensure compliance with Navigation Canada regulations A consultant is brought in on an as-needed basis to provide a more in-depth inspection and recommendations

Table 38 Lifecycle Management Strategy: Airport

10.5 Forecasted Long-Term Replacement Needs

Figure 57 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town’s airport portfolio. This analysis was run until 2063 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$156,000 for all airport assets. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The analysis also includes a backlog of \$970,000. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

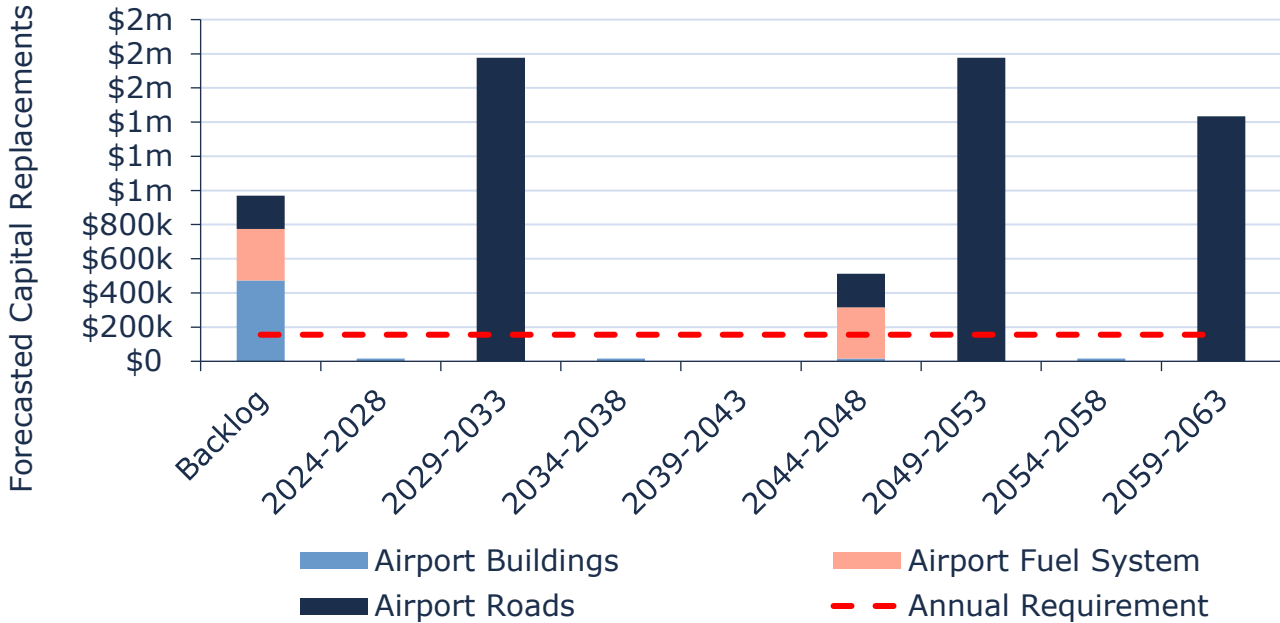


Figure 57 Forecasted Capital Replacement Needs: Airport 2024-2063

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

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

10.6 Risk Analysis

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

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

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

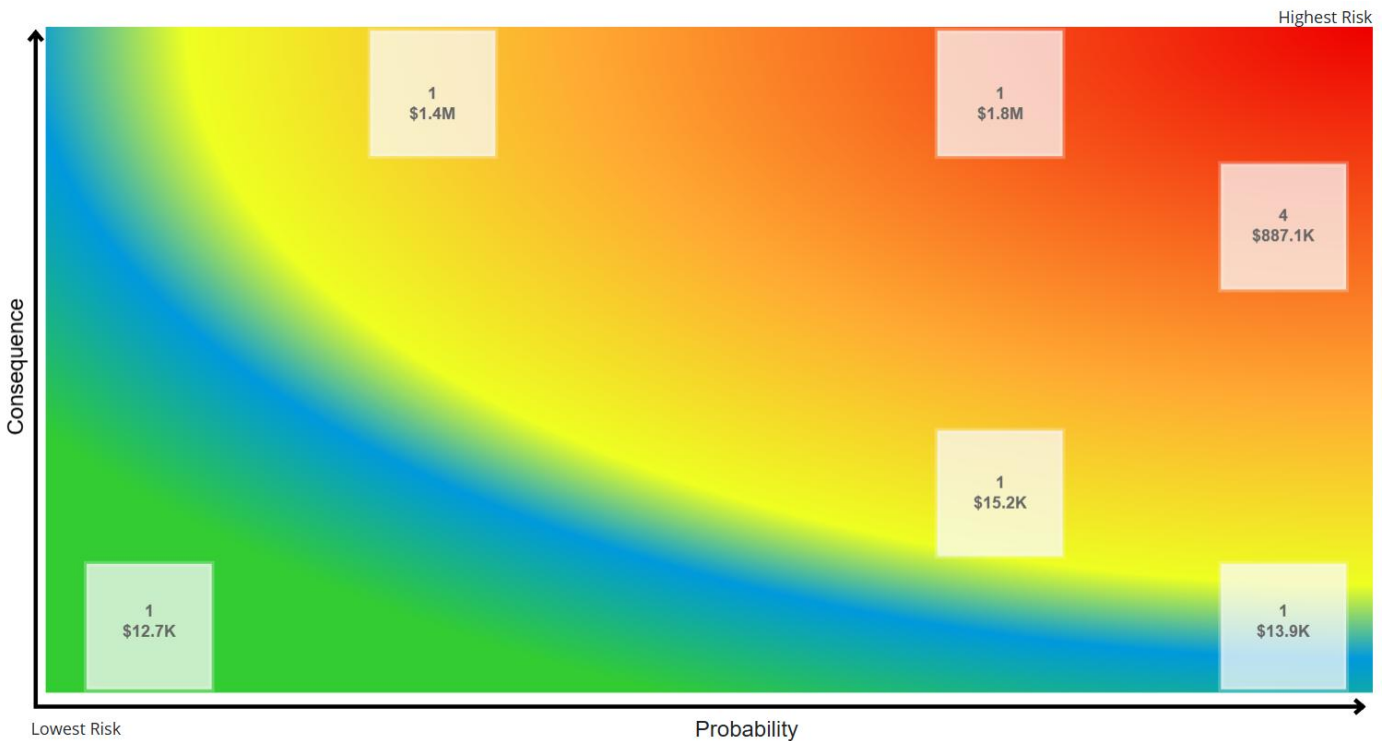


Figure 58 Risk Matrix: Land Improvements

10.7 Levels of Service

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

10.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description of the airport assets that the municipality operates and maintains	The Town operates a variety of assets to support the airport including the terminal building, hangar/garage, storage shelter, fuel system, lighting, runway, and emergency measures tower.

Table 39 Community Levels of Service: Airport

10.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of airport assets in the municipality (e.g very good, good, fair, poor, very poor)	Poor
Performance	Target vs. Actual capital reinvestment rate	3.7% vs. 1.2%

Table 40 Technical Levels of Service: Airport

10.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Quality	Average condition of airport assets in the municipality (e.g very good, good, fair, poor, very poor)	Poor	Fair	↑
Performance	Target vs. Actual capital reinvestment rate	3.7% vs. 1.2%	3.7% vs. 3.7%	

Table 41 O. Reg. 588/17 Proposed Levels of Service: Airport

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Specific Condition Targets will require an increase in the annual investment required to achieve the proposed condition target, as per the Financial Strategy.

Target 2: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

11. Fleet

The Town’s vehicles portfolio includes 37 assets that support a variety of general and essential services, including public works, admin, the fire department, and recreation. The total current replacement of vehicles is estimated at approximately \$3 million.

11.1 Inventory & Valuation

Table 42 summarizes the quantity and current replacement cost of all vehicle assets available in the Town’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Admin	3	Quantity	\$80,000	CPI
Fire Services	7	Quantity	\$1,666,000	CPI
Public Works	21	Quantity	\$1,094,000	CPI
Recreation & Social Services	6	Quantity	\$413,000	CPI
TOTAL			\$3,252,000	

Table 42 Detailed Asset Inventory: Fleet

Total Current Replacement Cost: \$3,251,924

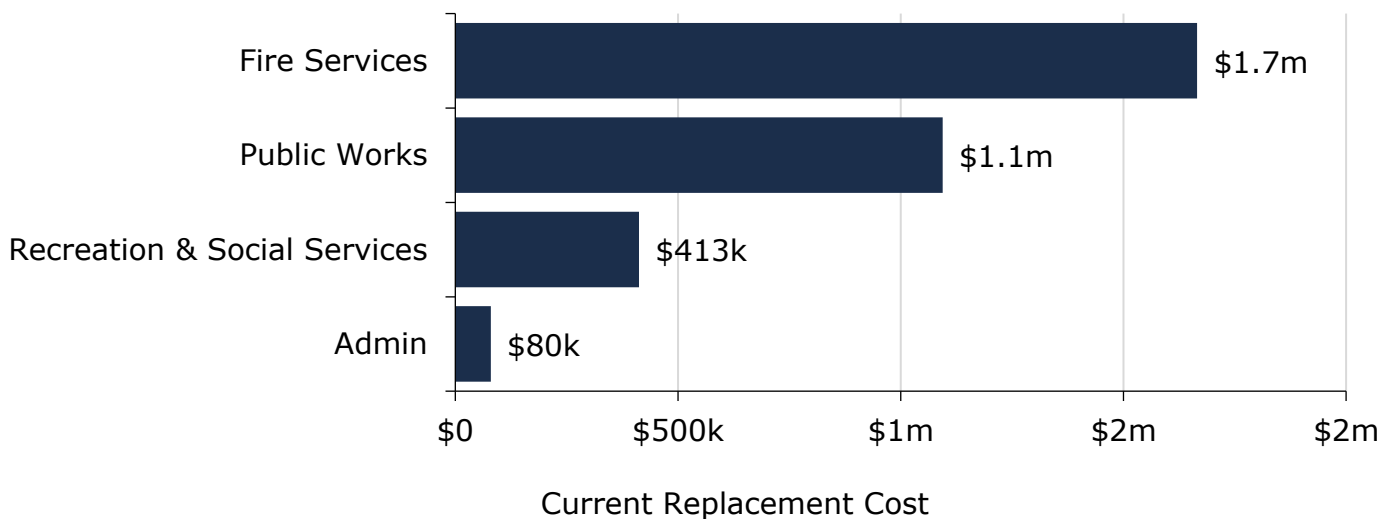


Figure 59 Portfolio Valuation: Fleet

11.2 Asset Condition

Figure 60 summarizes the replacement cost-weighted condition of the Town’s vehicles portfolio. Based on age-based data, 11% of vehicles are in fair or better condition, with the remaining 89% in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

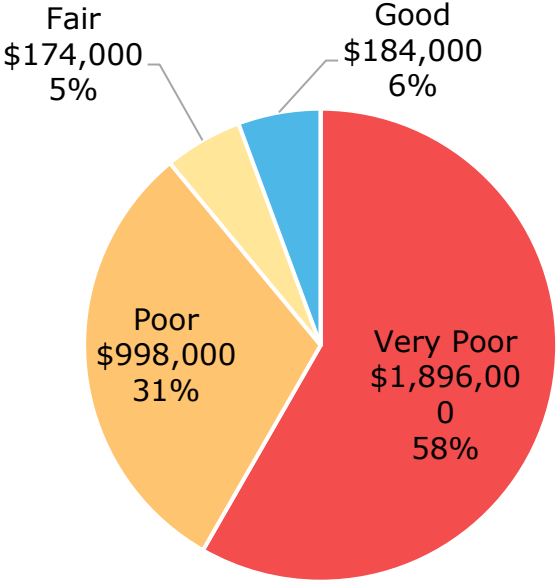


Figure 60 Asset Condition: Fleet Overall

Figure 61 summarizes the condition of vehicles by each department. The majority of all vehicles across all asset segments are in poor or worse condition.

