

Asset Management Plan

Township of Jocelyn

2024

This Asset Management Program was prepared by:



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

Key Statistics

Replacement cost of
asset portfolio

\$11.6 million

Replacement cost of
infrastructure per
household

\$32,255 (2021)

Percentage of assets in fair
or better condition

66%

Percentage of assets with
assessed condition data

97%

Annual capital
infrastructure deficit

\$373,000

Recommended timeframe
for eliminating annual
infrastructure deficit

20 Years

Target reinvestment
rate

3.2%

Actual reinvestment
rate

2.9%

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Executive Summary

Municipal infrastructure provides the foundation for the economic, social, and environmental health and growth of a community through the delivery of critical services. The goal of asset management is to deliver an adequate level of service in the most cost-effective manner. This involves the development and implementation of asset management strategies and long-term financial planning.

Scope

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

This AMP include the following asset categories:

Asset Category

 Road Network	 Bridges
 Vehicles	 Buildings
 Land Improvements	 Machinery & Equipment

With the development of this AMP the Township has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2022. There are additional requirements concerning proposed levels of service and growth that must be met by July 1, 2024 and 2025.

Findings

The overall replacement cost of the asset categories included in this AMP totals \$11.6 million. 66% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 97% of assets. For the remaining 3% 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 Township's average annual capital requirement totals \$373,000. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$338,000 towards capital projects or reserves per year. As a result, there is currently an annual funding gap of \$35,000.

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

Annual Deficit
per Capita



Recommendations

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



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

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

1 Introduction & Context

Key Insights

- The Township of Jocelyn is a small municipality in Northern Ontario and has identified the road network as an infrastructure priority
- 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 Township's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management
- An asset management plan is a living document that should be updated regularly for long-term planning
- Ontario Regulation 588/17 outlines several key milestones and requirements for asset management plans in Ontario between July 1, 2024 and 2025

1.1 Jocelyn Community Profile

Census Characteristic	Township of Jocelyn	Ontario
Population 2021	314	14,223,942
Population Change 2016-2021	0.3%	5.8%
Total Private Dwellings	360	5,929,250
Population Density	2.4/km ²	15.9/km ²
Land Area	130.43 km ²	892,411.76 km ²

The Township of Jocelyn is a single tier municipality found on the southwestern part of St. Joseph Island. St. Joseph Island is located in northwestern Ontario at the most northern part of Lake Huron. The Island shares a border with the United States and is less than 70 kilometers from Sault Ste. Marie.

St. Joseph Island was first settled by Europeans in the 1600s when it became a strategic mid-way point for missionaries and fur traders between Quebec and Lake Superior. By 1740, the island was named Saint Joseph Island after the church missionaries built.

The Township is recognized for recreational programs which include hiking trails, disc golf, as well as cross-country ski trails and toboggan hills during the winter season. The majority of municipal programs are maintained by a small team of staff, contract workers, and several volunteers within the Township.

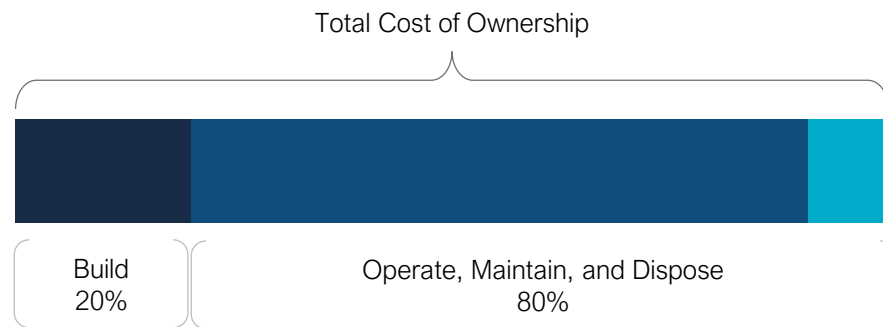
The Township experiences a surge in demand for services and amenities during the summer months, driven by the seasonal residents and tourists who reside in many cottages located on seasonal roads. Public expectations are rising as more urban folks are moving into their cottages full-time. The Township has experienced fluctuations in population over the passed 10 years and has an aging population significantly above the provincial average. The Township continues to ensure the planning and services are accessible and attractive for elders.

The Township generates a total revenue of \$767,000 from taxes and has an annual capital budget of \$338,000 as of 2022. The Township’s infrastructure priorities include improvement of the road network. The Township often depends on grants for capital projects, particularly for the transportation network.

1.2 An Overview of Asset Management

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

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



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

1.2.1 Asset Management Policy

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

1.2.2 Asset Management Strategy

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

1.2.3 Asset Management Plan

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

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

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

1.3 Key Concepts in Asset Management

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

1.3.1 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.

Lifecycle Activity	Description	Example (Roads)	Cost
Maintenance	Activities that prevent defects or deteriorations from occurring	Crack Seal	\$
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	Mill & Re-surface	\$\$
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	Full Reconstruction	\$\$\$

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.

The Township's approach to lifecycle management is described within each asset category outlined in this AMP. Developing and implementing a proactive lifecycle strategy will help staff 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.

1.3.2 Risk Management Strategies

Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community than that of others. For example, a road with a high volume of traffic that provides access to critical services poses a higher risk than a low volume rural road. These high-value assets should receive funding before others.

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused.

This AMP includes a high-level 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.

1.3.3 Levels of Service

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

These measures include a combination of those that have been outlined in O. Reg. 588/17 in addition to performance measures identified by the Township as worth measuring and evaluating. The Township measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (roads, Bridges, water, wastewater, stormwater) the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For

non-core asset categories, the Township has determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

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

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

Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community. Once current levels of service have been measured, the Township plans to establish proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

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

1.4 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.

1.4.1 Jocelyn Climate Profile

The Township of Jocelyn is located in Northern Ontario north of Lake Huron. The Township 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 Township of Jocelyn may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1971 and 2000 the annual average temperature was 5.1 °C

- The annual average temperatures are projected to increase by 2.7 °C by the year 2050 and over 6.6 °C by the end of the century.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, Jocelyn is projected to experience an 12% increase in precipitation by the year 2050 and a 15% 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 Lakes winds.

1.4.2 Lake Huron

The Great Lakes are one of the largest sources of fresh water on earth, containing 21 percent of the world's surface freshwater. There are 35 million people living in the Great Lakes watershed and Lake Huron is the second largest of the Great Lakes. The area of Lake Huron Watershed is approximately 131,100 km². The physical impacts of climate change are most noticeable from: flooding, extreme weather events such as windstorms and tornados, and/or rising water levels eroding shorelines and natural spaces. Erosion and flooding pose a threat to the surrounding built infrastructure such as park assets, bridges, and roads. Communities located in the Great Lakes region may experience more severe windstorms or tornados as a result of climate change, causing damage to both the natural and built environment.

Public health and safety depend on the stability and predictability of the ecosystem in the Great Lakes watershed. The quality of water is threatened by anthropogenic climate change as a result of blue-green algae blooms, soil erosion, and agricultural, stormwater, and wastewater runoff. These phenomena put undue stress on regional water filtering and treatment systems. The safety of the public is threatened by the physical impacts of flooding such as flooding and erosion. In some cases, homeowners located near the lakeshore are already at risk of losing their homes.

1.4.3 Integration 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. The Township should consider developing asset management strategies that incorporate climate change mitigation and adaptation considerations.

1.5 Ontario Regulation 588/17

As part of the *Infrastructure for Jobs and Prosperity Act, 2015*, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17). Along with creating better performing organizations, 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.

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

2019

Strategic Asset Management Policy

2024

Asset Management Plan for Core and Non-Core Assets (same components as 2022) and Asset Management Policy Update

2022

Asset Management Plan for Core Assets with the following components:

1. Current levels of service
2. Inventory analysis
3. Lifecycle activities to sustain LOS
4. Cost of lifecycle activities
5. Population and employment forecasts
6. Discussion of growth impacts

2025

Asset Management Plan for All Assets with the following additional components:

1. Proposed levels of service for next 10 years
2. Updated inventory analysis
3. Lifecycle management strategy
4. Financial strategy and addressing shortfalls
5. Discussion of how growth assumptions impacted lifecycle and financial

1.5.1 O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2022. Next to each requirement a page or section reference is included in addition to any necessary commentary.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1 – 9.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1 – 9.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.2 – 9.2	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.2 – 9.2	Complete
Description of municipality’s approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.2.1 – 9.2.1	Complete for Core Assets Only
Current levels of service in each category	S.5(2), 1(i-ii)	4.5.1 - 9.5.1	Complete for Core Assets Only
Current performance measures in each category	S.5(2), 2	4.5.2 - 9.5.2	Complete for Core Assets Only
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.3 – 9.3	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix B	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	10	Complete

2 Scope and Methodology

Key Insights

- This asset management plan includes 6 asset categories and are fully tax-funded
- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation
- 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

2.1 Asset Categories Included in this AMP

This asset management plan for the Township of Jocelyn is produced in compliance with Ontario Regulation 588/17. The July 2024 deadline under the regulation—the second of three AMPs—requires analysis of core assets (roads, Bridges) and non-core assets (Buildings, vehicles, machinery and equipment, and land improvements).

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

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

2.2 Deriving Replacement Costs

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

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

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost inflation is typically used in the absence of reliable replacement cost data. It is a reliable method for recently

purchased and/or constructed assets where the total cost is reflective of the actual costs that the Township incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.3 Estimated Useful Life and Service Life Remaining

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

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

$$\text{Service Life Remaining (SLR)} = \text{In Service Date} + \text{Estimated Useful Life (EUL)} - \text{Current Year}$$

2.4 Reinvestment Rate

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

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

$$\text{Target Reinvestment Rate} = \frac{\text{Annual Capital Requirement}}{\text{Total Replacement Cost}}$$

$$\text{Actual Reinvestment Rate} = \frac{\text{Annual Capital Funding}}{\text{Total Replacement Cost}}$$

2.5 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 Township’s asset portfolio. The table below outlines the condition rating system used in this AMP to determine asset condition. This rating system is aligned with the Canadian Core Public Infrastructure Survey which is used to develop the Canadian Infrastructure Report Card. When assessed condition data is not available, service life remaining is used to approximate asset condition.