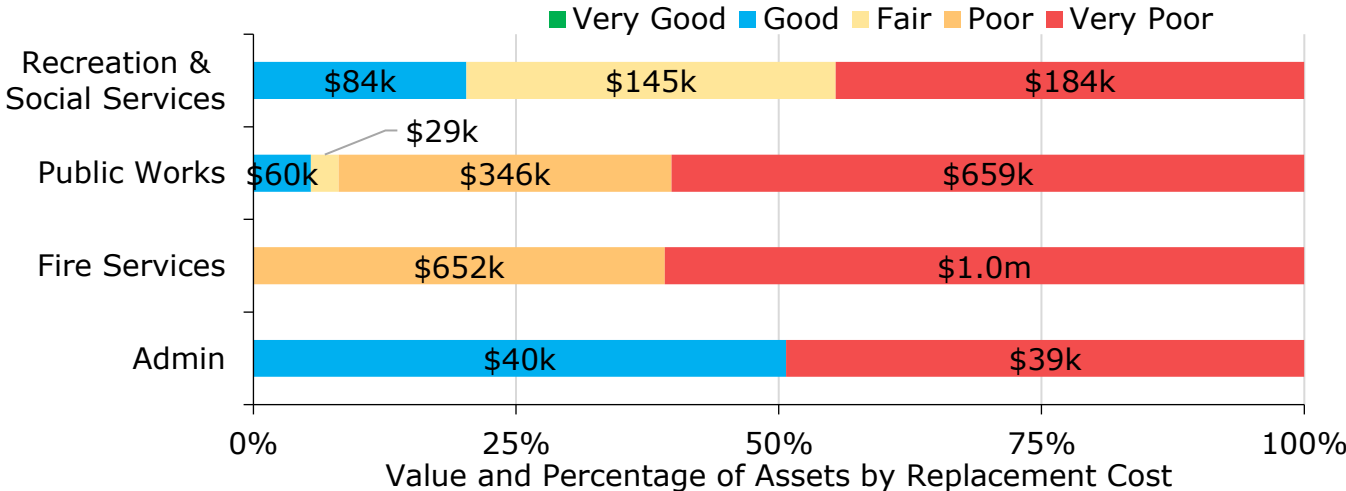


Figure 61 Asset Condition: Fleet by Segment

11.3 Age Profile

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

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

Figure 62 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

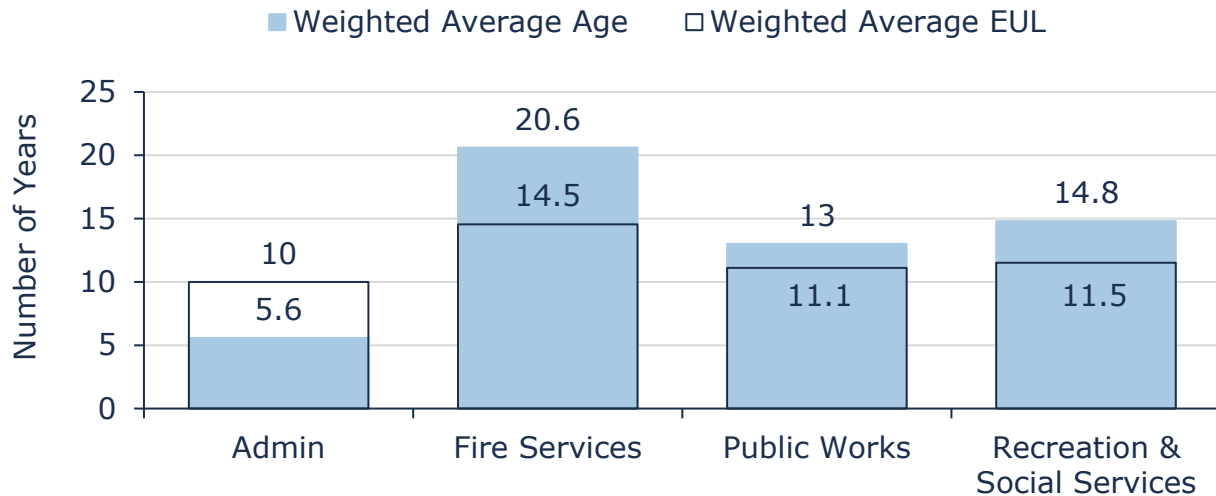


Figure 62 Estimated Useful Life vs. Asset Age: Fleet

11.4 Current Approach to Lifecycle Management

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

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

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

Table 43 Lifecycle Management Strategy: Fleet

11.5 Forecasted Long-Term Replacement Needs

Figure 63 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town’s vehicles portfolio. This analysis was run until 2033 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$262,000 for all vehicles. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The analysis also shows a backlog of approximately \$1.7 million. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

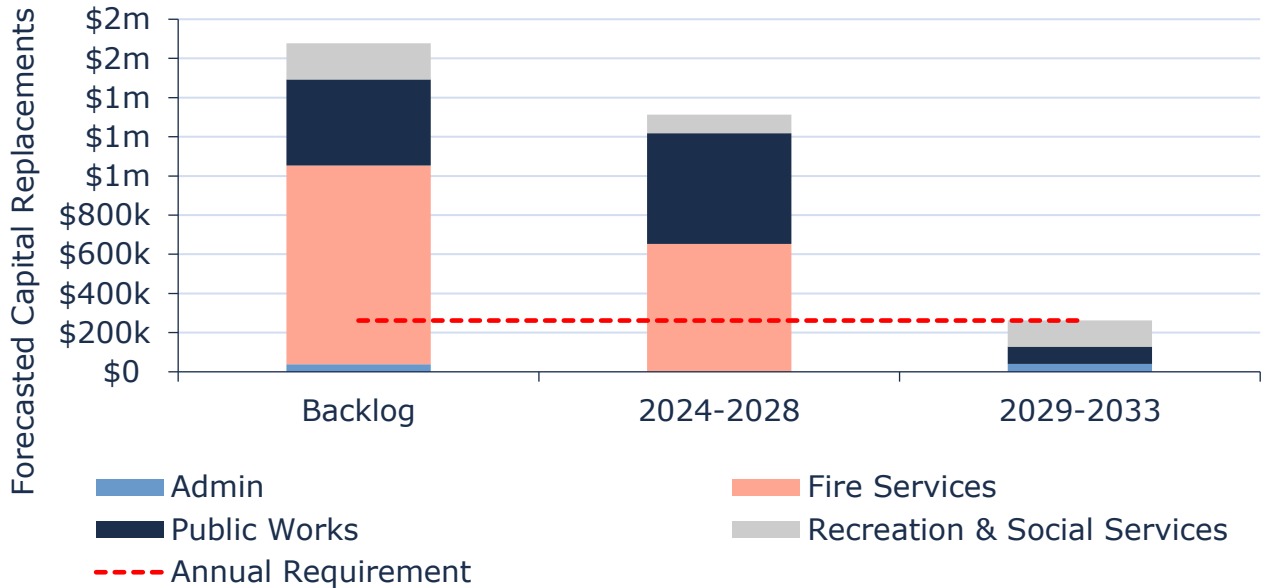


Figure 63 Forecasted Capital Replacement Needs: Fleet 2024-2033

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

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

11.6 Risk Analysis

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

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

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

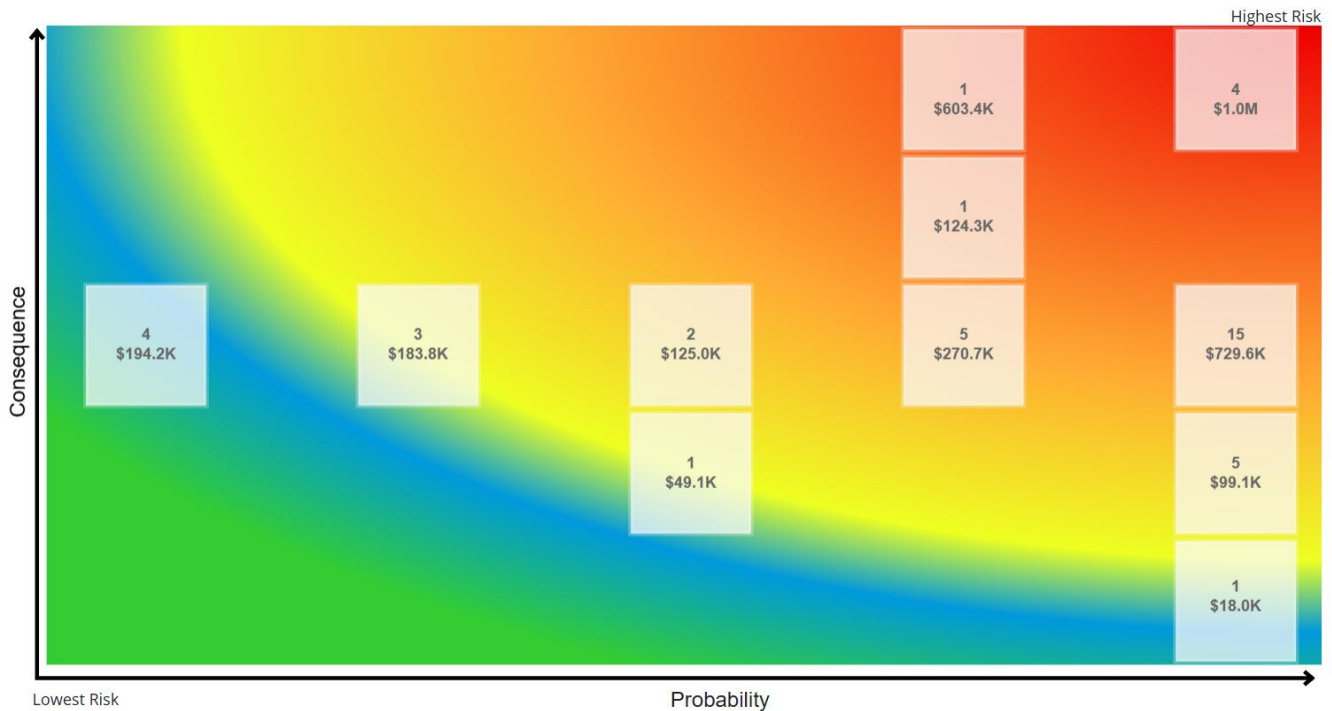


Figure 64 Risk Matrix: Fleet

11.7 Levels of Service

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

11.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, of the types of vehicles (i.e. light, medium, and heavy duty) that the municipality operates and the services that they help to provide to the community	Fire Services are supported by a variety of heavy and light duty vehicles including pumpers, rescue vehicles, and fire trucks. Light duty trucks support admin, public works, and recreation services. Public works also operates a number of heavy-duty vehicles, including ½ ton and ¾ trucks, garbage trucks, and dozers.

Table 44 Community Levels of Service: Fleet

11.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of fire vehicles (e.g. very good, good, fair, poor, very poor)	Very Poor ⁴
	Average condition of other vehicles (e.g. very good, good, fair, poor, very poor)	Poor
Performance	Target vs. Actual capital reinvestment rate	8.1% vs. 5.8%

Table 45 Technical Levels of Service: Fleet

⁴ This condition is based on Citywide data, which relies on defined estimated useful life and asset age. All fire vehicles are inspected and replaced according to the fire safety act to ensure they are in good operating condition.

11.7.3 Proposed Levels of Service

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

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Quality	Average condition of fire vehicles (e.g. very good, good, fair, poor, very poor)	Very Poor	Fair	
	Average condition of other vehicles (e.g. very good, good, fair, poor, very poor)	Poor	Fair	↑
Performance	Target vs. Actual capital reinvestment rate	8.1% vs. 5.8%	8.1% vs. 8.1%	

Table 46 Table 8 O. Reg. 588/17 Proposed Levels of Service: Fleet

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Specific Condition Targets –vehicles requires an increase in the condition of the Town’s fire vehicles. As the Town’s vehicle conditions are currently based solely on age, implementing a condition assessment strategy, and data governance policy, to update conditions within in the Citywide system, will result in a more accurate representation of the Town’s vehicle conditions. The Town staff has indicated that the Town’s fire vehicles are in good operating condition. Continuing to follow the defined lifecycle management strategies for vehicles and implementing a condition assessment and data governance policy to update conditions in Citywide will allow the Town to achieve their target level of service.

Target 2: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

12. Machinery & Equipment

The Town’s machinery and equipment portfolio includes a variety of assets that support a combination of general and essential services, including recreation, fire and public works. The total current replacement of machinery & equipment is estimated at approximately \$3.6 million.

12.1 Inventory & Valuation

Table 47 summarizes the quantity and current replacement cost of all machinery & equipment assets available in the Town’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire Equipment	12	Quantity	\$329,000	CPI
General I. T	7	Quantity	\$96,000	CPI
Public Works Equipment	27	Quantity	\$2,086,000	CPI
Recreation Equipment	35	Quantity	\$1,057,000	CPI
TOTAL			\$3,567,000	

Table 47 Detailed Asset Inventory: Machinery & Equipment

Total Current Replacement Cost: \$3,567,452

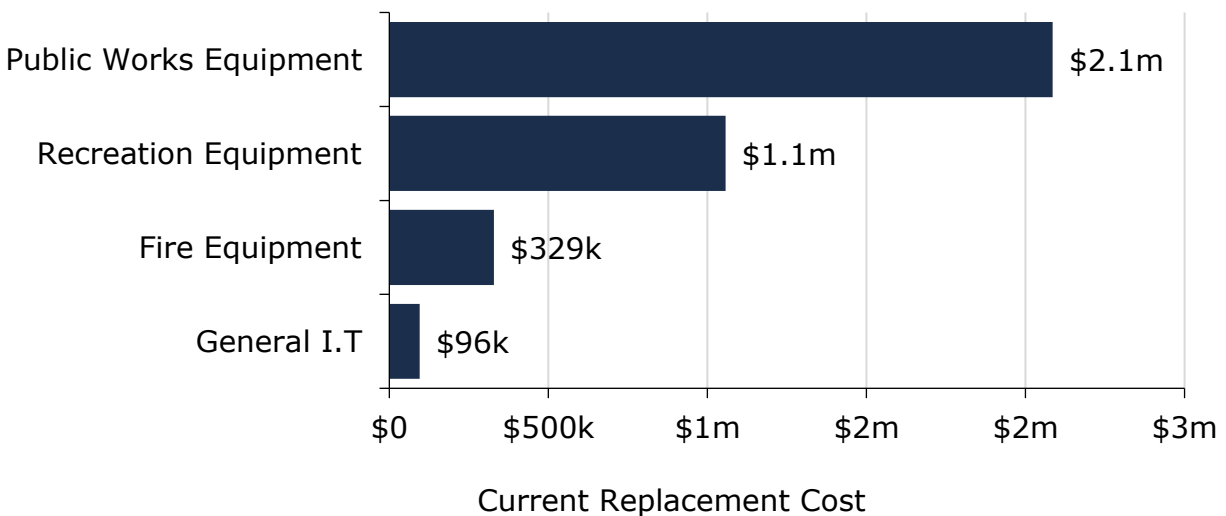


Figure 65 Portfolio Valuation: Machinery & Equipment

12.2 Asset Condition

Figure 66 summarizes the replacement cost-weighted condition of the Town’s machinery and equipment portfolio. Based on a combination of assessed conditions and age data, 25% of assets are in fair or better condition; the remaining 75% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

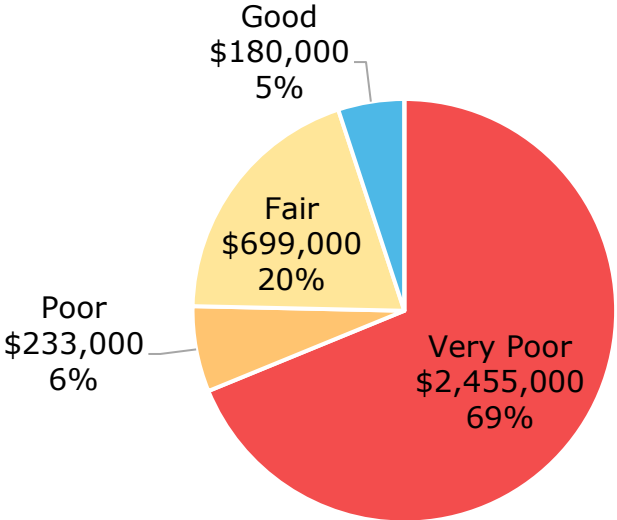


Figure 66 Asset Condition: Machinery & Equipment Overall

Figure 67 summarizes the age-based condition of machinery & equipment by each department. The majority of assets are in poor or worse condition.

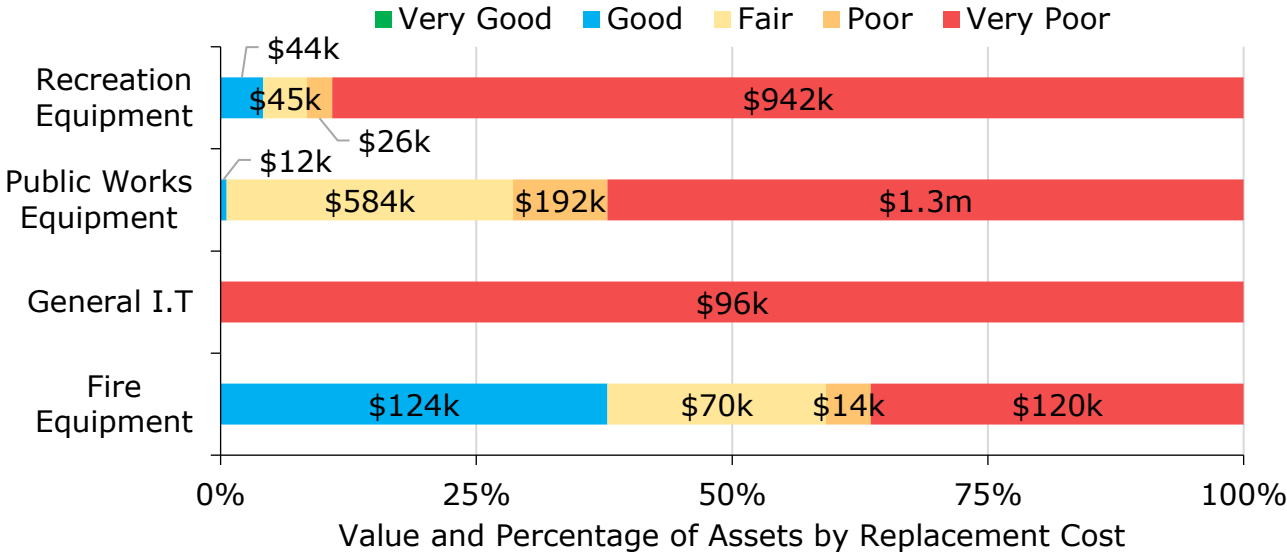


Figure 67 Asset Condition: Machinery & Equipment by Segment

12.3 Age Profile

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

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

Figure 68 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

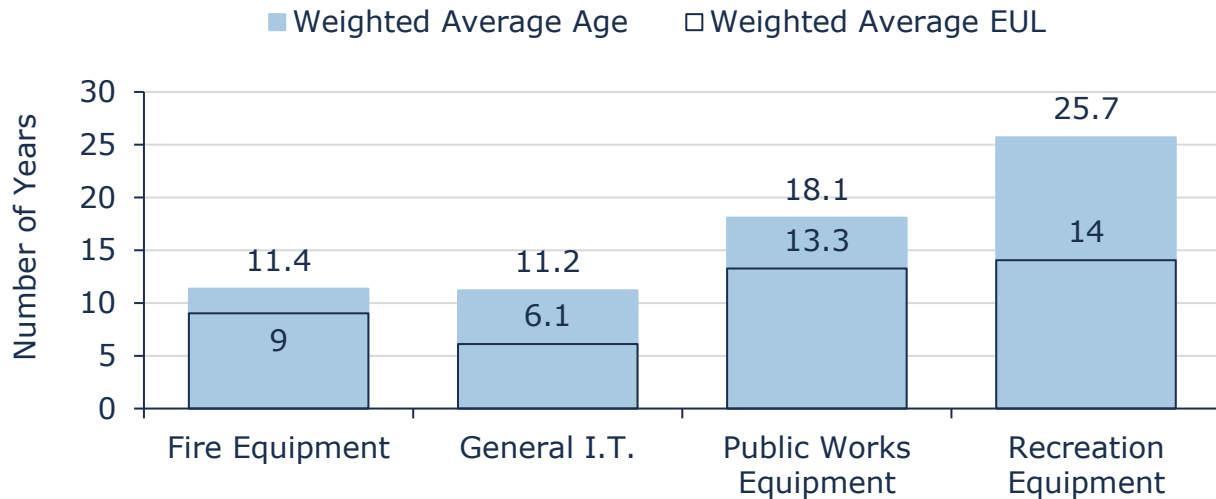


Figure 68 Estimated Useful Life vs. Asset Age: Machinery & Equipment

12.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities vary by department and are specific to each piece of equipment, but typically as per manufacturer recommendations
	Fire Protection Services equipment is subject to a much more rigorous inspection and maintenance program compared to most other departments
Replacement	The replacement of machinery & equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks
Inspection	Machinery and Equipment is inspected prior to use by the operator to identify any deficiencies. Fire equipment is inspected on a regular schedule dictated by the Fire Safety Act

Table 48 Lifecycle Management Strategy: Machinery & Equipment

12.5 Forecasted Long-Term Replacement Needs

Figure 69 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town’s machinery and equipment portfolio. This analysis was run until 2043 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$307,000 for all machinery and equipment. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

The analysis also shows a backlog of approximately \$2.0 million. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

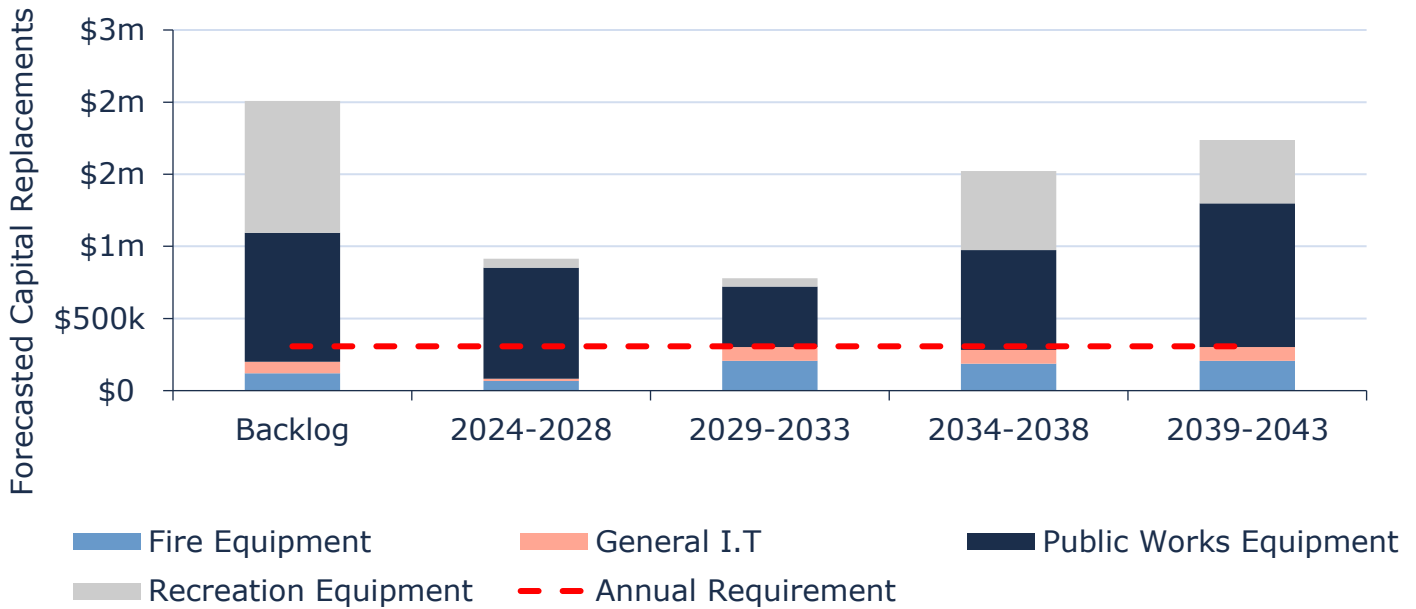


Figure 69 Forecasted Capital Replacement Needs: Machinery & Equipment 2024-2043

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

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

12.6 Risk Analysis

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

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

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

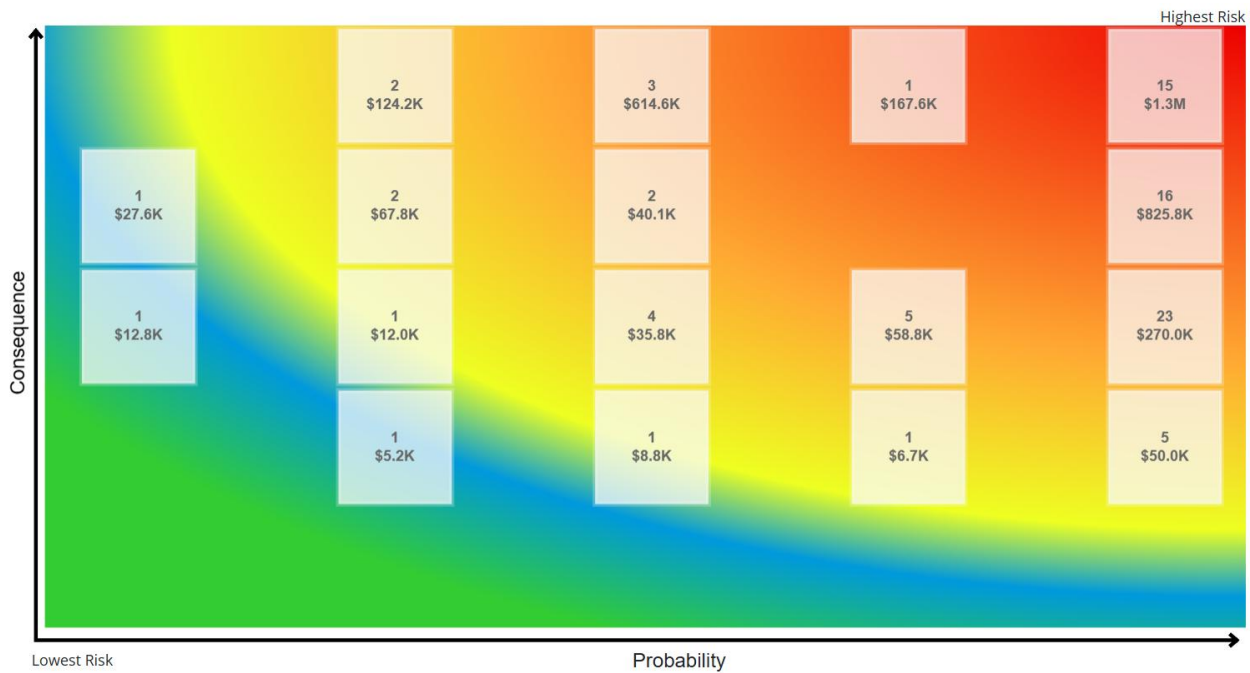


Figure 70 Risk Matrix: Machinery & Equipment

12.7 Levels of Service

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

12.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description, which may include images, of the types of equipment that the municipality operates and the services that they help to provide to the community	Administration is supported by equipment such as phone systems and software. Fire is supported by equipment such as thermal imaging cameras, communication towers, and extraction equipment.

Service Attribute	Qualitative Description	Current LOS (2023)
		Recreation is supported by mowers, golf carts, tractors, and trail groomers. Public Works is supported by equipment such as graders, snowplows, trailers, mowers, and heavy equipment.