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

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition. Appendix E includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

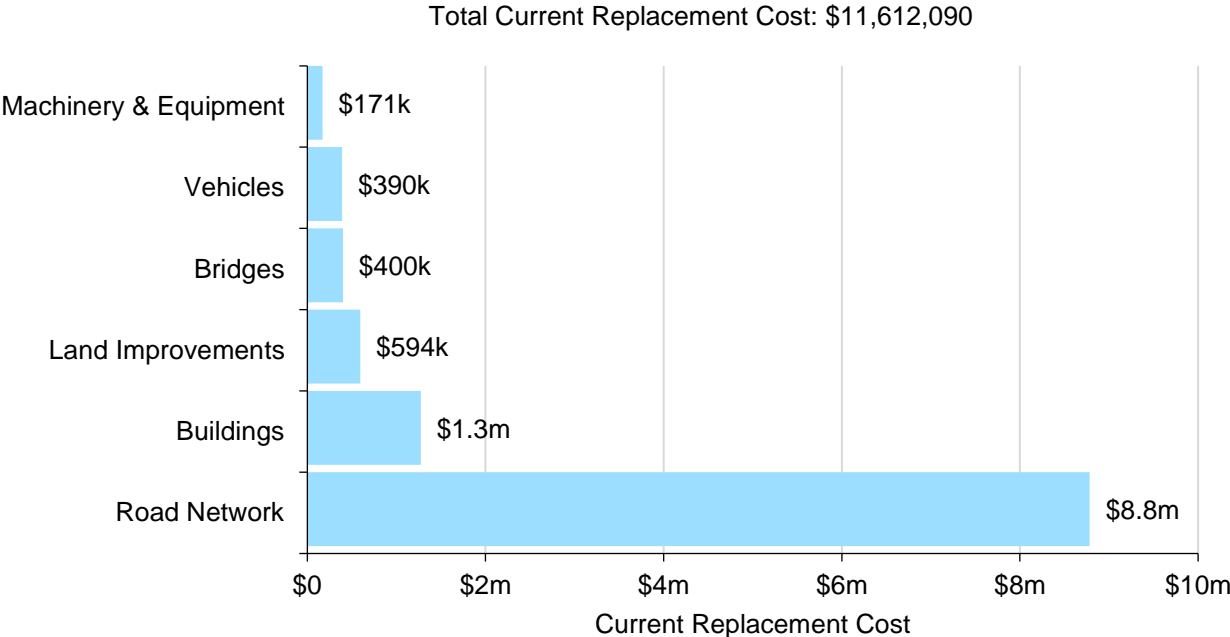
3 Portfolio Overview

Key Insights

- The total replacement cost of the Township's asset portfolio is \$11.6 million
- The Township's target re-investment rate is 3.2%, and the actual re-investment rate is 2.9%, contributing to an expanding infrastructure deficit
- 66% of all assets are in fair or better condition
- 29% of assets are projected to require replacement in the next 10 years
- Average annual capital requirements total \$373,000 per year across all assets

3.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of \$11.6 million based on inventory data from 2022. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

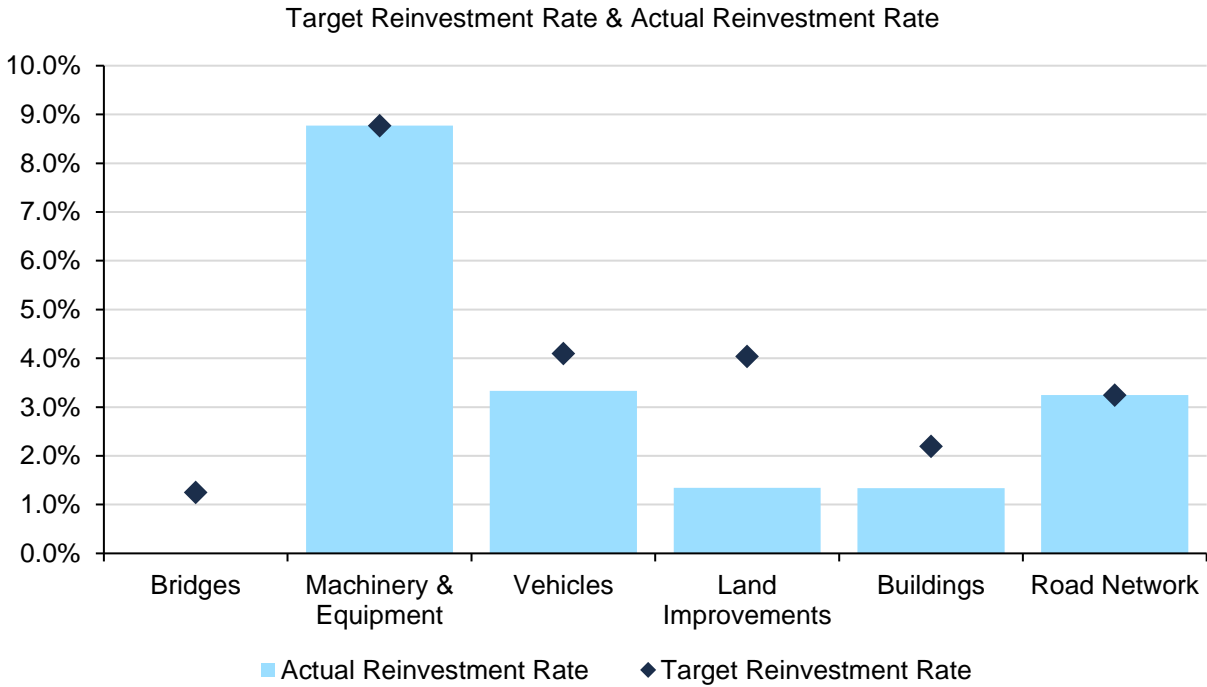


The following table identifies the methods employed to determine replacement costs across each asset category:

Asset Category	Replacement Cost Method	
	User-Defined	Notes
Road Network	99%	2022 Project Costing
Bridges	0%	N/A
Buildings	72%	2023 Insurance Appraisals
Machinery & Equipment	0%	N/A
Vehicles	0%	N/A
Land Improvements	17%	Staff Estimates
Overall	83%	

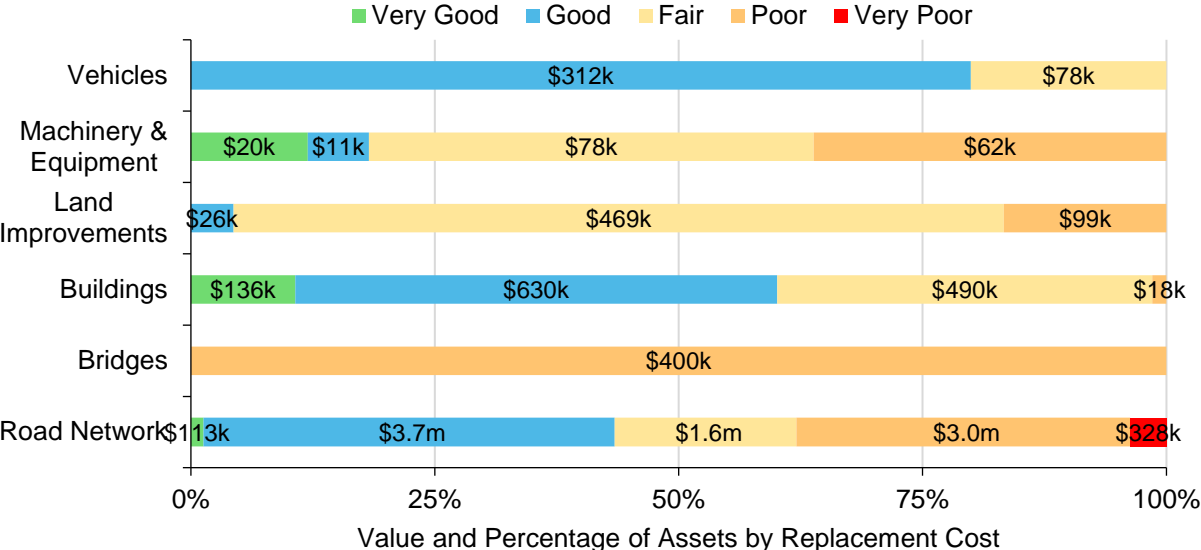
3.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Township should be allocating approximately \$373,000 annually, for a target reinvestment rate of 3.2%. Actual annual spending on infrastructure totals approximately \$338,000, for an actual reinvestment rate of 2.9%.



3.3 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 66% of assets in Jocelyn are in fair or better condition. This estimate relies on both age-based and field condition data.



This AMP relies on assessed condition data for 97% of assets; for the remaining portfolio, 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.

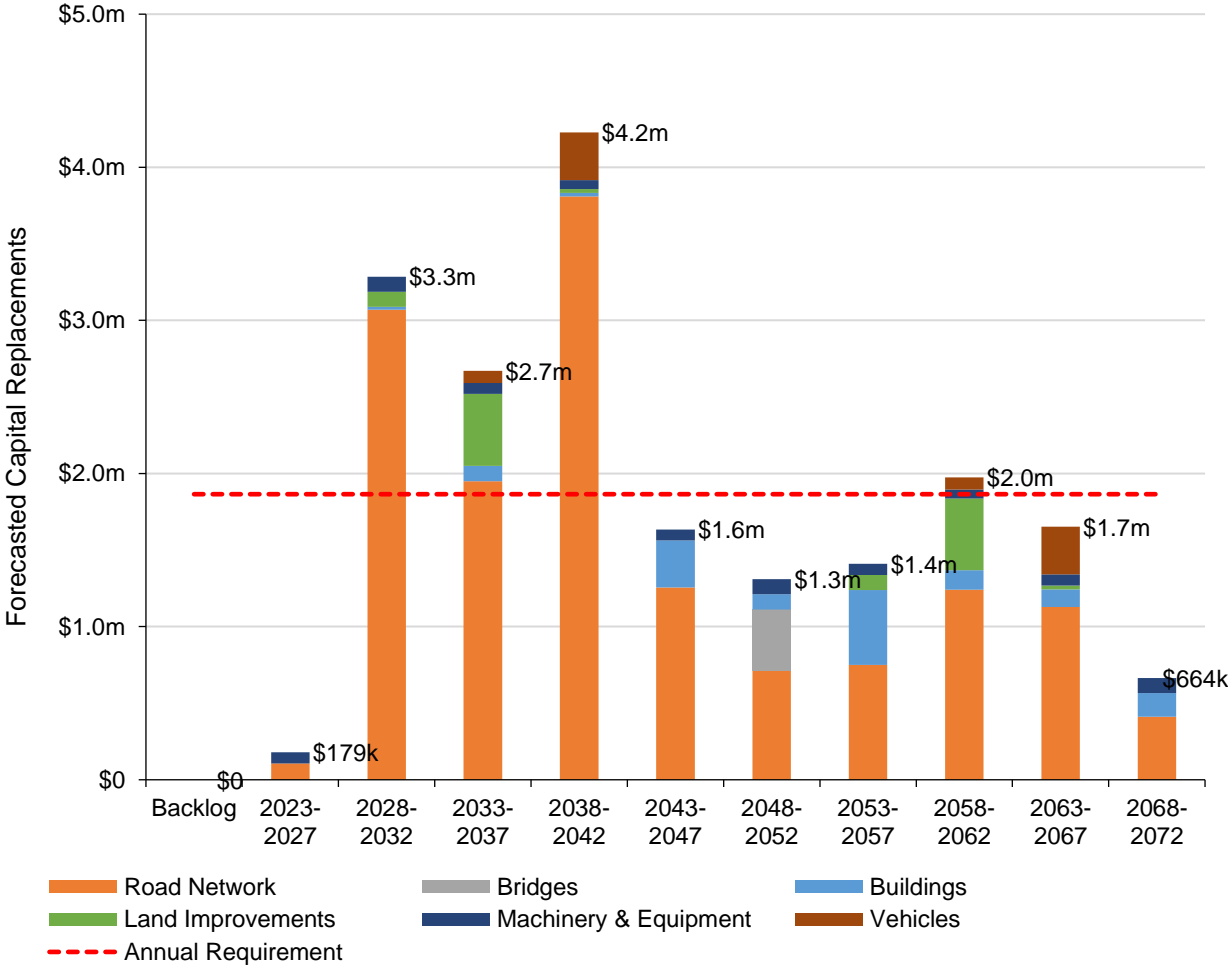
Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	Paved and Unpaved roads	99%	Staff Assessments
Bridges	All	100%	Staff Assessments
Buildings	All	89%	Staff Assessments
Machinery & Equipment	All	89%	Staff Assessments
Vehicles	All	100%	Staff Assessments
Land Improvements	Trails and Administration	83%	Staff Assessments

3.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 29% of the Township’s assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B.

3.5 Forecasted Capital Requirements

The development of a long-term capital forecast should include both asset rehabilitation and replacement requirements. With the development of asset-specific lifecycle strategies that include the timing and cost of future capital events, the Township can produce an accurate long-term capital forecast. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$1.9 million; this amount does not account for inflation.



4 Road Network

The road network is a critical component of the provision of safe and efficient transportation services and represents the highest value asset category in the Township’s asset portfolio. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including guard rails.

The state of the infrastructure for the road network is summarized in the following table.

Replacement Cost	Condition	Financial Capacity	
\$8.8 million	Fair (52%)	Annual Requirement:	\$285,000
		Funding Available:	\$285,000
		Annual Deficit:	\$0

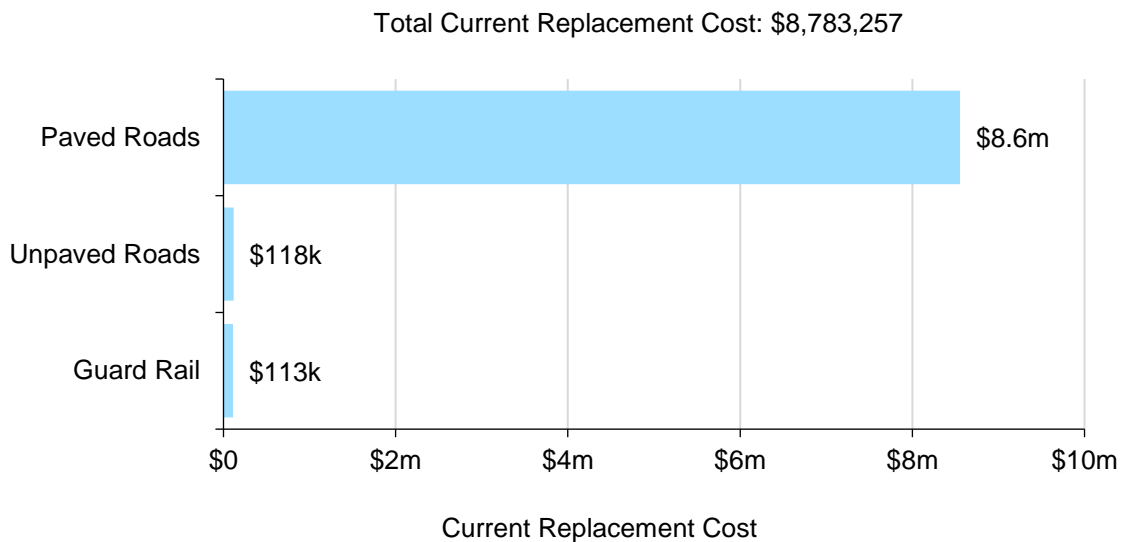
The following core values and level of service statements are a key driving force behind the Township’s asset management planning:

Service Attribute	Level of Service Statement
Scope	The road network service is conveniently accessible to the whole community in sufficient capacity (meets traffic demands) and is available under all weather conditions depending on the season.
Quality	The road network is in fair condition with minimal unplanned service interruptions and road closures.
Affordable	The average annual capital requirements are 100% funded.

4.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Guard Rail	2.0	\$113,000	\$2,000
Paved Roads	52.3 km	\$8,553,000	\$275,000
Unpaved Roads	15.2 km	\$118,000	\$8,000
Total		\$8,783,000	\$285,000



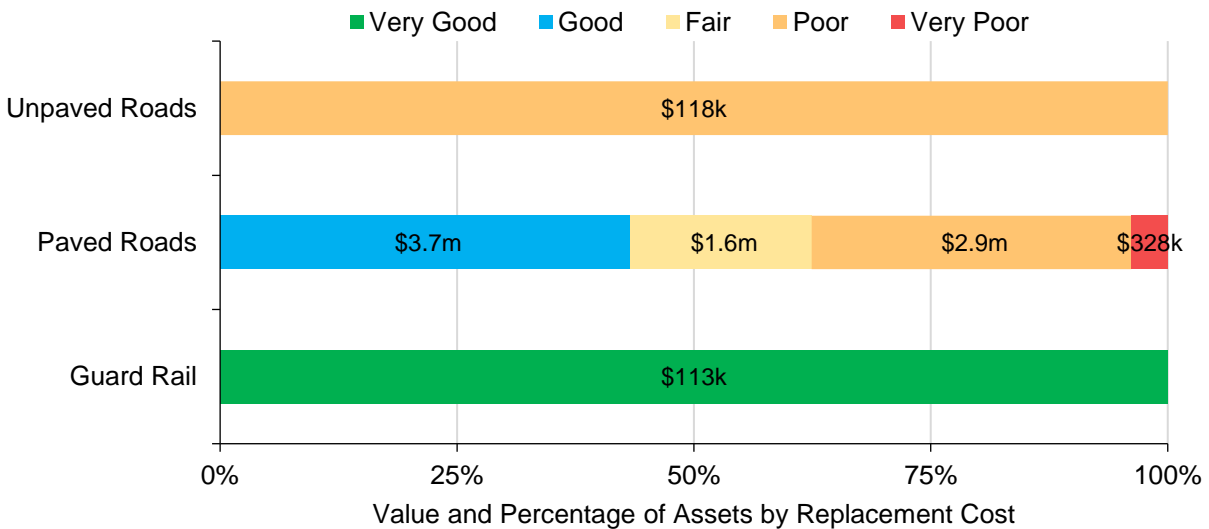
Each asset’s replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

4.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Guard Rail	50	5.5	89% (Very Good)
Paved Roads	76.5	6.5	52% (Fair)
Unpaved Roads	93.7	10.2	34% (Poor)
Average		7.1	52% (Fair)

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



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

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

4.2.1 Current Approach to Condition Assessment

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

- There is no formal condition assessment program for the road network.
- A Road Needs Study was carried out in 2013, however, the Township does not have any plans to conduct another study in the near future.
- Council members and staff conduct daily visual patrols of the road network; defects are noted.
- Council conducts annual road tours that involve documenting drainage issues, evaluating ditch conditions, and identifying other issues. These findings are used to develop annual plan and update the 10-year road network plan.

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

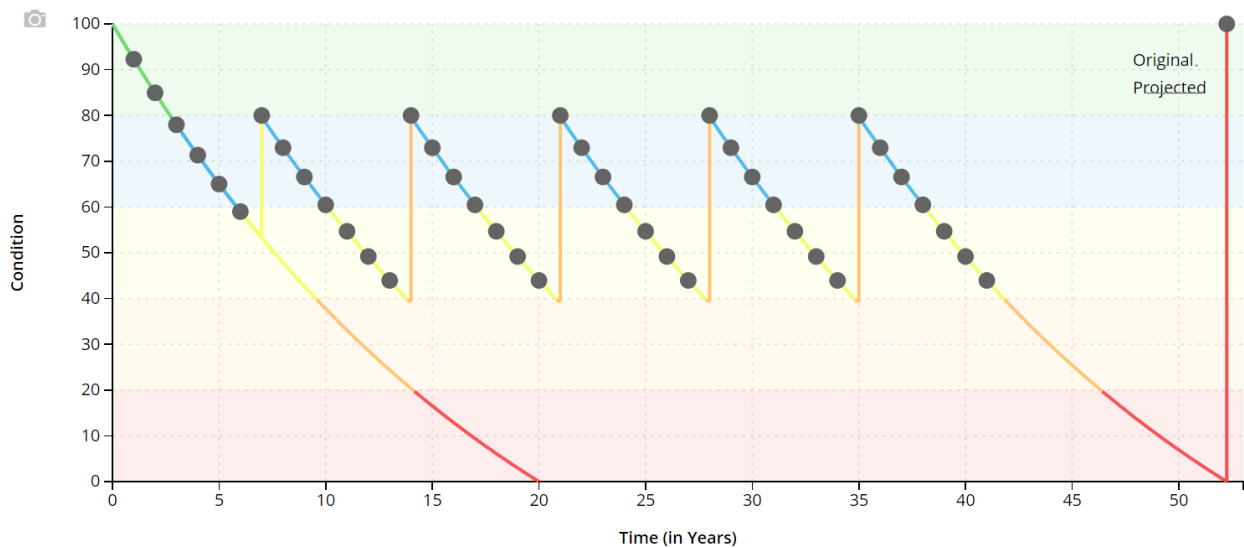
Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

4.3 Lifecycle Management Strategy

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

Paved Roads		
Event Name	Event Class	Event Trigger
Patching & Crack Sealing	Maintenance	Every 1 Year (Repeated while in fair condition)
Surface Treatment	Rehabilitation	Every 7 Years (Repeated 5 times)
Full Reconstruction	Replacement	End of Life



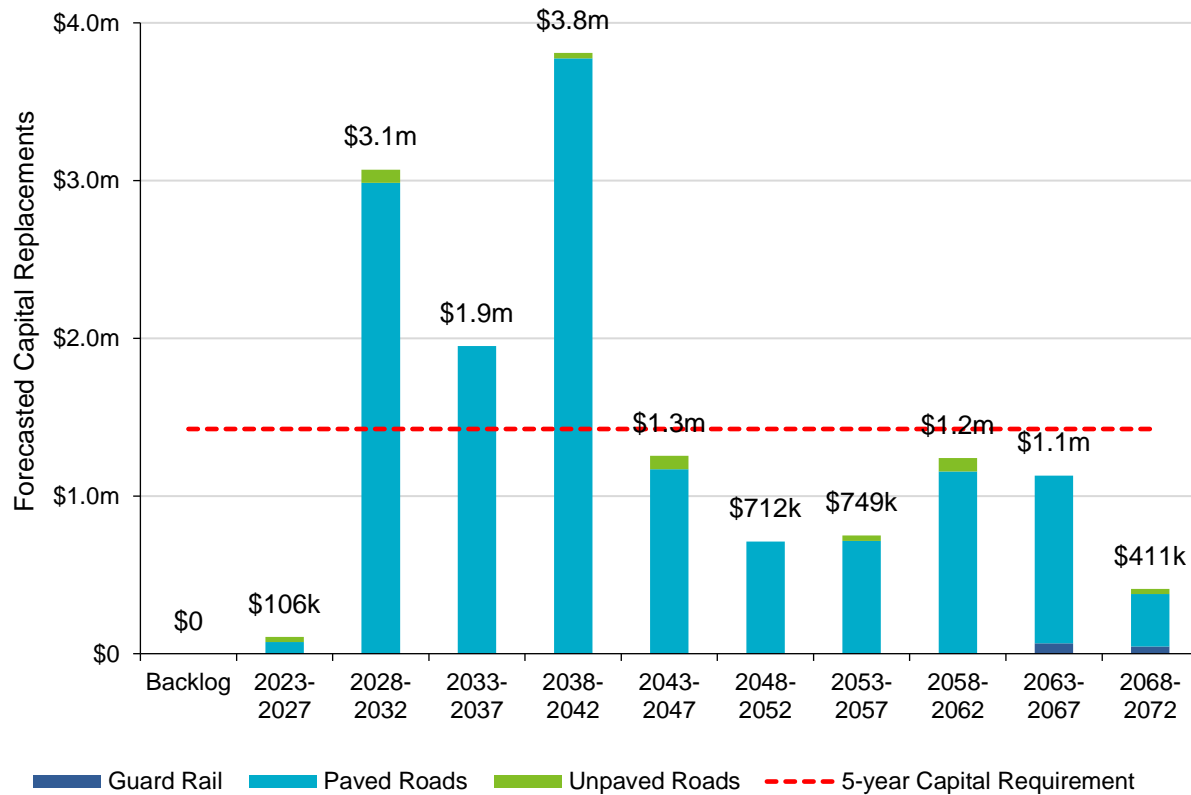
The following table outlines the Township’s current lifecycle management strategy that are not included in the tables above for Paved roads.

Activity Type	Description of Current Strategy
Maintenance	Snow and ice removal takes place as needed on all non-seasonal roads.
	Patching and crack sealing are completed for the entire road network annually as needed. Local contractors are sourced for maintenance and rehabilitation of the road network including patching and crack sealing.
	Unpaved roads are regravelled on as-needed basis. Other maintenance are performed seasonally.
Rehabilitation	Surface Treatment for paved roads are dependent on road condition, funding availability, and council members’ decision.
Replacement	Whether to conduct a surface treatment or opt for a full replacement is based on the viability of the road base looking for signs of poor drainage, tire rutting, and severe cracking.

4.3.1 Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for Paved and Unpaved roads, and assuming the end-of-life replacement of all other assets in this category, the following graph forecasts capital requirements for the road network.

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$1.4 million; this amount does not account for inflation.



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

4.4 Risk & Criticality

4.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2022 inventory data.