Table 49 Community Levels of Service: Machinery & Equipment

12.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of fire equipment (e.g. very good, good, fair, poor, very poor)	Poor ⁵
	Average condition of other equipment (e.g. very good, good, fair, poor, very poor)	Very Poor
Performance	Target vs. Actual capital reinvestment rate	8.6% vs. 2.6%

Table 50 Technical Levels of Service: Machinery & Equipment

12.7.3 Proposed Levels of Service

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

⁵ This condition is based on Citywide data, which relies on defined estimated useful lives and asset age. Fire equipment is tested and replaced in accordance with the Fire Safety Act to ensure it remains in good operating condition.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Quality	Average condition of fire equipment (e.g. very good, good, fair, poor, very poor)	Poor	Fair	↑
	Average condition of other equipment (e.g. very good, good, fair, poor, very poor)	Very Poor	Fair	
Performance	Target vs. Actual capital reinvestment rate	8.6% vs. 2.6%	8.6% vs. 8.6%	

Table 51 O. Reg. 588/17 Proposed Levels of Service: Machinery & Equipment

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Specific Condition Targets requires an increase in the condition of the Town’s machinery & equipment. As the Town’s machinery & equipment conditions are currently based solely on age, implementing a condition assessment strategy, and data governance policy, to update conditions within in the Citywide system, will result in a more accurate representation of the Town’s machinery & equipment conditions. The Town staff has indicated that the Town’s machinery & equipment are in good operating condition. Continuing to follow the defined lifecycle management strategies for machinery & equipment and implementing a condition assessment and data governance policy to update conditions in Citywide will allow the Town to achieve their target level of service.

Target 2: Achieving the target capital reinvestment rate will require the Town to implement the tax increase of 0.2% annually for the next 20 years, as outlined in the Financial Strategy.

13. Waste Management

The Town’s waste management portfolio includes the transfer station and pipeline road landfill. The total current replacement of waste management assets is estimated at approximately \$1.4 million.

13.1 Inventory & Valuation

Table 52 summarizes the quantity and current replacement cost of all waste management assets available in the Town’s asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Pipeline Road Landfill	2	Quantity	\$1,223,000	CPI
Transfer Station	2	Quantity	\$181,000	CPI
TOTAL			\$1,404,000	

Table 52 Detailed Asset Inventory: Waste Management

Total Current Replacement Cost: \$1,403,522

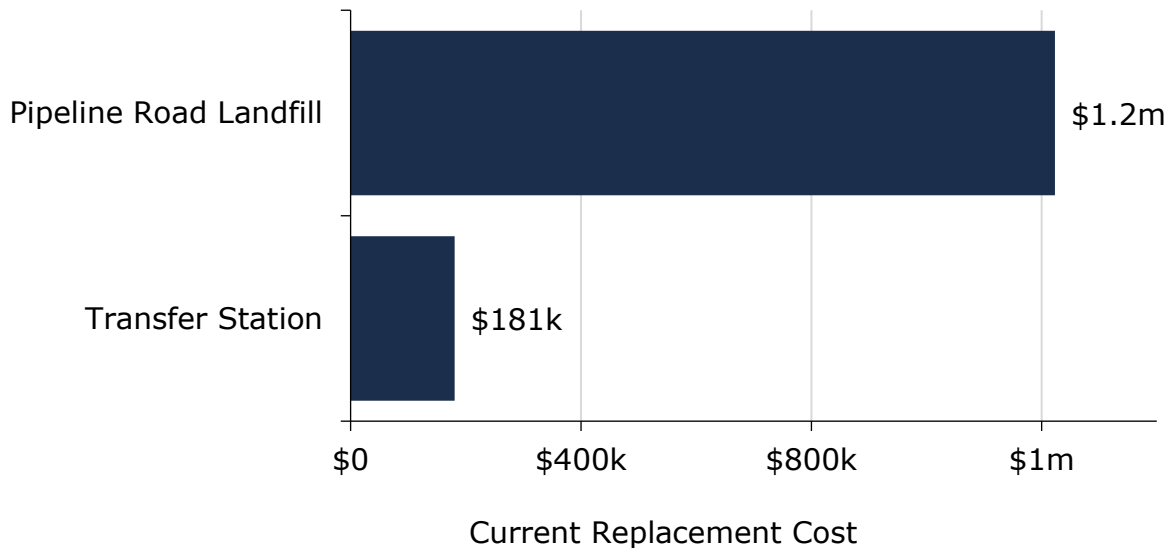


Figure 71 Portfolio Valuation: Waste Management

13.2 Asset Condition

Figure 72 summarizes the replacement cost-weighted condition of the Town’s waste management portfolio. Based on a combination of assessed conditions and age data, 88% of assets are in fair or better condition; the remaining 12% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

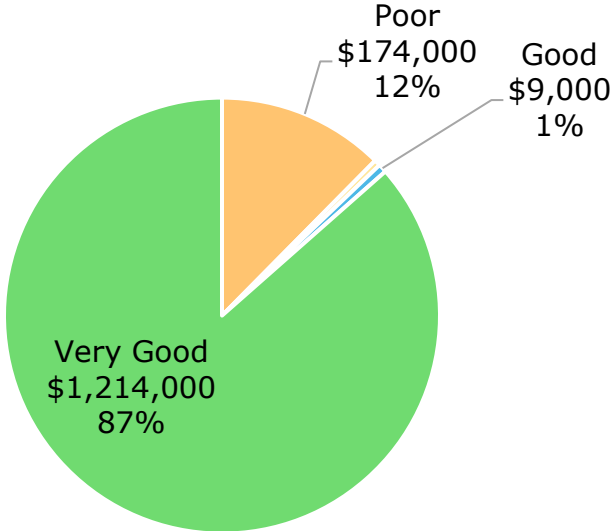


Figure 72 Asset Condition: Waste Management Overall

Figure 73 summarizes the age-based condition of waste management by each department. The majority of assets are in very good condition.

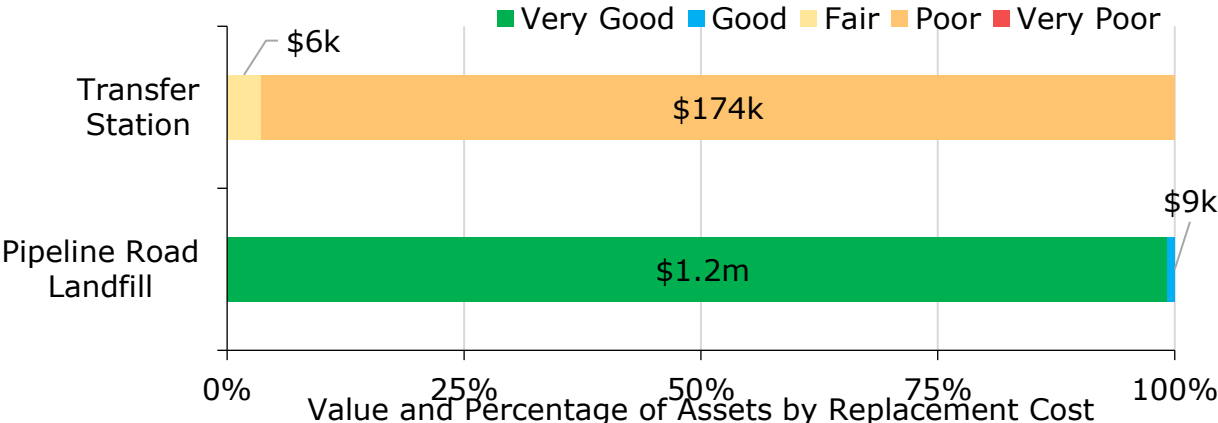


Figure 73 Asset Condition: Waste Management by Segment

13.3 Age Profile

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

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

Figure 74 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

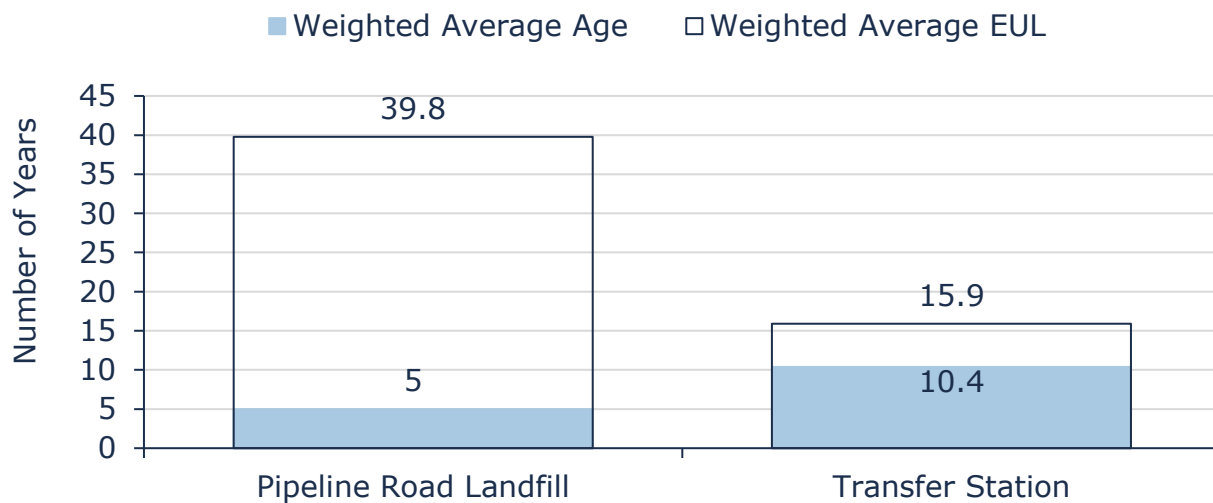


Figure 74 Estimated Useful Life vs. Asset Age: Waste Management

13.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Maintenance and rehabilitation activities are dictated by a list of recommendations provided by the engineers when they perform their annual survey on the landfill.
Replacement	Replacement is considered when the landfill reaches its capacity. A estimated useful life of 40 years is applied to the landfill, and the annual surveys determine if the town is on par to operate for the full intended life, or if replacement should be considered earlier based on the capacity used.
Inspection	Landfill sampling is completed twice a year for monitoring wells. Annual surveys are completed on the capacity of the landfill to ensure they are not over capacity, but no condition rating is applied.

Table 53 Lifecycle Management Strategy: Waste Management

13.5 Forecasted Long-Term Replacement Needs

Figure 75 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town’s waste management portfolio. This analysis was run until 2063 to capture at least one iteration of replacement for the longest-lived asset in Citywide Assets. The Town’s average annual requirements total \$43,000 for all waste management assets. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