This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of the road network are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
	Likelihood of Flooding (Environmental)
	MMS Class (Social)
	Criticality (Health and Safety)

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

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

4.4.2 Risks to Current Asset Management Strategies

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



Asset Data & Information

There is a lack of confidence in the available inventory data and condition data for the storm culverts. Staff plan to prioritize data refinement efforts to increase the accuracy and reliability of culvert data and information. Once completed staff can confidently develop data-driven strategies to address infrastructure needs.



Organizational Knowledge & Capacity

The Township faces the risk of staff turnover due to limited personnel resources. Heavy reliance is placed on council involvement, contractors and volunteers who possess a significant amount of knowledge and information within the Township. The lack of standardized documentation and training processes present a significant risk in terms of knowledge and capacity loss when staff, contractors, and volunteer members retire from their positions.



Climate Change & Extreme Events

An increase in the frequency and intensity of wind and precipitation events can result in inaccessibility and flooding of sections of the road network. Further issues can arise as a result of flooding and poor drainage on low lying roads or roads that are built on swamp land including accelerated deterioration caused by freeze/thaw cycles. To improve asset resiliency, Staff should identify problem areas and improve drainage through enhanced lifecycle strategies.



Community Expectations & Growth

A current risk within the Township is managing accessibility and community expectations. There are requests to transition some seasonal roads into all-season. As the community grows, new residents will have different and higher expectations regarding the levels of service provided. To address these public expectations, the Township will require additional staff/contractor support and additional spending; it would not be feasible within the current budget.

4.5 Levels of Service

The following tables identify the Township’s current level of service for the road network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

4.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	<p>Very Poor: Widespread signs of deterioration. Requires remedial work to bring road up to standard. Service is affected.</p> <p>Poor: Large portions of road exhibiting deterioration with rutting, potholes, distortions, longitude and lateral cracking. Road is mostly below standard.</p> <p>Fair: Some sections of road starting to deteriorate. Requires some remedial work and surface upgrade in near future.</p> <p>Good: Road is in overall good condition. Few sections are starting to show signs of minimal deterioration.</p> <p>Very Good: Road is well maintained and in excellent condition. Surface was newly or recently upgraded. No signs of deterioration or remedial work required.</p>

4.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km ²)	0
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km ²)	0
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km ²)	1.03
Quality	Average pavement condition index for paved roads in the municipality	52%
	Average surface condition for unpaved roads in the municipality (e.g. excellent, good, fair, poor)	Poor
Affordability	Annual capital reinvestment rate	3.2%

4.6 Recommendations

Asset Inventory

- The asset inventory should be regularly reviewed to ensure it is up-to-date and an accurate reflection of the assets that are in-service. The guide rails inventory includes pooled assets that should be broken into discrete segments to allow for detailed planning and analysis.

Condition Assessment Strategies

- The last comprehensive assessment of the road network was completed in 2013. The Township should consider conducting a formal Roads Needs Study on a 5- to 7- year cycle to ensure accurate assessment information which can be utilized to develop enhanced lifecycle strategies.

Lifecycle Management Strategies

- Implement the identified lifecycle management strategies for paved roads and adopt proactive lifecycle strategies for unpaved roads to realize potential cost avoidance and maintain a high quality of road conditions. Evaluate the efficacy of the Township's lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies. Consider identified risks to the road network and adjust lifecycle management strategies to eliminate potential risks. Engage in public consultations to better understand community expectations within the Township. Develop a maintenance plan to address the needs and risks for high priority roads.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning. Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

5 Bridges

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

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

Replacement Cost	Condition	Financial Capacity	
\$400,000	Poor (39%)	Annual Requirement:	\$5,000
		Funding Available:	\$0
		Annual Deficit:	\$5,000

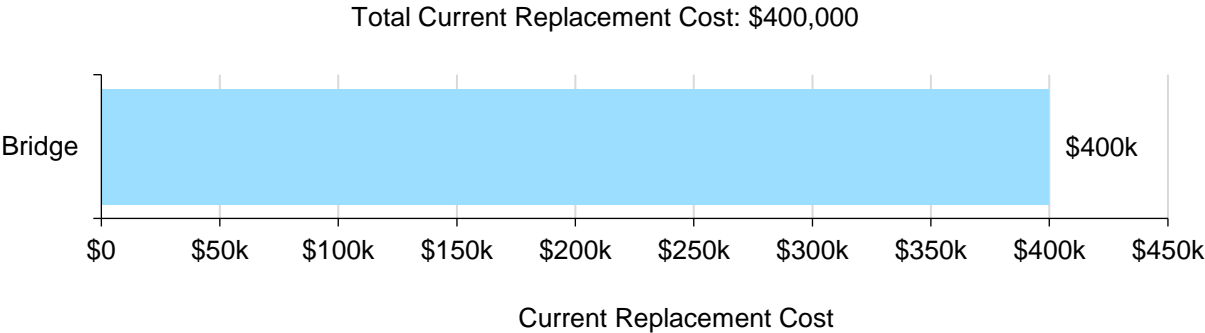
The following core values and level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	The bridge is conveniently accessible to most of the community in sufficient capacity (meets most traffic demands) and is available under all weather conditions. The bridge in the Township has a loading restriction.
Quality	The bridge is in poor condition with minimal unplanned service interruptions and closures.
Affordable	The average annual capital requirements are 0% funded.

5.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Bridge	1	\$400,000 ¹	\$5,000
Total		\$400,000	\$5,000



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

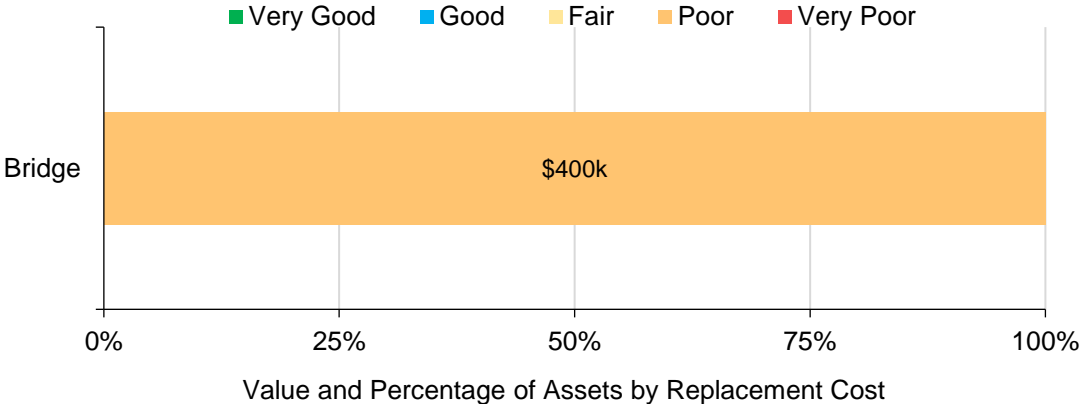
¹ The bridge is likely undervalued based on staff estimates. The cost to replace the entire bridge is likely much higher than the value stated.

5.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Bridge	75	45.8	39% (Poor) ²
Average		45.8	39% (Poor)

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



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

Each asset’s Estimated Useful Life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

² Rehabilitation activities can be completed to improve the bridge condition and avoid full replacement.

5.2.1 Current Approach to Condition Assessment

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

- Condition assessments of the bridge is completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM). The most recent assessment was completed in 2020.
- Bridges, along with the roads, are visually inspected by council members and staff on a regular basis.

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

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

5.3 Lifecycle Management Strategy

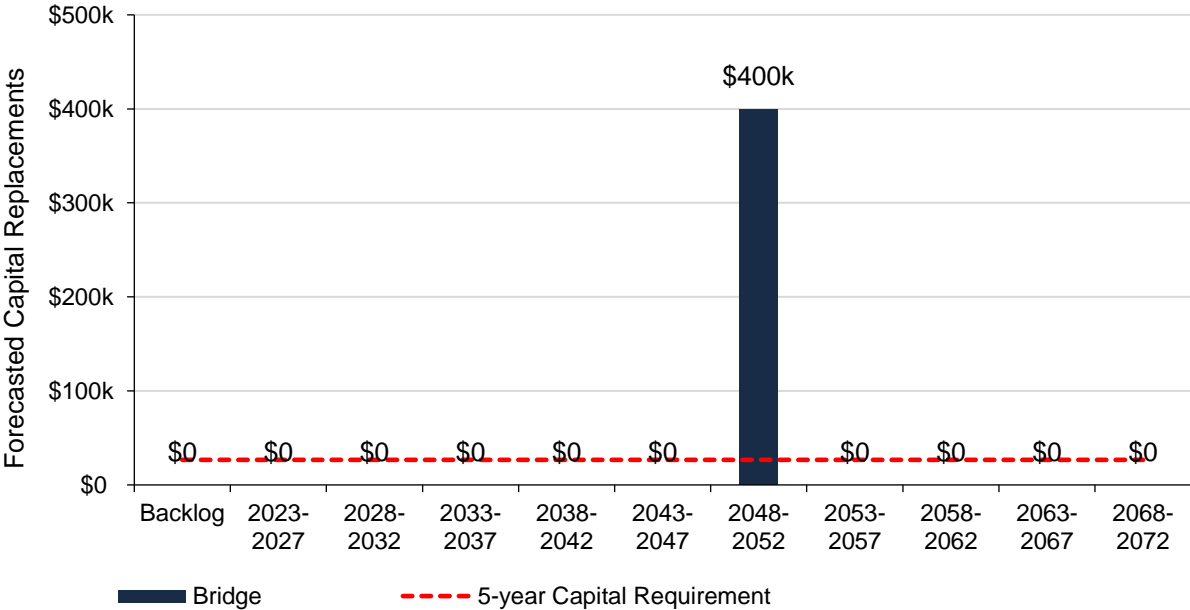
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Inspection	The most recent inspection report was completed in 2020 by Kresin Engineering Corporation.
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM). Capital projects are completed as budget becomes available.

5.3.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$27,000; this amount does not account for inflation.



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

5.4 Risk & Criticality

5.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2022 inventory data.



This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of Bridges are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)

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

5.4.2 Risks to Current Asset Management Strategies

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



Community Expectations

Managing accessibility and meeting community expectations of bridges poses a current risk in the Township. The bridge has load restrictions and experience high traffic volumes. Various heavy vehicles require access to the bridge for crossing. Additionally, activities such as filling up water tanks take place at the bridge. In order to meet community expectations and minimize downtime, the Township should adhere to the guidelines and recommendations provided in the Ontario Structural Inspections Manual (OSIM).



Capital Funding Strategies

Major capital rehabilitation projects for the bridge are very dependant on the availability of grant funding opportunities. The Township should continue to complete regular inspections according to the OSIM and utilize the assessment recommendations for the development of lifecycle strategies and capital planning. The Township should also consider updating asset replacement costs and event costs on a cyclical basis to improve the effectiveness of capital planning.

5.5 Levels of Service

The following tables identify the Township’s current level of service for Bridges. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

5.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of the municipal transportation network. All local traffic and service vehicles have a 5 tonne load restriction. Logging trucks are recommended to take alternative routes to avoid bridges and culverts.
Quality	Description or images of the condition of Bridges and how this would affect use of the Bridges	See Appendix C
	Description or images of the condition of Culverts and how this would affect use of the Culverts	N/A

5.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% of bridges in the Township with loading or dimensional restrictions	100%
Quality	Average bridge condition index value for bridges in the Township	39%
Affordability	Annual capital reinvestment rate	0%

5.6 Recommendations

Asset Inventory & Condition Data

- Continue to review and validate inventory data, assessed condition data and replacement costs for all bridges upon the completion of OSIM inspections every 2 years.