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

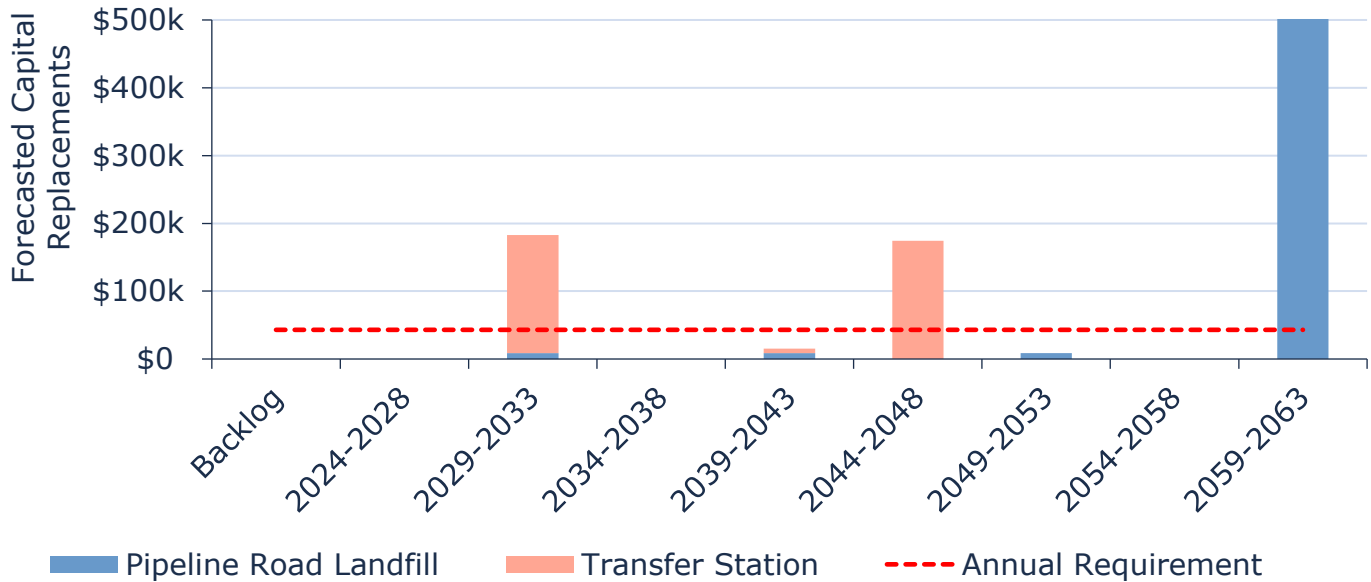


Figure 75 Forecasted Capital Replacement Needs: Waste Management 2024-2063

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

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

13.6 Risk Analysis

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

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

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

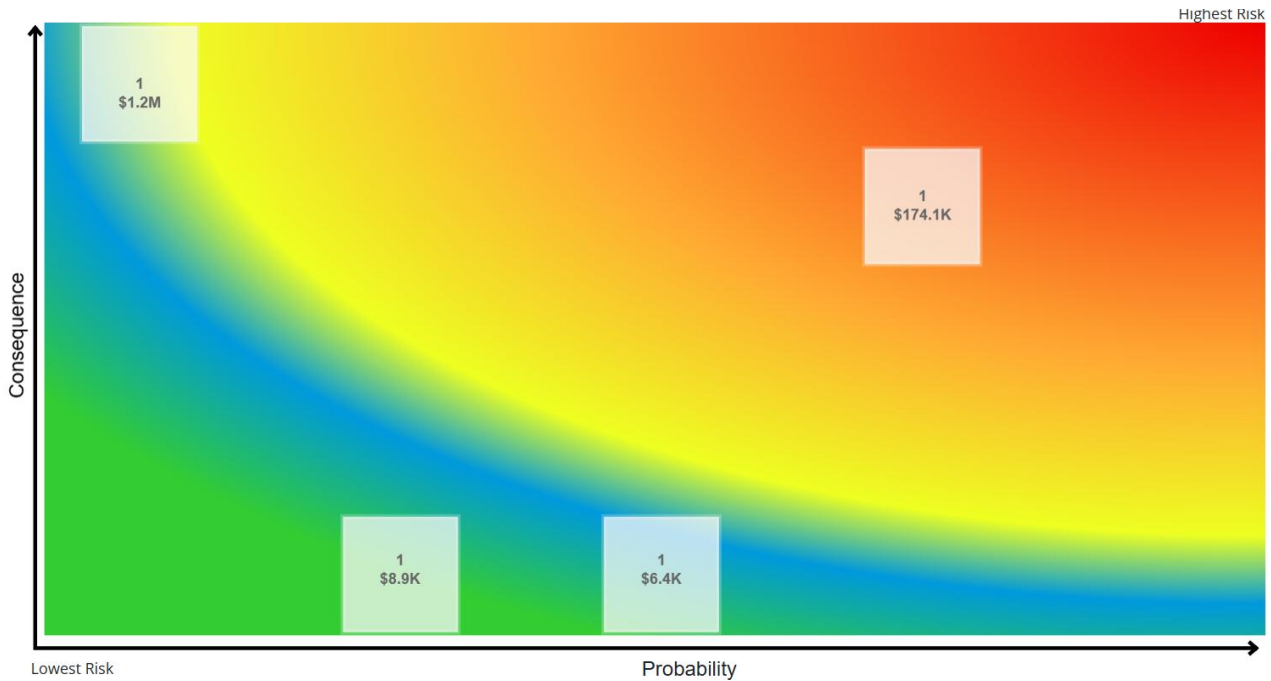


Figure 76 Risk Matrix: Waste Management

13.7 Levels of Service

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

13.7.1 Community Levels of Service

Service Attribute	Qualitative Description	Current LOS (2023)
Scope	Description or images of the waste management assets that the municipality operates	The Pipe Line Road Landfill includes the landfill and bulb eater. The Transfer station includes the dump shack and the dump truck.

Table 54 Community Levels of Service: Waste Management

13.7.2 Technical Levels of Service

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition of waste management assets (e.g. very good, good, fair, poor, very poor)	Very Good
Performance	Target vs. Actual capital reinvestment rate	3.1% vs. 0%

Table 55 Technical Levels of Service: Waste Management

13.7.3 Proposed Levels of Service

As per O. Reg. 588/17, the municipality is mandated to document its proposed levels of service for the Waste Management assets. The table that follows summarizes the Municipality's proposed levels of service for the Waste Management assets, for the following 10 years.

Service Attribute	LOS Metric	Current LOS	Target LOS	Trend
Quality	Average condition of waste management assets (e.g. very good, good, fair, poor, very poor)	Very Good	Very Good	↔
Performance	Target vs. Actual capital reinvestment rate	3.1% vs. 0%	3.1% vs. 3.1%	↑

Table 56 O. Reg. 588/17 Proposed Levels of Service: Waste Management

Proposed Levels of Service Scenarios

For all selected target levels of service, affordability and achievability must be analyzed.

Target 1: Maintaining the condition of the waste management assets allows for funding levels to be maintained, requiring no increases to the annual investment required.

Target 2: Achieving the target capital reinvestment rate will require the Town to implement the waste management rate increase of 3.2% annually for the next 20 years, as outlined in the Financial Strategy.

Strategies



Growth



Financial Strategy



Recommendations

14. Growth

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

14.1 Atikokan Official Plan (March 2002)

The Town of Atikokan adopted an Official Plan in 2002 to direct its management of change and guide future development over a 20-year planning horizon. These principles aim to stimulate economic growth, protect the environment and public health, promote sustainable use of natural resources, and mitigate costs by limiting development in risk-prone areas.

The Official Plan's goals and objectives are designed to protect and enhance the quality of life by promoting sustainable growth, managing physical changes, and using resources wisely to preserve heritage and foster economic diversification. It emphasizes environmentally responsible development, educates residents about development policies, and ensures that local governance aligns with provincial policies. Additionally, the plan encourages development patterns that efficiently use resources and minimize financial impacts on local services.

The land use policies in the Official Plan focus on balancing development with environmental preservation and maintaining the area's low-density rural character. In the Resource Development area, the policies support a mix of both resource-based and non-resource-based developments. This area allows for rural and seasonal residential, tourism, and various resource management activities like forestry and mining. However, development is controlled to ensure it does not hinder potential future mining operations or adversely impact the environment.

The following table outlines the recorded population and private dwellings for Atikokan, based on 2021 Census data. The table indicates recent changes in both population and the number of private dwellings, implying that the Town's growth may not be meeting the Official Plan's initial projections.

Historical Figures	1996	2001	2006	2011	2016	2021
Population	4,043	3,632	3,293	2,787	2,753	2,642
Population Change	N/A	-10.2%	-9.3%	-15.4%	-1.2	-4.0%
Private Dwellings	N/A	1,621	1,535	1,494	1,477	1,464

Table 57 Historical Population and Private Dwelling Data

14.2 Regional Growth

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

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

The goal is to achieve a dependency ratio of 0.5. In 1996, every Census District was at or near the goal but by 2016, none were below and more than half had a ratio in excess of 0.6.

The Town of Atikokan is found in the Rainy River district, which is expected to reach a dependency ratio of 0.90. The population trends overall in Northwestern Ontario are in decline.

The following table, found in the 2019 Rainy River district report by the Northern Policy Institute, shows population projections in Northwestern Ontario for the years 2021 to 2041.

Year	Ages 0-19	Ages 20-64	Ages 65+	Total
2021	4,504	10,789	4,440	19,733
2026	4,272	9,769	5,090	19,131
2031	4,093	8,966	5,487	18,546
2036	3,924	8,457	5,580	17,961
2041	3,757	8,081	5,542	17,380

Table 58 Northwestern Ontario Population Projections

The most recent census data from 2021, shows a slight decrease in the population, reaching a total of 19,437, but is below the projected population from the study. A significant portion of population decrease is within the 20-to-64-year age group, while there is an increase in population for the age of 65 years and over; thus further increasing the dependency ratio.

14.3 Impact of Growth on Lifecycle Activities

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

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

15. Financial Strategy

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Town of Atikokan 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. Gas tax
 - 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 Town’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.

15.1 Annual Requirements & Capital Funding

15.1.1 Annual Requirements

The annual requirements represent the amount the Town should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Town must allocate approximately \$6.0 million annually to address capital requirements for the assets included in this AMP.

Total Average Annual Capital Requirements \$6,044,394

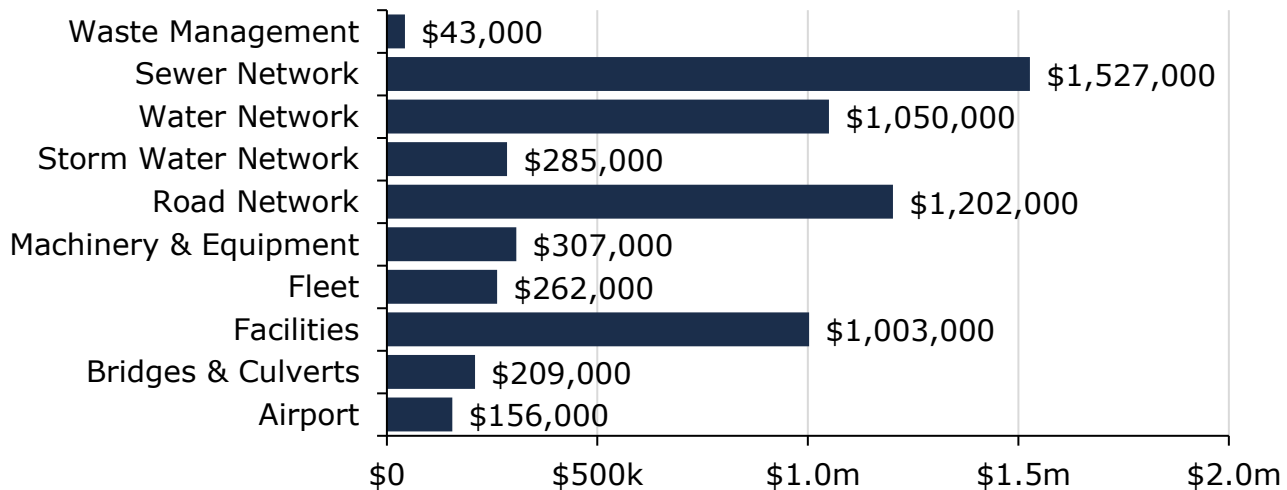


Figure 77 Annual Capital Funding Requirements by Asset Category

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

However, for the Road Network lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Town’s. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table compares two scenarios for the Road Network:

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

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	\$1,333,000	\$1,202,000	\$131,000

Table 59 Lifecycle Strategies Annual Savings

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of \$131,000 for the Road Network. This represents an overall reduction of the annual requirements by 10%. As the lifecycle strategy scenario represents the lowest cost option available to the Town, we have used these annual requirements in the development of the financial strategy.

15.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately \$3.4 million towards capital projects per year. Given the annual capital requirement of \$6.0 million, there is currently a funding gap of \$2.6 million annually.

Annual Requirements & Capital Funding Available

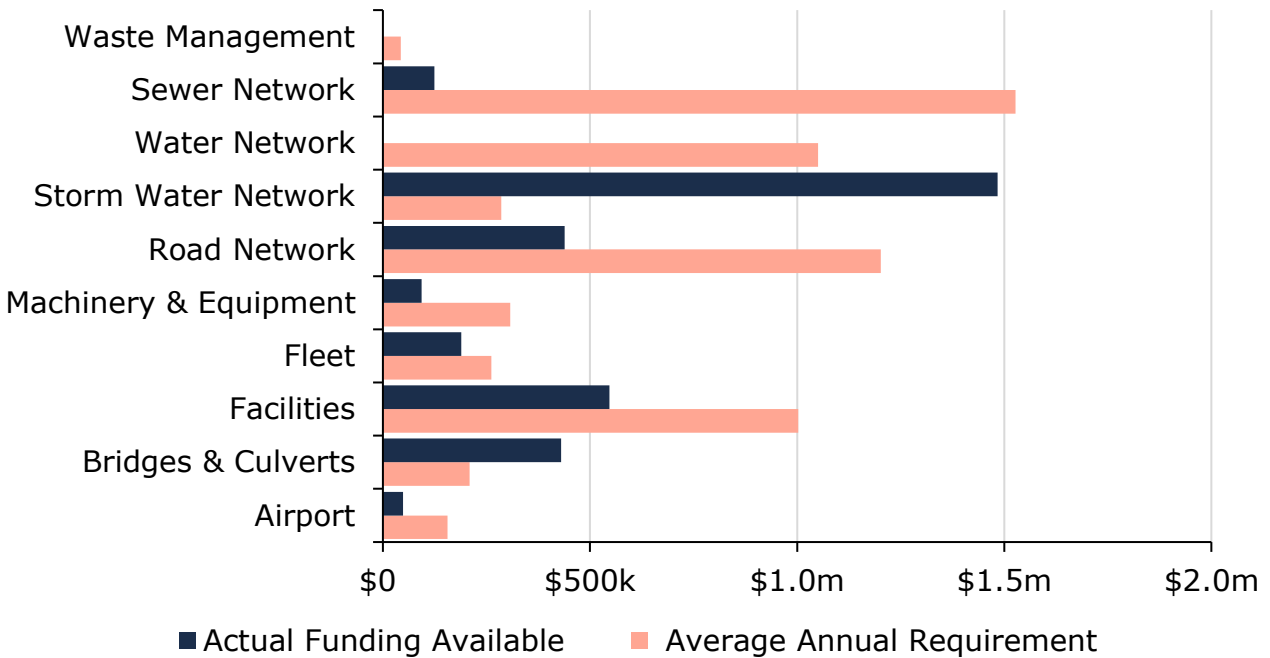


Figure 78 Annual Requirements vs. Capital Funding Available

15.2 Funding Objective

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

1. **Tax Funded Assets:** Airport, Bridges & Culverts, Facilities, Fleet, Machinery & Equipment, Stormwater Network
2. **Rate-Funded Assets:** Water Network, Sanitary Sewer Network, Waste Management

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

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

15.3 Financial Profile: Tax Funded Assets

15.3.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Taxes	CCBF	OCIF	Total Available	
Airport	156,000	48,000	0	0	48,000	107,000
Bridges & Culverts	209,000	430,000	0	0	430,000	-221,000
Facilities	1,003,000	547,000	0	0	547,000	456,000
Fleet	262,000	189,000	0	0	189,000	73,000
Machinery & Equipment	307,000	93,000	0	0	93,000	214,000
Road Network	1,202,000	158,000	280,000	0	438,000	764,000
Stormwater Network	285,000	1,484,000	0	0	1,484,000	-1,198,000
Total	3,424,000	2,950,000	280,000	0	3,320,000	194,000

Table 60 Annual Available Funding for Tax Funded Assets

The average annual investment requirement for the above categories is \$3.4 million. Annual revenue currently allocated to these assets for capital purposes is \$3.3 million leaving an annual deficit of \$194,000. Put differently, these infrastructure categories are currently funded at 94.3% of their long-term requirements.

15.3.2 Full Funding Requirements

In 2023, the Town of Atikokan had budgeted annual tax revenues of approximately \$8.954 million. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Airport	1.2%
Bridges & Culverts	-2.5%
Facilities	5.1%
Fleet	0.8%
Machinery & Equipment	2.4%
Road Network	8.5%
Stormwater Network	-13.4%
Total	2.2%

Table 61 Tax Increase Requirements for Full Funding

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

- a) Atikokan’s debt payments for these asset categories will be decreasing by \$422,000 over the next 5 years and by \$615,000 over the next 10 years.

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

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	193,948	193,948	193,948	193,948
Resulting Infrastructure Deficit:	193,948	193,948	193,948	193,948
Tax Increase Required	2.2%	2.2%	2.2%	2.2%
Annually:	0.5%	0.3%	0.2%	0.2%

Table 62 Tax Increase Options 5-20 Years

15.3.3 Financial Strategy Recommendations

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

- a) increasing tax revenues by 0.2% each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- b) allocating the current CCBF and OCIF revenue as outlined previously.
- c) reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- d) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment⁶.
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of \$970,000 for the Airport, \$26.3 million for Facilities, \$1.7 million for Fleet, \$2.0 million for Machinery & equipment, \$13.0 million for the Road Network, and \$3.6 million for the Storm Water Network.

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

⁶ The Town should take advantage of all available grant funding programs and transfers from other levels of government. While OCIF has historically been considered a sustainable source of funding, the program is currently undergoing review by the provincial government. Depending on the outcome of this review, there may be changes that impact its availability.

15.4 Financial Profile: Rate Funded Assets

15.4.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available			Annual Deficit	
		Rates	To Oper	OCIF		Total Available
Water Network	1,050,000	1,000,000	-1,000,000	0	0	1,050,000
Sanitary Sewer Network	1,527,000	624,000	-624,000	125,000	125,000	1,402,000
Waste Management	43,000	50,000	-50,000	0	0	43,000
Total	2,577,000	1,674,000	-1,674,000	125,000	125,000	2,496,000

Table 63 Annual Available Funding for Rate Funded Assets

The average annual investment requirement for the above categories is \$2.577 million. Annual revenue currently allocated to these assets for capital purposes is \$125,000 leaving an annual deficit of \$2.496 million. Put differently, these infrastructure categories are currently funded at 4.85% of their long-term requirements.

15.4.2 Full Funding Requirements

Averaging from 2021-2023, Atikokan had annual sanitary revenues of \$624,000, annual water revenues of \$1,000,000 and annual waste management revenues of \$50,000. As illustrated in the table below, without consideration of any other sources of revenue, full funding would require the following changes over time:

Asset Category	Rate Change Required for Full Funding
Water Network	105%
Sewer Network	225%
Waste Management	86%

Table 64 Rate Increase Requirements for Full Funding

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

Water Network				
	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	1,050,000	1,050,000	1,050,000	1,050,000
Rate Increase Required	105%	105%	105%	105%
Annually:	15.5%	7.5%	5.0%	3.7%

Table 65 Water Rate Increase Options 5-20 Years

Sanitary Sewer Network				
	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	1,402,000	1,402,000	1,402,000	1,402,000
Less: decrease in debt payments	-18,000	-231,000	-231,000	-231,000
Rate Increase Required	222%	188%	188%	188%
Annually:	26.4%	11.2%	7.3%	5.5%

Table 66 Sanitary Rate Increase Options 5-20 Years

Waste Management				
	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	43,000	43,000	43,000	43,000
Rate Increase Required	86%	86%	86%	86%
Annually:	13.3%	6.5%	4.3%	3.2%

Table 67 Waste Management Rate Increase Options 5-20 Years

15.4.3 Financial Strategy Recommendations

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

- a) increasing rate revenues by 3.7% for water services, 5.5% for sanitary sewer services and 3.2% for waste management each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- b) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. This periodic funding should not be incorporated into an AMP unless there are firm commitments in place.
2. We realize that raising rate revenues for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.
3. Any increase in rates required for operations would be in addition to the above recommendations.

Although this option achieves full funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of \$24.5 million for the Water Network and \$47.1 million for the Sanitary Sewer Network.

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

15.5 Use of Debt

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

- a) the ability to stabilize tax & user rates when dealing with variable and sometimes uncontrollable factors

- b) equitable distribution of the cost/benefits of infrastructure over its useful life
- c) a secure source of funding
- d) flexibility in cash flow management

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

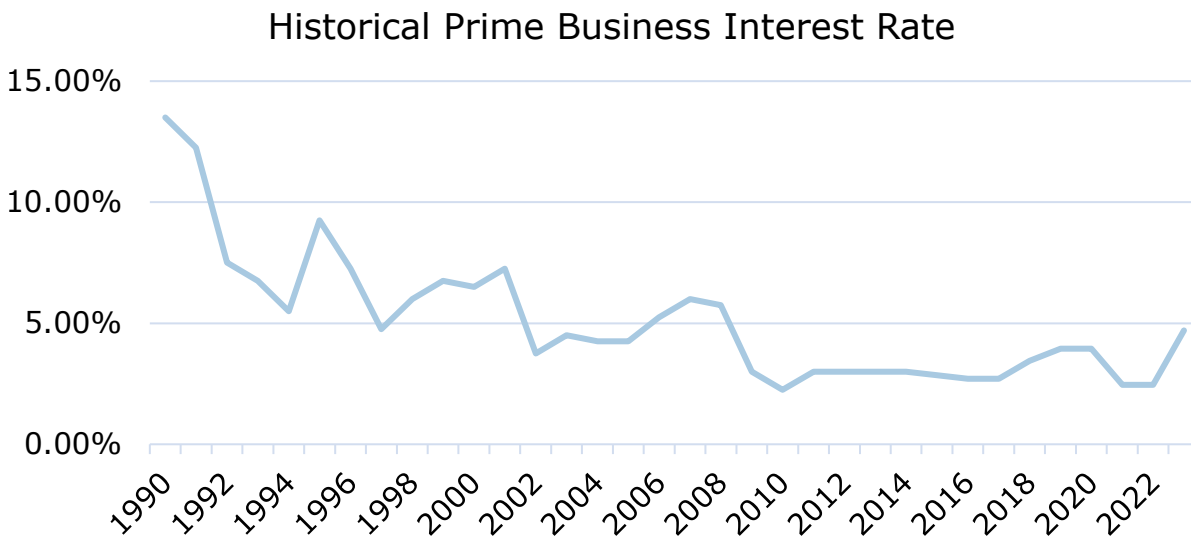


Figure 79 Historical Prime Rate

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

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a \$1 million project financed at 3.0%⁷ over 15 years would result in a 26% premium or \$260 thousand of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

⁷ Current municipal Infrastructure Ontario rates for 15-year money is 4.03%.

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
7.0%	22%	42%	65%	89%	115%	142%
6.5%	20%	39%	60%	82%	105%	130%
6.0%	19%	36%	54%	74%	96%	118%
5.5%	17%	33%	49%	67%	86%	106%
5.0%	15%	30%	45%	60%	77%	95%
4.5%	14%	26%	40%	54%	69%	84%
4.0%	12%	23%	35%	47%	60%	73%
3.5%	11%	20%	30%	41%	52%	63%
3.0%	9%	17%	26%	34%	44%	53%
2.5%	8%	14%	21%	28%	36%	43%
2.0%	6%	11%	17%	22%	28%	34%
1.5%	5%	8%	12%	16%	21%	25%
1.0%	3%	6%	8%	11%	14%	16%
0.5%	2%	3%	4%	5%	7%	8%
0.0%	0%	0%	0%	0%	0%	0%

Table 68 Interest Premiums Paid

The following tables outline how Atikokan has historically used debt for investing in the asset categories as listed. There is currently \$4,397,000 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of \$845,000, well within its provincially prescribed maximum of \$1,546,000.

Asset Category	Current Debt Outstanding	Use of Debt in the Last Five Years				
		2018	2019	2020	2021	2022
Airport	0	0	0	0	0	0
Bridges & Culverts	0	0	0	0	0	0
Facilities	1,492,373	2,194,667	2,019,093	1,843,520	1,667,947	1,492,373
Fleet	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0
Road Network	1,104,893	2,403,544	2,096,263	1,777,675	1,447,362	1,104,894
Stormwater Network	0	0	0	0	0	0
Total Tax Funded	2,597,266	4,598,211	4,115,357	3,621,195	3,115,309	2,597,267
Water Network	0	0	0	0	0	0
Sanitary Sewer Network	1,800,000	0	0	0	0	1,800,000
Waste Management	0	0	0	0	0	0
Total Rate Funded	1,800,000	0	0	0	0	1,800,000
Total	4,397,266	4,598,211	4,115,357	3,621,195	3,115,309	4,397,262

Table 69 Atikokan Use of Debt 2018-2022

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2023	2024	2025	2026	2027	2028	2033
Airport	0	0	0	0	0	0	0
Bridges & Culverts	0	0	0	0	0	0	0
Facilities	219,430	214,004	208,702	203,399	198,163	192,795	0
Fleet	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0
Road Network	395,731	395,731	395,731	0	0	0	0
Stormwater Network	0	0	0	0	0	0	0
Total Tax Funded	615,161	609,735	604,433	203,399	198,163	192,795	0
Water Network	0	0	0	0	0	0	0
Sanitary Sewer Network	231,332	227,826	224,172	220,592	217,012	213,467	0
Waste Management	231,332	227,826	224,172	220,592	217,012	213,467	0
Total Rate Funded	38,890	77,780	77,780	77,780	77,780	77,780	77,780
Total	846,493	837,561	828,605	423,991	415,175	406,262	0

Table 70 Atikokan Principal and Interest Payments

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

15.6 Use of Reserves

15.6.1 Available Reserves

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

- a) the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
- b) financing one-time or short-term investments

- c) accumulating the funding for significant future infrastructure investments
- d) managing the use of debt
- e) normalizing infrastructure funding requirement

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

Asset Category	Balance at December 31, 2023
Airport	34,513
Bridges & Culverts	178,194
Facilities	1,636,673
Fleet	152,853
Machinery & Equipment	20,683
Road Network	2,181,846
Stormwater Network	71,483
Total Tax Funded:	4,276,246
Water Network	151,564
Sanitary Sewer Network	1,063,033
Waste Management	4,855
Total Rate Funded:	1,219,452

Table 71 Atikokan Reserve Balances

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

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

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

15.6.2 Recommendation

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

16. Recommendations & Key Considerations

16.1 Financial Strategies

1. Review the feasibility of adopting a full-funding scenario to achieve 100% of average annual funding requirement for the asset categories analyzed. This includes:
 - a. Increasing taxes by 0.2% per year over a period of 20 years;
 - b. Increasing water rates by 3.7% per year over a period of 20 years;
 - c. Increasing sanitary rates by 5.5% per year over a period of 20 years; and
 - d. Increasing waste management rates by 3.2% per year over a period of 20 years.
2. Continued allocation of OCIF and CCBF funding as previously outlined.
3. Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
4. Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
5. Continue to apply for project specific grant funding to supplement sustainable funding sources.

16.2 Asset Data

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

of like-for-like assets can be challenging. Ideally, several recent projects over multiple years should be used. Staff judgement and historical data can help attenuate extreme and temporary fluctuations in cost estimates and keep them realistic.

3. Like replacement costs, an asset's established serviceable life can have dramatic impacts on all projections and analyses, including condition, long-range forecasting, and financial recommendations. Periodically reviewing and updating these values to better reflect in-field performance and staff judgement is recommended.

16.3 Risk & Levels of Service

1. Risk models and matrices can play an important role in identifying high-value assets, and developing an action plan which may include repair, rehabilitation, replacement, or further evaluation through condition assessments. As a result, project selection and the development of multi-year capital plans can become more strategic and objective. Initial models have been built into Citywide for all asset groups. These models reflect current data, which was limited. As the data evolves and new attribute information is obtained, these models should also be refined and updated.
2. Available data on current performance should be centralized and tracked to support any calibration of service levels in accordance with O. Reg. 588's 2025 requirements on proposed levels of service.
3. Staff should monitor evolving local, regional, and environmental trends to identify factors that may shape the demand and delivery of infrastructure programs. These can include population growth, and the nature of population growth; climate change and extreme weather events; and economic conditions and the local tax base. This data can also be used to review service level targets.