Lifecycle Management Strategies

- This AMP only includes capital costs associated with the reconstruction of bridges. The Township should work towards identifying projected capital rehabilitation and renewal costs for Bridges and integrating these costs into long-term planning. The Township should be prioritizing maintenance and rehabilitation activities recommended by the OSIM.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believe to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

6 Buildings

The Township of Jocelyn owns and maintains several facilities that provide key services to the community. These include:

- Township offices
- Townhall building
- Fire hall
- Parks buildings
- Landfill share shed

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

Replacement Cost	Condition	Financial Capacity	
\$1.3 million	Good (63%)	Annual Requirement:	\$28,000
		Funding Available:	\$17,000
		Annual Deficit:	\$11,000

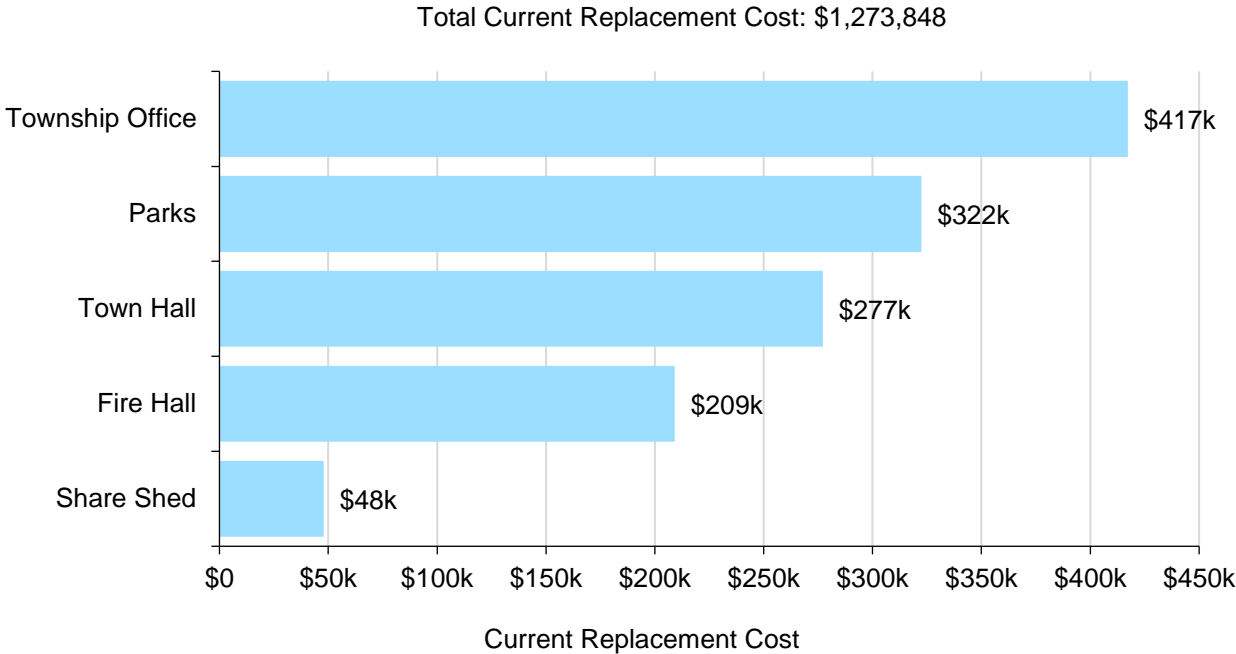
The following core values and level of service statements are a key driving force behind the Township’s asset management planning:

Service Attribute	Level of Service Statement
Safe & Regulatory	The buildings operate in compliance with regulatory standards and undergo regular safety assessments.
Affordable & Sustainable	The buildings are in good condition with minimal unplanned service interruptions and closures. The average annual capital requirements are 61% funded.

6.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost ³	Annual Capital Requirement
Fire Hall	2	\$209,000	\$4,000
Parks	7	\$322,000	\$6,000
Share Shed	1	\$48,000	\$1,000
Town Hall	1 (3)	\$277,000	\$8,000
Township Office	1 (3)	\$417,000	\$9,000
Total		\$1,274,000	\$28,000



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

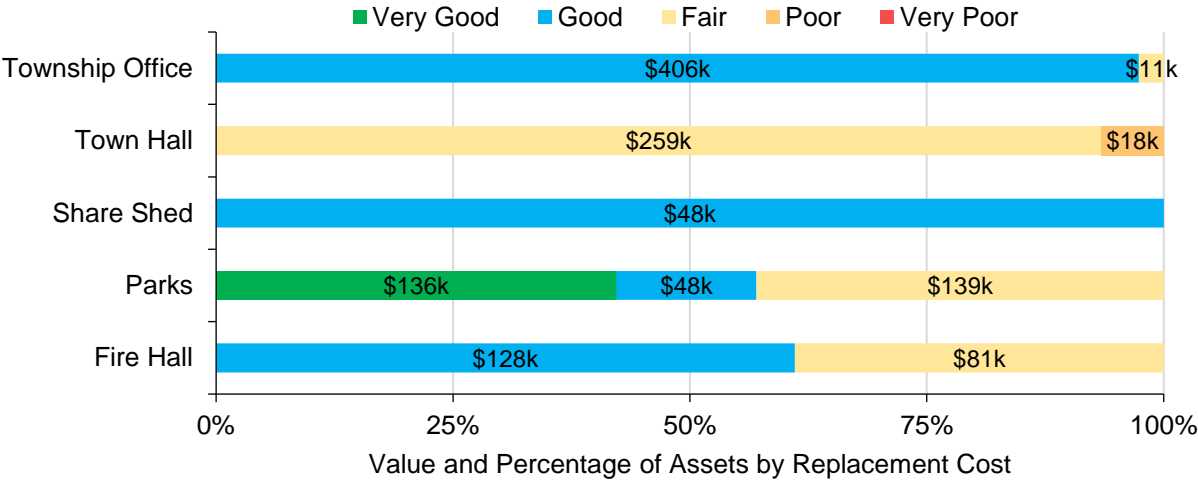
³ The replacement cost of the buildings is based on insurance appraisals and may not be an accurate representation of current costs to replace the entire building. Based on recent market trends, the costs for material and labour are likely much higher.

6.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Fire Hall	50	19.1	64% (Good)
Parks	50	20.2	72% (Good)
Share Shed	50	16.1	68% (Good)
Town Hall	34.3	17.7	47% (Fair)
Township Office	33.3	11.3	66% (Good)
Average		17.5	63% (Good)

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



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

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

6.2.1 Current Approach to Condition Assessment

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

- The satellite fire hall undergoes a weekly assessment that involves a visual inspection and a safety check of vital components.
- The main fire hall receives visual assessments twice per week and the town hall undergoes a visual assessment once per week, but the town hall assessments are more reactive in nature.
- A dedicated health unit conducts inspections of the water system at the Town Hall annually. Internal water testing is completed quarterly.
- The Township is considering incorporating third party assessments for their buildings in the future.

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

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

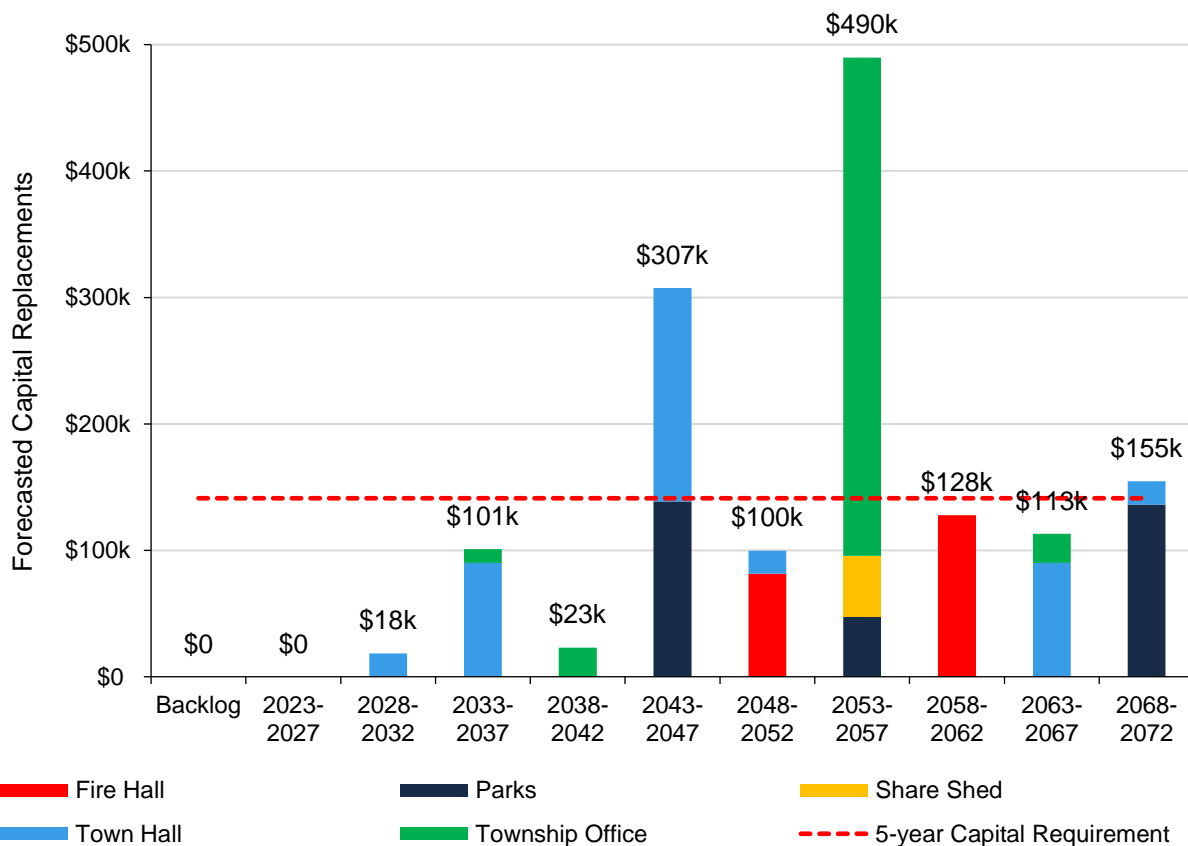
6.3 Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance/ Repairs	Maintenance activities are driven by assessment strategies. Municipal buildings are subject to regular inspections to identify health & safety requirements as well as structural deficiencies that require additional attention. A dedicated health unit completes building inspections 3 times per year, with additional focus on the water systems specifically.
	HVAC systems for all buildings are serviced annually.
	Painting and cleaning is completed for all buildings on a regular basis.
Rehabilitation / Replacement	Structural deficiencies and repairs are completed as-needed and are generally reactive. Determination on whether building components should be repaired is based on condition assessments and staff expertise.
	Assessments are completed strategically and replacement and renewal activities are conducted through consideration of condition, age, health and safety, and building criticality.

6.3.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$141,000; this amount does not account for inflation.



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

6.4 Risk & Criticality

6.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2022 inventory data.



This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of Buildings are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
	Criticality (Health and Safety)

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

6.4.2 Risks to Current Asset Management Strategies

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



Asset Data, Growth & Capital Funding

The Township's buildings are not componentized in the asset inventory and condition data is based entirely on staff estimates. The Township has indicated that a building condition assessment would be beneficial, but funding would be a concern. A componentized inventory and conducting condition assessments would provide more accurate information about the buildings and it would be beneficial for developing detailed lifecycle strategies. There are also concerns related to growth. The fire hall is reaching its capacity and requires expansion in the event of additional vehicle acquisitions to accommodate growth within the community.



The Township should develop a comprehensive long-term buildings plan which includes an allocation of budget for condition assessments, addressing future growth requirements, and implementation of a maintenance and rehabilitation strategy for building components.

6.5 Levels of Service

The following tables identify the Township’s current level of service for buildings. These metrics include the technical and community level of service metrics that the Township has selected for this AMP.