Appendices

Appendix A – 10-Year Capital Requirements

Appendix B – Level of Service Maps

Appendix C – Risk Rating Criteria

Appendix A – 10-Year Capital Requirements

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

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

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

Road Network

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Asphalt Roads	\$5.5m	\$245k	\$0	\$80k	\$294k	\$2.7m	\$2.1m	\$1.3m	\$5.2m	\$1.9m	\$816k
Curbs	\$4.8m	\$355k	\$0	\$0	\$0	\$0	\$296k	\$0	\$0	\$0	\$0
Sidewalks	\$2.1m	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Streetlights	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Surface Treated Roads	\$481k	\$0	\$0	\$54k	\$0	\$0	\$44k	\$0	\$0	\$0	\$0
Total	\$13.0m	\$600k	\$0	\$134k	\$294k	\$2.7m	\$2.5m	\$1.3m	\$5.2m	\$1.9m	\$816k

Table 72 System Generated 10-Year Capital Replacement Forecast: Road Network

Bridges & Culverts

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Bridges	\$0	\$0	\$0	\$0	\$0	\$2.9m	\$0	\$0	\$0	\$0	\$0
Culverts	\$0	\$1.5m	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Dams	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pedestrian Bridges	\$0	\$0	\$0	\$0	\$0	\$90k	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$1.5m	\$0	\$0	\$0	\$3.0m	\$0	\$0	\$0	\$0	\$0

Table 73 System Generated 10-Year Capital Replacement Forecast: Bridges & Culverts

Water Network

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Hydrants	\$1.5m	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Mains	\$22.9m	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Plant	\$0	\$0	\$0	\$0	\$16.3m	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$24.5m	\$0	\$0	\$0	\$16.3m	\$0	\$0	\$0	\$0	\$0	\$0

Table 74 System Generated 10-Year Capital Replacement Forecast: Water Network

Sanitary Sewer Network

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Machinery & Equipment	\$242k	\$0	\$0	\$0	\$0	\$0	\$16k	\$0	\$0	\$0	\$0
Pumping Stations	\$5.8m	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sewer Mains	\$5.7m	\$0	\$175k	\$0	\$110k	\$0	\$0	\$0	\$0	\$0	\$73k
Sewer Manholes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sewer Treatment Plant	\$35.3m	\$0	\$0	\$0	\$0	\$0	\$1.3m	\$0	\$0	\$0	\$0
Total	\$47.1m	\$0	\$175k	\$0	\$110k	\$0	\$1.3m	\$0	\$0	\$0	\$73k

Table 75 System Generated 10-Year Capital Replacement Forecast: Sanitary Sewer Network

Stormwater Network

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Catch Bains	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Manholes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storm Mains	\$3.6m	\$0	\$127k	\$0	\$54k	\$0	\$0	\$0	\$0	\$0	\$55k
Total	\$3.6m	\$0	\$127k	\$0	\$54k	\$0	\$0	\$0	\$0	\$0	\$55k

Table 76 System Generated 10-Year Capital Replacement Forecast: Stormwater Network

Facilities

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Educational	\$1.9m	\$0	\$0	\$0	\$0	\$236k	\$0	\$8k	\$0	\$0	\$0
Government	\$3.6m	\$0	\$0	\$0	\$0	\$0	\$0	\$218k	\$0	\$0	\$0
Health	\$1.3m	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Recreation	\$18.6m	\$0	\$0	\$0	\$73k	\$0	\$0	\$0	\$0	\$75k	\$0
Storage	\$872k	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$52k	\$0
Total	\$26.3m	\$0	\$0	\$0	\$73k	\$236k	\$0	\$227k	\$0	\$126k	\$0

Table 77 System Generated 10-Year Capital Replacement Forecast: Facilities

Airport

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Airport Buildings	\$473k	\$0	\$0	\$15k	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Airport Fuel System	\$301k	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Airport Roads	\$195k	\$0	\$0	\$0	\$0	\$0	\$0	\$1.8m	\$0	\$0	\$0
Total	\$970k	\$0	\$0	\$15k	\$0	\$0	\$0	\$1.8m	\$0	\$0	\$0

Table 78 System Generated 10-Year Capital Replacement Forecast: Airport

Fleet

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Admin	\$39k	\$0	\$0	\$0	\$0	\$0	\$0	\$40k	\$0	\$0	\$0
Fire	\$1.0m	\$0	\$0	\$0	\$49k	\$603k	\$0	\$0	\$0	\$0	\$0
Public Works	\$440k	\$40k	\$40k	\$138k	\$222k	\$124k	\$29k	\$0	\$60k	\$0	\$0
Recreation & Social Services	\$184k	\$0	\$0	\$0	\$0	\$96k	\$0	\$0	\$133k	\$0	\$0
Total	\$1.7m	\$40k	\$40k	\$138k	\$271k	\$824k	\$29k	\$40k	\$192k	\$0	\$0

Table 79 System Generated 10-Year Capital Replacement Forecast: Fleet

Machinery & Equipment

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Fire Equipment	\$120k	\$0	\$14k	\$0	\$0	\$52k	\$67k	\$108k	\$30k	\$0	\$0
General I.T	\$80k	\$15k	\$0	\$0	\$0	\$0	\$96k	\$0	\$0	\$0	\$0
Public Works Equipment	\$894k	\$0	\$0	\$403k	\$192k	\$175k	\$13k	\$408k	\$0	\$0	\$0
Recreation Equipment	\$915k	\$27k	\$0	\$26k	\$0	\$9k	\$14k	\$44k	\$0	\$0	\$0
Total	\$2.0m	\$43k	\$14k	\$430k	\$192k	\$236k	\$189k	\$561k	\$30k	\$0	\$0

Table 80 System Generated 10-Year Capital Replacement Forecast: Machinery & Equipment

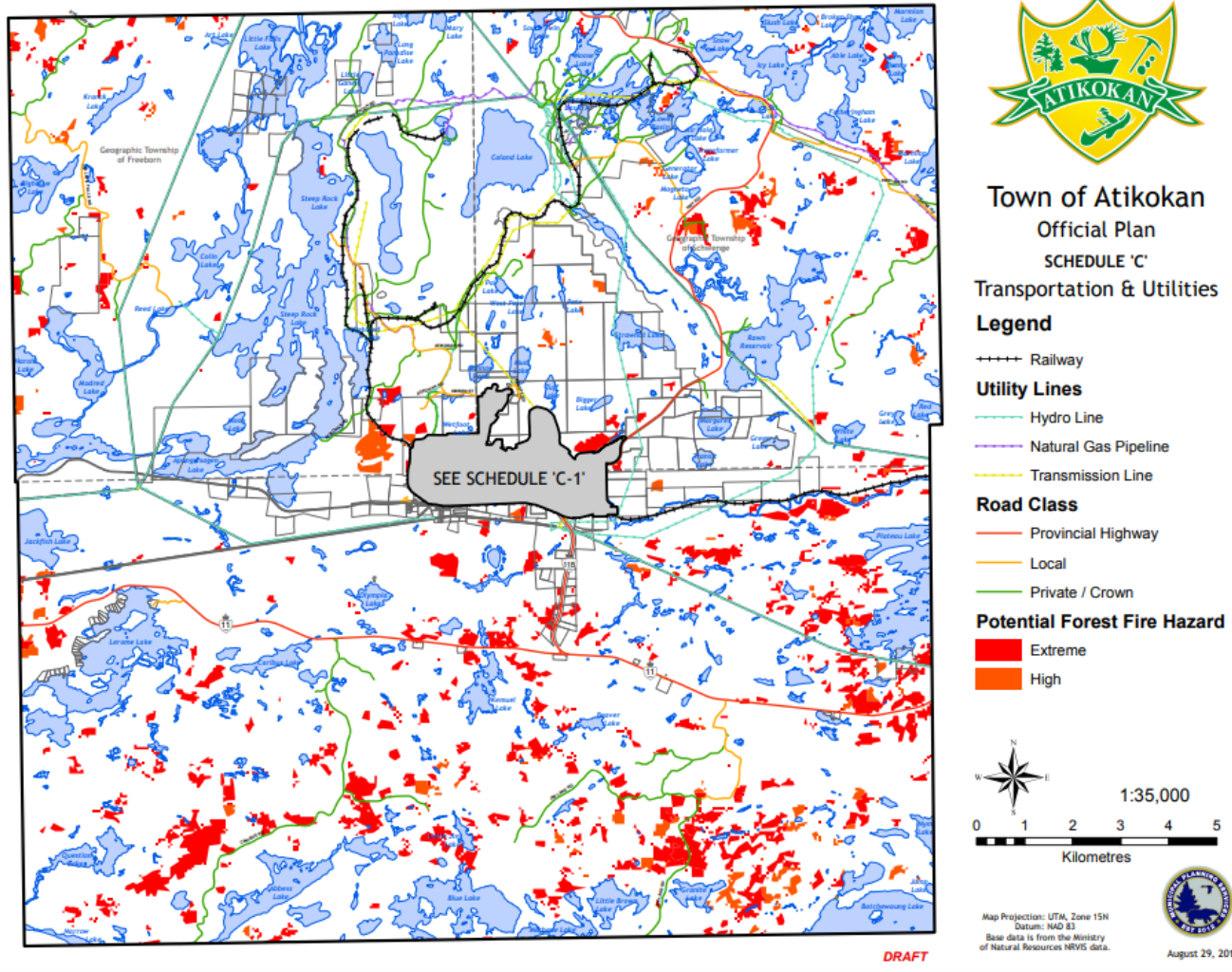
Waste Management

Segment	Back-log	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Pipeline Road Landfill	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9k	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0	\$0	\$0	\$0	\$174k	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$174k	\$9k	\$0	\$0	\$0

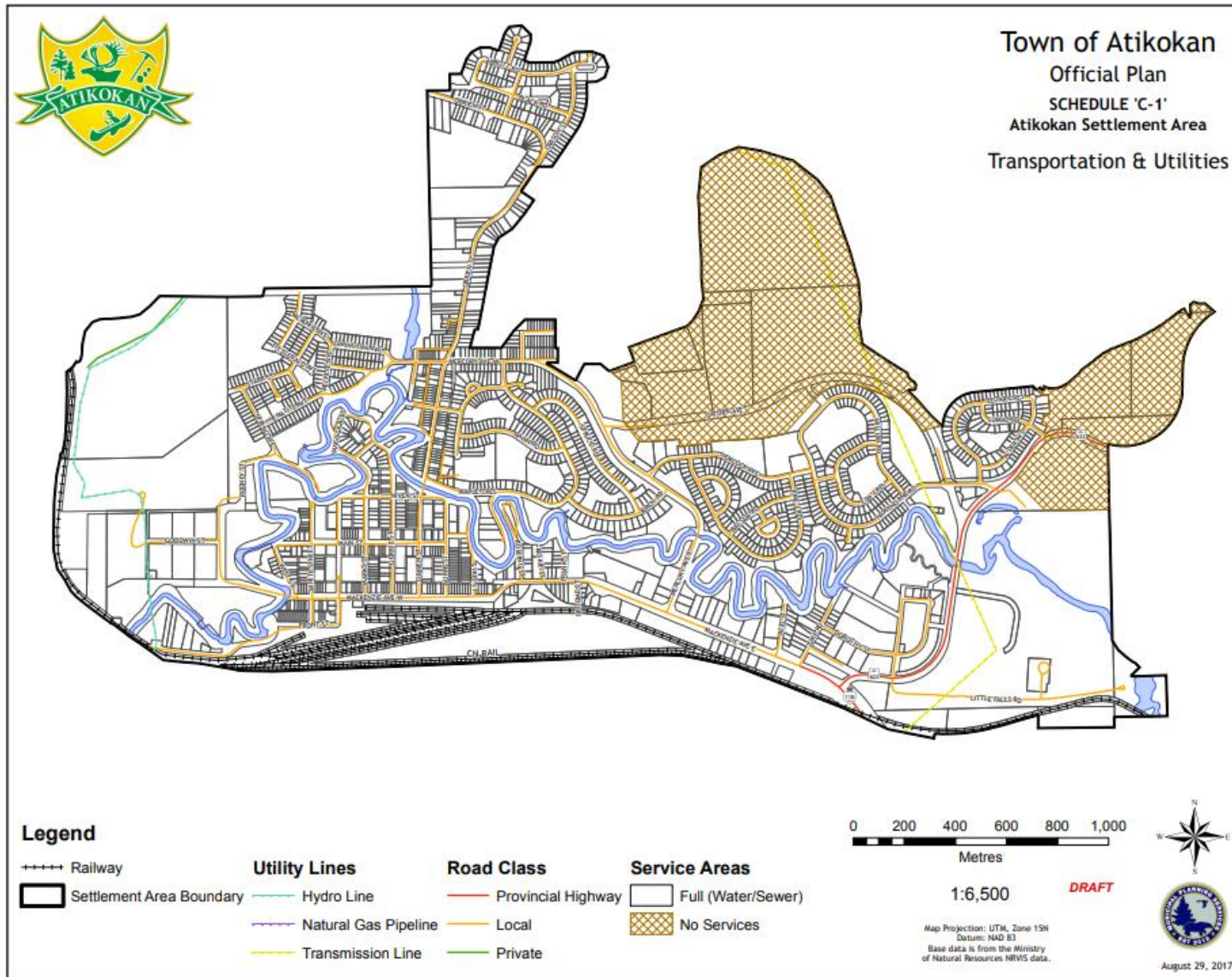
Table 81 System Generated 10-Year Capital Replacement Forecast: Waste Management