6.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Safe and Regulatory	Description of monthly and annual facilities inspection process	See Section 6.2.1
Affordable & Sustainability	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on municipal facilities	See Section 6.3

6.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Safe & Regulatory	# of service requests annually for the Fire Hall	3
	# of service requests annually for the Town Hall	2
	# of service requests annually for the Township Office	1
	# of service requests annually for the Parks Buildings	1
	# of service requests annually for the Share Shed (Landfill)	0
Sustainable	% of facilities that are in good or very good condition	60
	% of facilities that are in poor or very poor condition	1
Affordable	Annual capital reinvestment rate	2.2%

6.6 Recommendations

Asset Inventory & Replacement Costs

- The Township's asset inventory contains a single record for all buildings. Buildings consist of several separate capital components that have unique estimated useful lives and require asset-specific lifecycle strategies. Staff should work towards a component-based inventory of all buildings to allow for component-based lifecycle planning.
- Gather accurate replacement costs and update on a regular basis to ensure the accuracy of capital projections.

Condition Assessment Strategies

- The Township should implement regular condition assessments for all buildings to better inform short- and long-term capital requirements.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

7 Vehicles

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

- Fire trucks to provide emergency services

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

Replacement Cost	Condition	Financial Capacity	
\$390,000	Good (68%)	Annual Requirement:	\$16,000
		Funding Available:	\$13,000
		Annual Deficit:	\$3,000

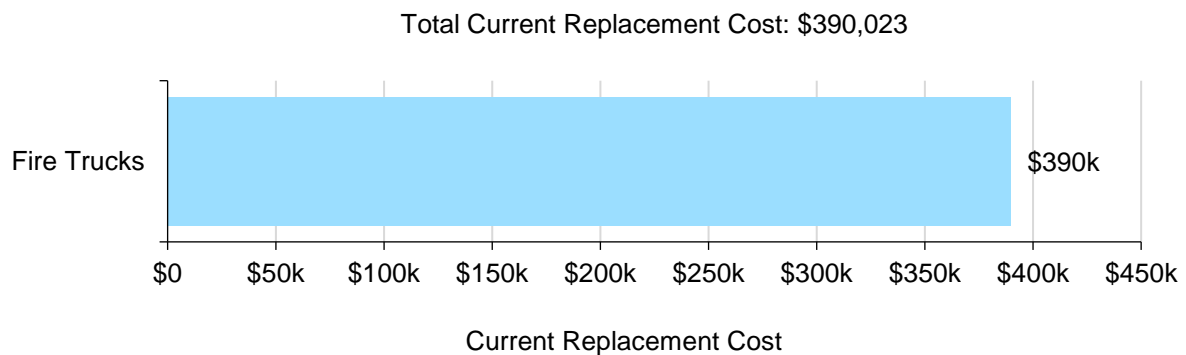
The following core values and level of service statements are a key driving force behind the Township’s asset management planning:

Service Attribute	Level of Service Statement
Safe & Regulatory	The vehicles are visually assessed before operation to ensure their safety and readiness to meet demands of service delivery.
Affordable & Sustainable	The vehicles are in good condition with minimal unplanned service interruptions. The average annual capital requirements are 81% funded.

7.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost	Annual Requirement
Fire Trucks	3	\$390,000 ⁴	\$16,000
Total		\$390,000	\$16,000



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

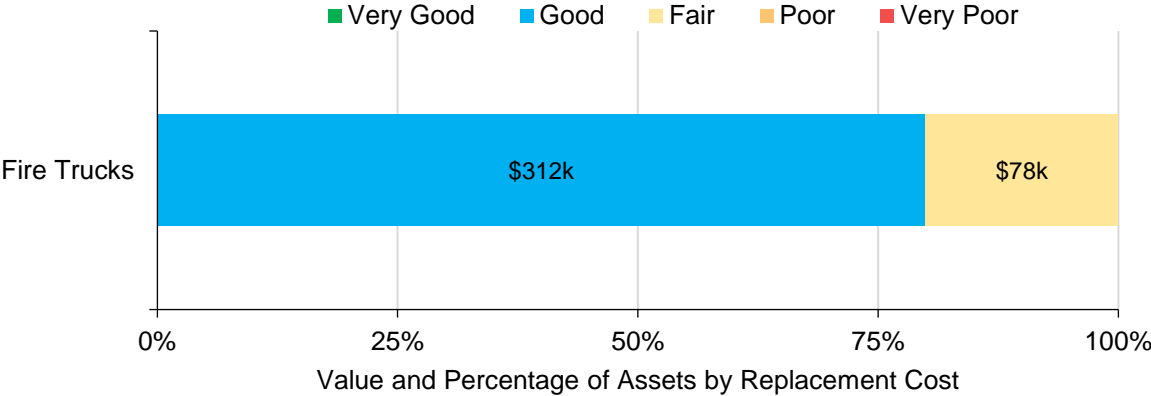
⁴ The fire trucks are likely undervalued based on current market trends.

7.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Fire Trucks	25	10.2	68% (Good)
Average		10.2	68% (Good)

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



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

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

7.2.1 Current Approach to Condition Assessment

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

- The Township completes regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation.
- Vehicles undergo an annual mechanical assessment to ensure regulatory compliance, with condition scores being documented throughout this evaluation.
- A formalized process has been implemented for monthly assessments, which involve visually inspecting and testing components to ensure they are operational, and documenting any identified deficiencies.

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

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

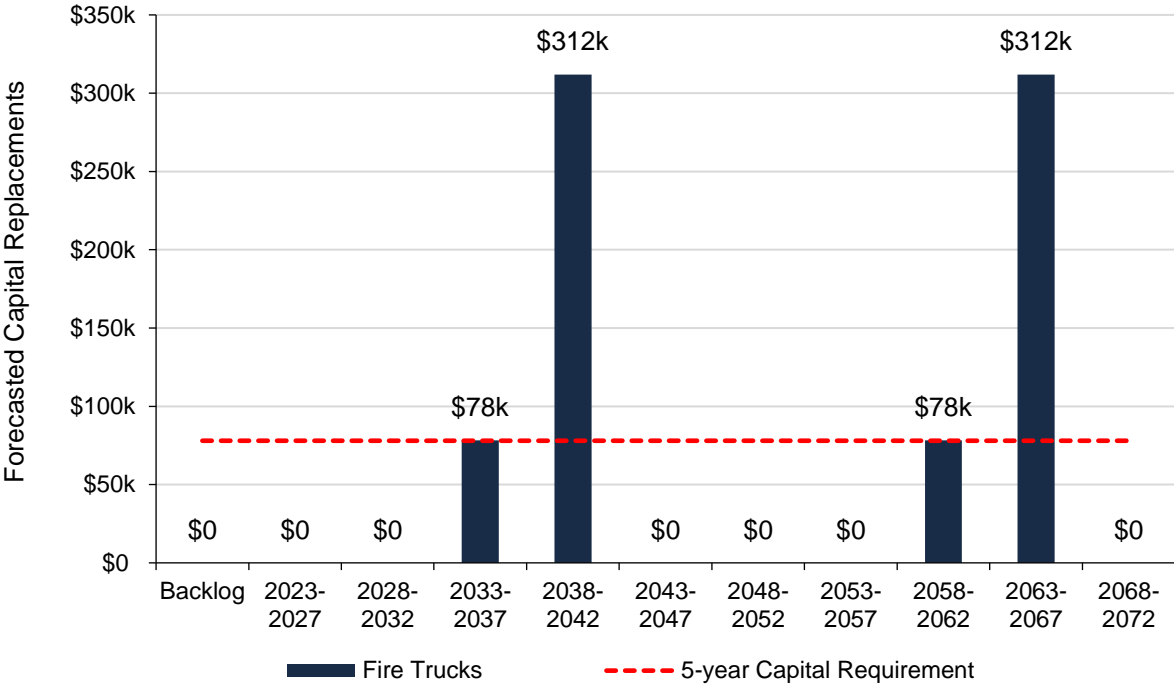
7.3 Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Vehicles within the fire department are inspected in reference to vehicle manuals and in accordance with the guidelines set by the National Fire Protection Association (NFPA).
Replacement	Vehicles are utilized until they reach a point of failure, at which they are replaced. Other factors such as the severity of deficiencies or compliancy with regulations contribute to a vehicle’s replacement.

7.3.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$78,000; this amount does not account for inflation.



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

7.4 Risk & Criticality

7.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2022 inventory data.



This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of vehicles are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)

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

7.4.2 Risks to Current Asset Management Strategies

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



Aging Infrastructure and Community Expectations

A significant portion of the Township's vehicles are currently out of service or approaching a required replacement. Due to the significant influx of seasonal residents and tourists, the Township faces a potential risk of fulfilling expected levels of service. There have been past instances where emergency vehicles experience breakdowns on route to respond to emergencies. To ensure the Township's vehicles can consistently meet expected levels of service year-round, development of a comprehensive long-term plan should be prioritized. This plan should incorporate proactive measures such as regular maintenance and rehabilitation strategies to minimize breakdown incidents and to maintain adequate capacity to meet expected levels of service effectively.

7.5 Levels of Service

The following tables identify the Township’s current level of service for vehicles. These metrics include the technical and community level of service metrics that the Township has selected for this AMP.

7.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Safe & Regulatory	Description of the vehicle inspection and safety program	See Section 7.2.1
Affordable & Sustainability	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on vehicles	See Section 7.3

7.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Safe & Regulatory	# of vehicle major defects reported (required outside resources) for the Ford 9000 Pumper	1
	# of vehicle major defects reported (required outside resources) for the Ford Tanker #19	0
	# of vehicle major defects reported (required outside resources) for the 2011 Fire Truck	0
	# of vehicle major defects reported (required outside resources) for the 2002 International Rescue Truck	0
	% of volunteer fire fighters with a DZ license	67%
	# of motor vehicle accidents involving municipal vehicles	0
Sustainable	% of vehicles that are in good or very good condition	80
	% of vehicles that are in poor or very poor condition	0
Affordable	Annual capital reinvestment rate	3.3%

7.6 Recommendations

Replacement Costs

- Replacement costs for vehicles are based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Continue conducting regular condition assessments for all vehicles in order to ensure accurate and up-to-date condition scores.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

8

Machinery & Equipment

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

- Administration equipment to support municipal staff
- Protection equipment to support the delivery of emergency services
- Parks equipment to support landscaping of municipal owned areas
- Road equipment to maintain roadside environment

Keeping machinery and equipment in an adequate state of repair is important to maintain a high level of service. The state of the infrastructure for the machinery and equipment is summarized in the following table.

Replacement Cost	Condition	Financial Capacity	
\$171,000	Fair (48%)	Annual Requirement:	\$15,000
		Funding Available:	\$15,000
		Annual Deficit:	\$0

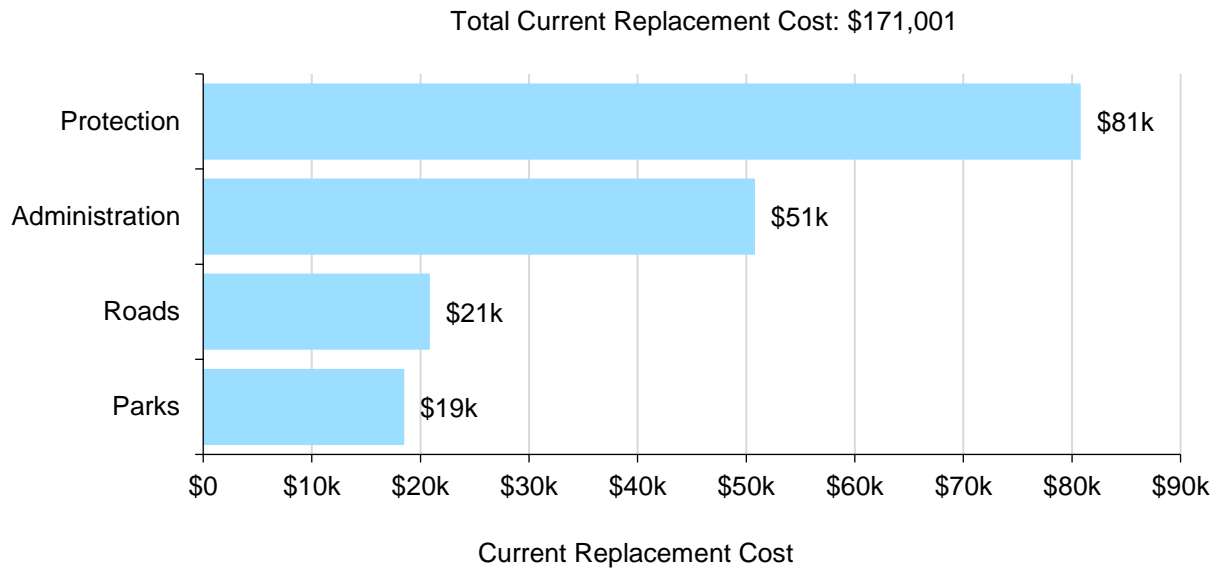
The following core values and level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Safe & Regulatory	The machinery and equipment are regularly assessed in accordance with regulatory standards and operators fulfill licensing requirements and minimize workplace injuries.
Sustainable & Affordable	The machinery and equipment are in fair condition with minimal unplanned service interruptions. The average annual capital requirements are 100% funded.