Appendix C – Level of Service Maps & Photos

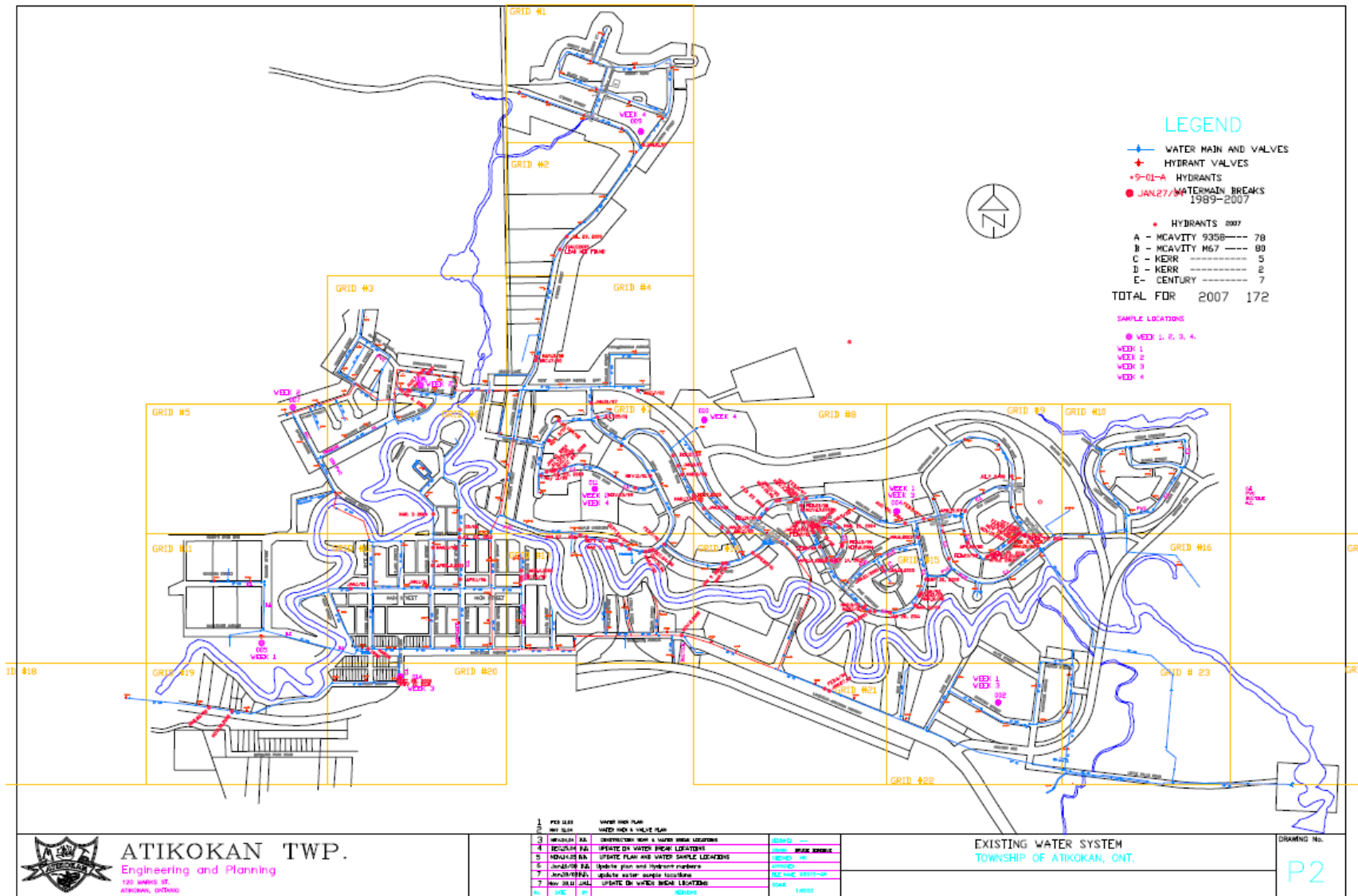
Road Network Map – Town of Atikokan



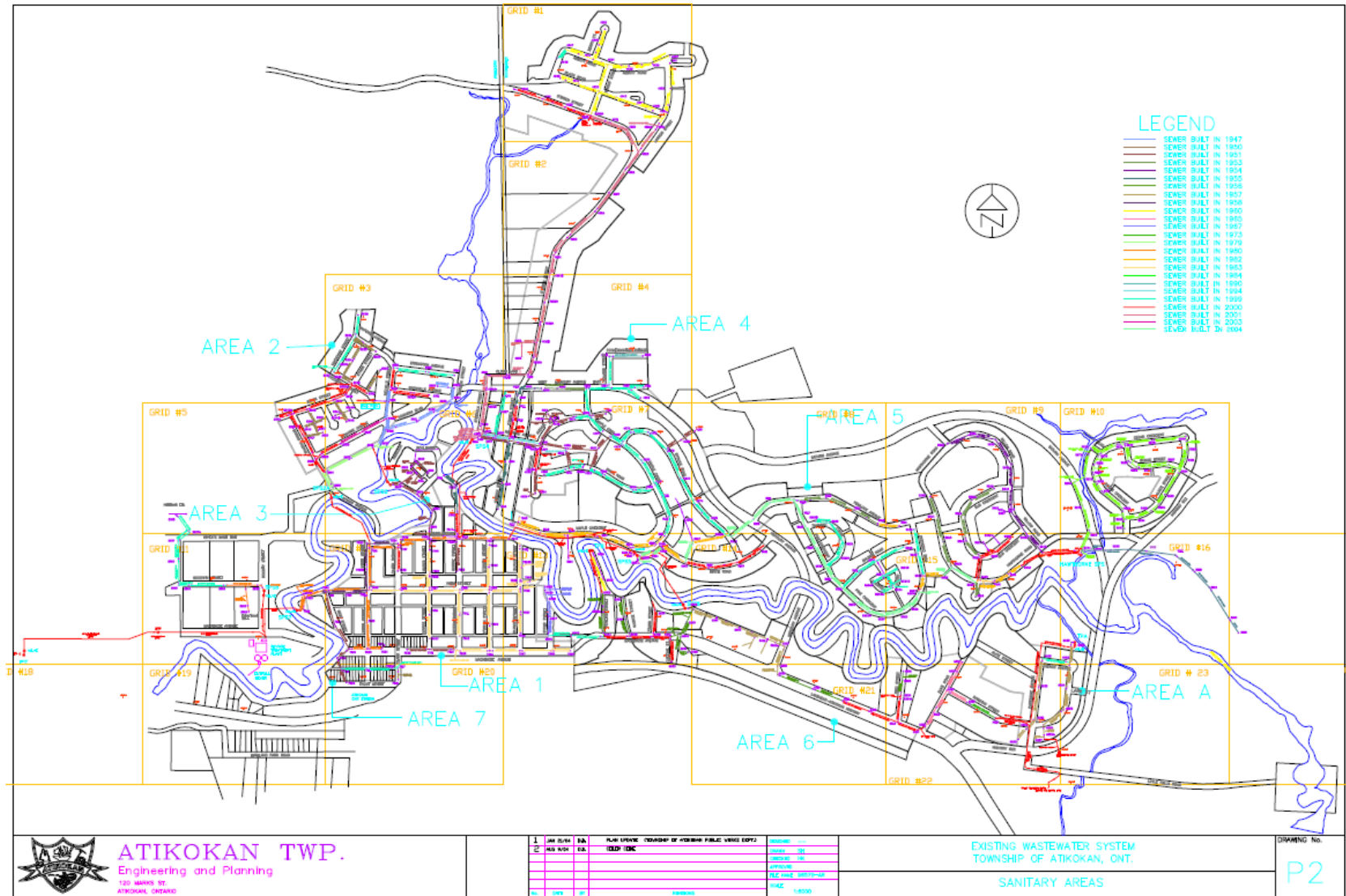
Road Network Map – Atikokan Settlement Areas



Town of Atikokan Water Main Map



Town of Atikokan Sewer Main Map



2021 Bridge Report – Condition Images



Figure 80: Don Park Foot Bridge - Fair Condition (40)



Figure 81: Little Falls Suspension Bridge - Fair Condition (40)



Figure 82: Mackenzie Avenue Bridge - Very Poor Condition (10)



Figure 83: Main Street Foot Bridge - Poor Condition (20)

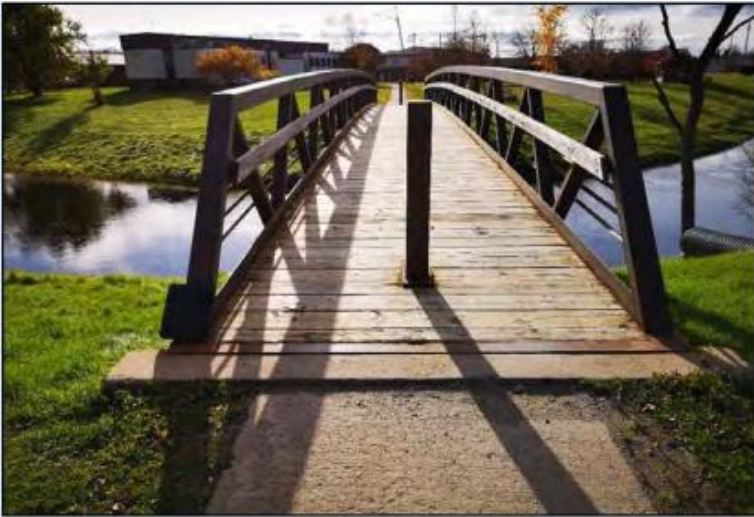


Figure 84: Maple Crescent Foot Bridge - Poor Condition (20)



Figure 85: Mercury Road Culvert - Very Poor Condition (10)



Figure 86: O'Brien Street Bridge - Good Condition (80)



Figure 87: Reid Street Foot Bridge - Fair Condition (40)



Figure 88: White Street Bridge - Fair Condition (40)

Appendix D – Risk Rating Criteria

Probability of Failure

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
Road Network (Roads)	Condition	80	85-100	1
			70-84	2
			55-69	3
			40-54	4
			0-39	5
	Service Life Remaining (Years)	20	15+	1
			10-14	2
			5-9	3
			3-4	4
			0-2	5
Bridges & Culverts	Condition	80	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
	Service Life	20	80+	1
			60-79	2

	Remaining (Years)		40-59	3
			10-39	4
			0-9	5
			80-100	1
			60-79	2
Airport Facilities	Condition	100	40-59	3
Machinery & Equipment			20-39	4
Fleet			0-19	5
Waste Management			80-100	1
			60-79	2
	Condition	75	40-59	3
			20-39	4
			0-19	5
			P.E	1
			PVC	1
Sanitary Sewer Network (Mains)			Cast Iron	3
			Class IV	3
	Pipe Material	15	Concrete	3
			Ductile Iron	3
			AC	4
			Asbestos	4
			Concrete/Transite	4

		Transite	4
		80+	1
Service Life Remaining (Years)	10	60-79	2
		30-59	3
		15-29	4
		0-14	5
		80-100	1
Condition	50	60-79	2
		40-59	3
		20-39	4
		0-19	5
		P.E	1
Water Network (Mains)	40	PVC	1
		Ductile Iron	2
		AC	4
		Asbestos	4
		Cast Iron	4
		Concrete/Transite	4
		Concrete	4
		Transite	4
		10	80+

			50-79	2
			30-49	3
			10-29	4
			0-9	5
			80-100	1
			60-79	2
	Condition	70	40-59	3
			20-39	4
			0-19	5
			P.E	1
			PVC	1
Stormwater Network (Mains)			Ductile Iron	2
			AC	4
	Material	30	Asbestos	4
			Cast Iron	4
			Class IV	4
			Concrete	4
			Concrete/Transite	4
			Transite	4

Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score					
Road Network (Roads)	Economic (75%)	Replacement Cost (100%)	\$0-\$40,000	1					
			\$41,000-\$150,000	2					
			\$150,001-\$400,000	3					
			\$400,001-\$600,000	4					
			\$600,001-\$800,000	5					
	Operational (30%)	Repair Priority (60%)		0-5	1				
				6-10	2				
				11-15	3				
				16-25	4				
				26-40	5				
		Road Class (40%)			Local (Class 5 & 6)	2			
					Collector (Class 3 & 4)	3			
					Aterial (Class 1 & 2)	4			
					Economic (80%)	Replacement Cost (100%)		\$0-\$200,000	1
								\$200,001-\$400,000	2
\$400,001-\$1,000,000	3								
\$1,000,001-\$2,000,000	4								
\$2,000,001-\$3,000,000	5								
Bridges & Culverts (Foot Bridges)	Detour Length (60%)		1	1					
			2	2					
			3	3					

	Social (20%)		4	4
			5	5
		Special Routes (40%)	Bicycle	3
			School	4
			Truck	5
			\$0-\$50,000	1
		Replacement Cost (90%)	\$50,000-\$150,000	2
			\$150,000-\$250,000	3
	Economic (80%)		\$250,000-\$500,000	4
			\$500,000+	5
		Road Class (10%)	Local (Class 5 & 6)	2
			Collector (Class 3 & 4)	4
			Arterial (Class 1 & 2)	5
			0-100	1
		Average Annual Daily Traffic (70%)	101-500	2
			501-1,000	3
			1,001-3,000	4
			3,001-5,000	5
Structural Bridges & Culverts			1	1
			2	2
		Detour Length (20%)	3	3
	Social (20%)		4	4
			5	5
		Special Routes (10%)	Bicycle	3
			School	4

			Truck	5
			\$0-\$15,000	1
Airport	Economic (100%)	Replacement Cost (100%)	\$15,001-\$50,000	2
			\$50,001-\$100,000	3
			\$100,001-\$500,000	4
			\$500,001+	5
Facilities	Economic (60%)	Replacement Cost (100%)	\$0-\$20,000	1
			\$20,001-\$50,000	2
			\$50,001-\$100,000	3
			\$100,001-\$200,000	4
			\$200,001+	5
	Operational (40%)	Department (100%)	Animal Control, Museum, Tourist Bureau	1
			Library	2
			Recreation, Seniors	3
			Administration, Public Works	4
			Clinic, Fire	5
Fleet	Economic (60%)	Replacement Cost (100%)	\$0-\$25,000	1
			\$25,001-\$50,000	2
			\$50,001-\$100,000	3
			\$100,001-\$125,000	4
			\$125,001+	5
	Operational (40%)	Department (100%)	Administration	2
			Recreation, Seniors	3
			Animal Control, Engineering	4
			Fire, Public Works	5

Machinery & Equipment	Economic (60%)	Replacement Cost (100%)	\$0-\$5,000	1
			\$5,001-\$10,000	2
			\$10,001-\$15,000	3
			\$15,001-\$20,000	4
			\$20,001+	5
	Operational (40%)	Department (100%)	Library	1
			Recreation	3
			Administration, Engineering	4
			Emergency Measures, Fire, Public Works	5
			Waste Management	Economic (100%)
\$10,001-\$50,000	2			
\$50,001-\$100,000	3			
\$100,001-\$500,000	4			
\$500,001+	5			