8.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Administration	2	\$51,000	\$3,000
Parks	2	\$19,000	\$2,000
Protection	5	\$81,000	\$8,000
Roads	1	\$21,000	\$2,000
Total		\$171,000	\$15,000



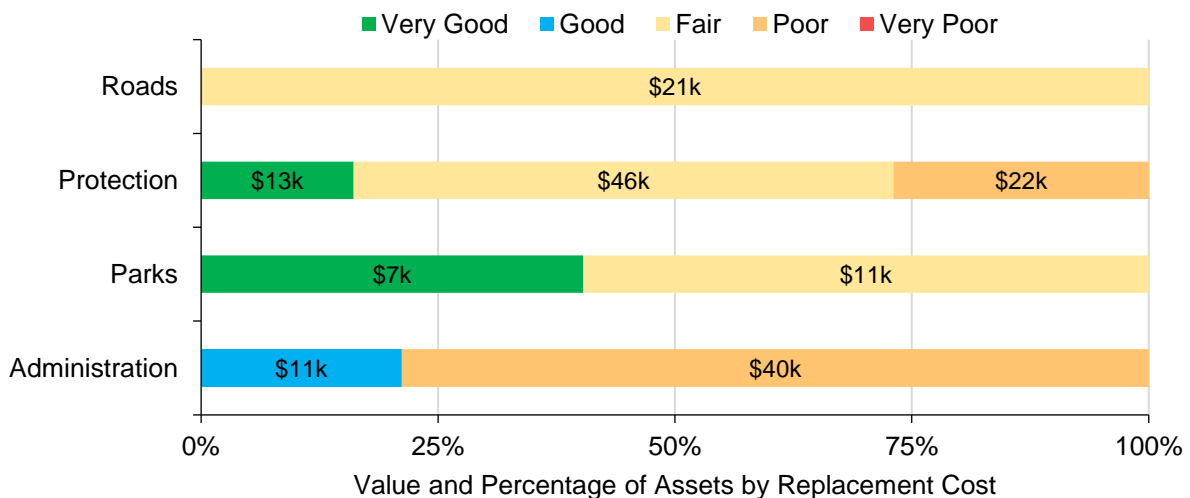
Each asset’s replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

8.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Administration	15	8.2	41% (Fair)
Parks	10	3.2	64% (Good)
Protection	10	4.6	50% (Fair)
Roads	10	5.9	41% (Fair)
Average		5.2	48% (Fair)

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



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

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

8.2.1 Current Approach to Condition Assessment

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

- Safety assessments are conducted annually and biannually in accordance with regulatory requirements.
- Machinery and equipment belonging to the fire department is inspected routinely by staff, and regularly by the manufacturer, as per NFPA standards.

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

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

8.3 Lifecycle Management Strategy

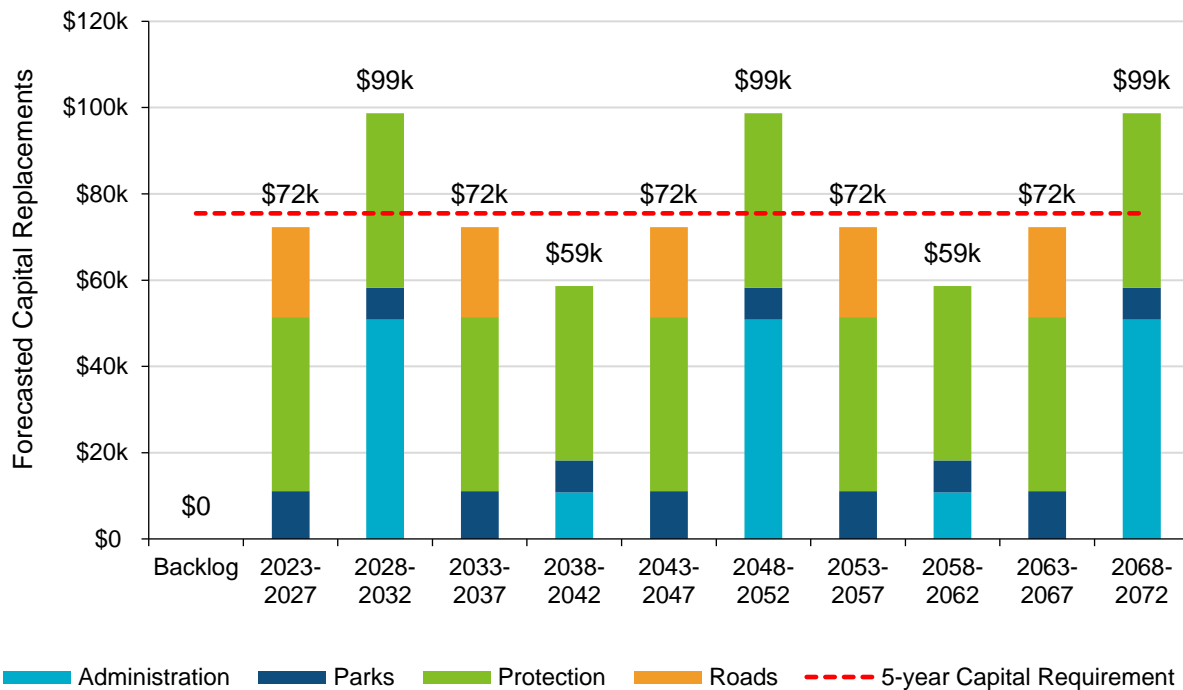
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Public works and parks equipment are maintained and inspected on annual basis.
	Bunker gear and other machinery and equipment belonging to the fire department are maintained routinely by staff by the manufacturer as needed, as per NFPA standards.
	Computer maintenance is usually done in-house, outside consultants mostly act as support.
Replacement	Most of the machinery and equipment assets are replaced on a 10-year cycle. They may be replaced sooner or later depending on performance.
	Protection equipment is replaced either upon reaching the regulatory year or upon failure. The replacement of these assets is based on the service life remaining and budget available.

8.3.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$75,000; this amount does not account for inflation.



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

8.4 Risk & Criticality

8.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2022 inventory data.



This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of machinery and equipment are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
	Criticality (Health and Safety)

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

8.4.2 Risks to Current Asset Management Strategies

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



Asset Data

There are a number of pooled assets within the machinery and equipment category. It is recommended to break down pooled assets into individual assets and segments to allow for more detailed planning and analysis.



Capital Funding Strategies

The Township has encountered challenges receiving funding for machinery and equipment assets. There are budgets in place for emergency service equipment, but there is limited budget for other asset segments. As the remaining machinery and equipment assets continue to age, there will be increasing operation and maintenance costs. To address funding challenges related to machinery and equipment assets, the Township should develop a capital funding strategy considering acquisition and operation and maintenance costs.

8.5 Levels of Service

The following tables identify the Township’s current level of service for machinery and equipment. These metrics include the technical and community level of service metrics that the Township has selected for this AMP.

8.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Safe & Regulatory	Description of the machinery and equipment inspection and safety program	See Section 8.2.1
Affordable & Sustainability	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on machinery and equipment	See Section 8.3

8.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Safe & Regulatory	# of workplace injuries due to equipment failures	0
	% of equipment used beyond its recommended life	65
Sustainable	% of equipment and machinery assets that are in good or very good condition	18
	% of equipment and machinery assets that are in poor or very poor condition	36
Affordable	Annual Capital Reinvestment Rate	8.8%

8.6 Recommendations

Asset Inventory and Replacement Costs

- Several machinery and equipment segments within inventory include pooled assets that should be broken into discrete segments to allow for detailed planning and analysis.
- Machinery and equipment replacement costs were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk machinery and equipment.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

9 Land Improvements

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

- Administrative land improvements
- Trails
- Environmental land improvements such as landfill wells

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

Replacement Cost	Condition	Financial Capacity	
\$594,000	Fair (50%)	Annual Requirement:	\$24,000
		Funding Available:	\$8,000
		Annual Deficit:	\$16,000

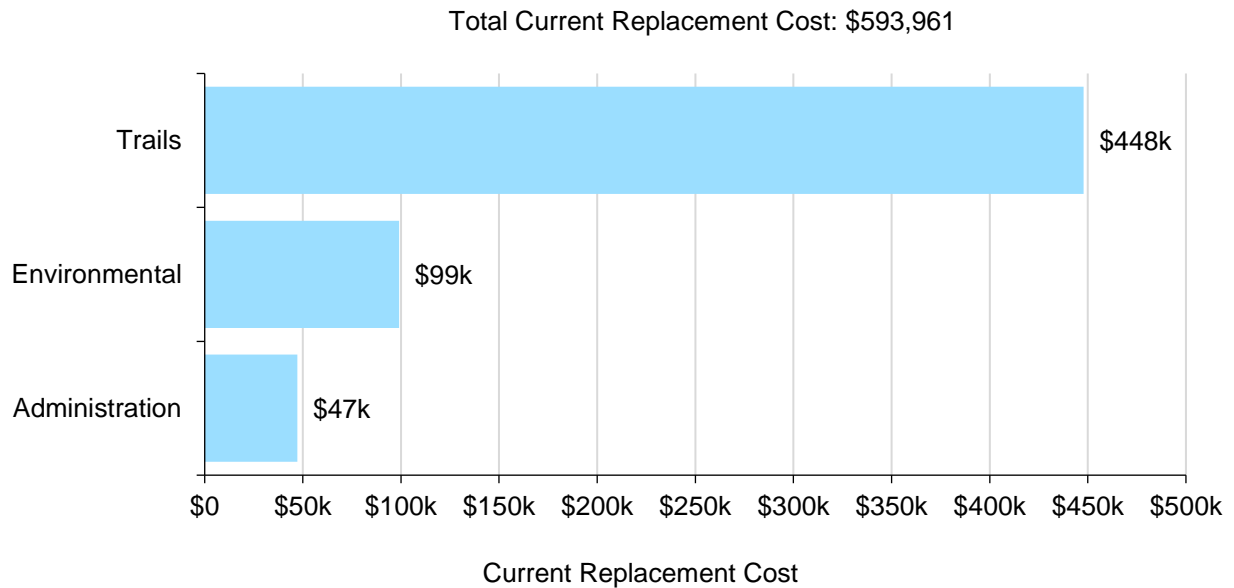
The following core values and level of service statements are a key driving force behind the Township’s asset management planning:

Service Attribute	Level of Service Statement
Safe & Regulatory	The land improvement assets are inspected regularly and meet regulatory standards required to operate safely.
Sustainable & Affordable	The land improvements are in fair condition with minimal unplanned service interruptions. The average annual capital requirements are 33% funded.

9.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Administration	2	\$47,000	\$2,000
Environmental ⁵	9	\$99,000	\$4,000
Trails	3	\$448,000	\$18,000
Total		\$594,000	\$24,000



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

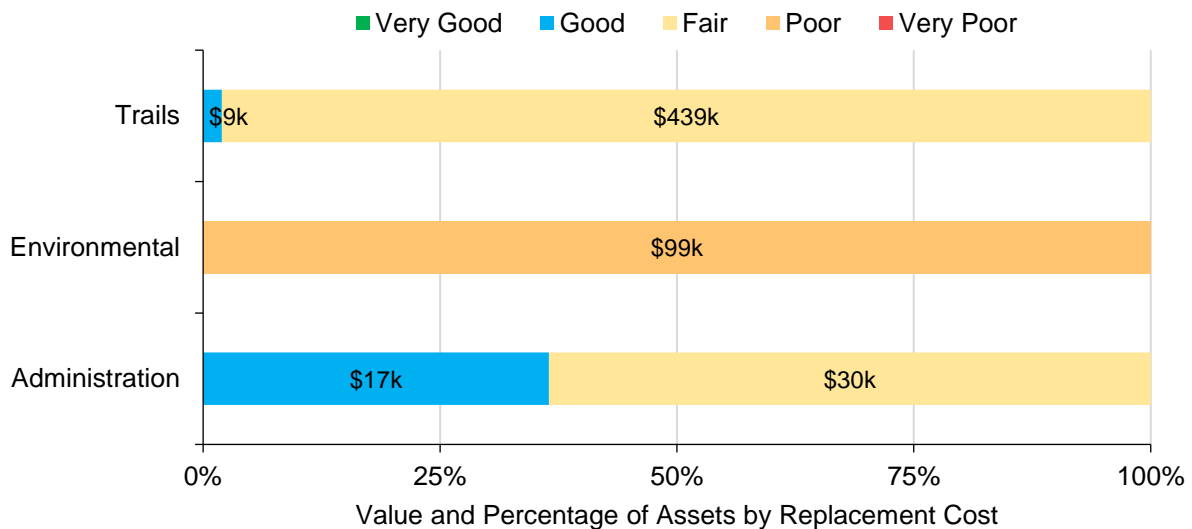
⁵ This category includes the landfill testing wells.

9.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Administration	25	9.5	59% (Fair)
Environmental	25	18	28% (Poor)
Trails ⁶	25	10.1	54% (Fair)
Average		11.2	50% (Fair)

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



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

⁶ The 2010/2009 trails are now maintained seasonally with the unpaved roads and currently included in the unpaved road system.

rehabilitation and replacement activities is required to increase the overall condition of the land improvements.

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

9.2.1 Current Approach to Condition Assessment

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

- Water sampling for landfills is mandated by legislation and are conducted biannually by engineers
- Water sampling for the administration assets undergoes an informal inspection annually
- The town hall undergoes a water sampling inspection every 3 months
- Staff complete regular visual inspections of land improvements assets during water sampling to ensure they are in state of adequate repair but are completed on an ad hoc basis

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

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

9.3 Lifecycle Management Strategy

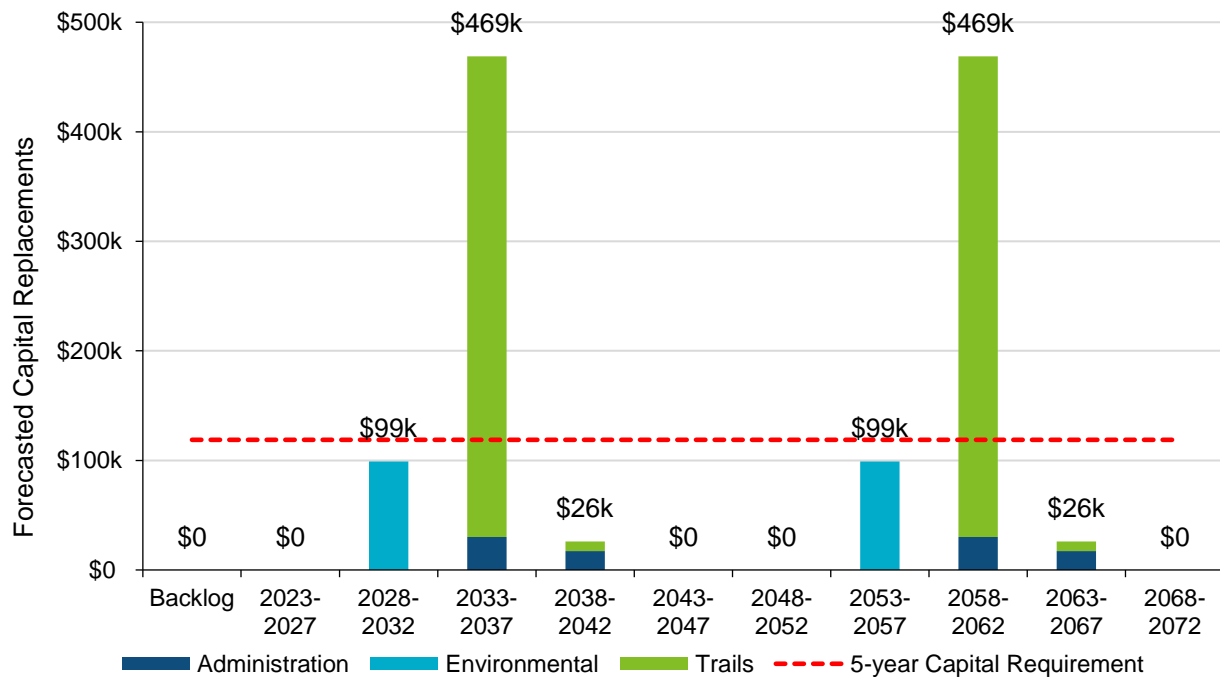
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	The land improvements asset category includes unique asset types and lifecycle requirements are dealt with on a case-by-case basis.
Replacement	Replacement is upon failure or notice of deficiencies, or recommended by the Ministry of the Environment.

9.3.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins. The trend line represents the average 5-year capital requirement of \$119,000; this amount does not account for inflation.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B. The trails and landfill wells are pooled assets and therefore will not likely require replacement at the same time.

9.4 Risk & Criticality

9.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2022 inventory data.



This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of land improvements are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Financial)
	Average Annual Daily Users (Social)

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

9.4.2 Risks to Current Asset Management Strategies

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



Aging Infrastructure and Capital Funding Strategies

The Township faces a significant risk due to the aging infrastructure of wells, as they experience unexpected issues which require immediate attention and resolution. The ongoing need for repairs and maintenance create difficulties in allocating capital funding. Proactive measures such as regular inspections, maintenance, or potential infrastructure upgrades should be explored to mitigate risks associated with the aging infrastructure of wells.



Community Expectations

The community relies on the wells within the Township, but often overlook the potential risks associated with the infrastructure such as runoff that may affect nearby residents. Seasonal residents and tourists may have different expectations regarding wells but do not have a complete understanding of the infrastructure background. The Township should address this gap by increasing awareness and education regarding water infrastructure, ensuring residents and tourists have a clear understanding of potential risks and necessary precautions to maintain well infrastructure.

9.5 Levels of Service

The following tables identify the Township’s current level of service for land improvements. These metrics include the technical and community level of service metrics that the Township has selected for this AMP.

9.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Safe & Regulatory	Description of the land improvement inspection and safety program	See Section 9.2.1
Affordable & Sustainability	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on land improvements	See Section 9.3

9.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Sustainable	% of parks and recreation assets that are in good or very good condition	4
	% of parks and recreation assets that are in poor or very poor condition	17
Affordable	Annual Capital Reinvestment Rate	1.3%

9.6 Recommendations

Asset Inventory and Replacement Costs

- Landfill wells within inventory consist of a pooled asset that should be broken into discrete segments to allow for detailed planning and analysis.
- Most land improvement assets were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk assets.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

10

Impacts of Growth

Key Insights

- Understanding the key drivers of growth and demand will allow the Township to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure
- Moderate fluctuation in population growth is expected
- The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service

10.1 Description of Growth Assumptions

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow the Township to 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.

10.1.1 St. Joseph Island Official Plan (2010)

St. Joseph Island's Official Plan includes Jocelyn Township along with three other municipalities. The Official Plan was approved in 2003 with modifications in 2010. The Official Plan bases its projections on the Growth Plan for Northern Ontario and reflects the goals of the Planning Act.

The purpose of the Official Plan is to establish a foundation for managing growth that preserves St. Joseph Island's character, diversity, civic identity and heritage growth. The Official Plan will encourage further intensification and use of the land while encouraging redevelopment of existing infrastructure. Maintenance and enhancement of agriculture, resource, and Rural lands will be a focus over the duration of the Official Plan.

The Settlement Area will be the focus of residential and economic growth. Development of tourist commercial uses and rural areas will be encouraged which are close to settlement areas or natural recreational resources. The younger age cohort and working age population is expected to decline but the senior population is expected to increase. Changes in demographics within the Township will need to be considered when optimizing and adapting existing infrastructure.

Growth within St. Joseph Island is expected to increase over the duration of the Official Plan. To illustrate historical growth rates for Jocelyn Township, the following table shows population and housing figures from 1996 to 2021. The following table was developed using Statistics Canada's Census data.

Historical Figures	1996	2001	2006	2011	2016	2021
Population	294	298	277	237	313	314
Population Change	N/A	1.3%	-7.6%	-16.9%	24.3%	0.0%
Private Dwellings	N/A	373	346	309	340	360

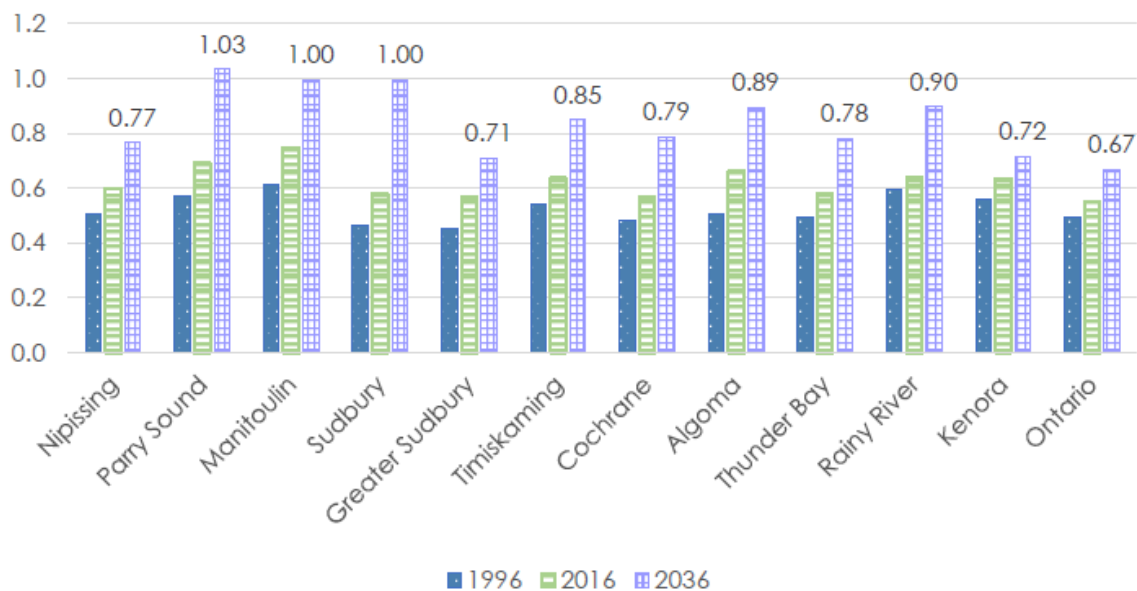
The population of Jocelyn ranges from 294 in 1996 to 314 in 2021. The population has fluctuated significantly with notable increases and decreases. The most recent assessment found no significant change in the population, suggesting a stabilization in the Township's population.

10.1.2 Regional Growth

In 2020 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.

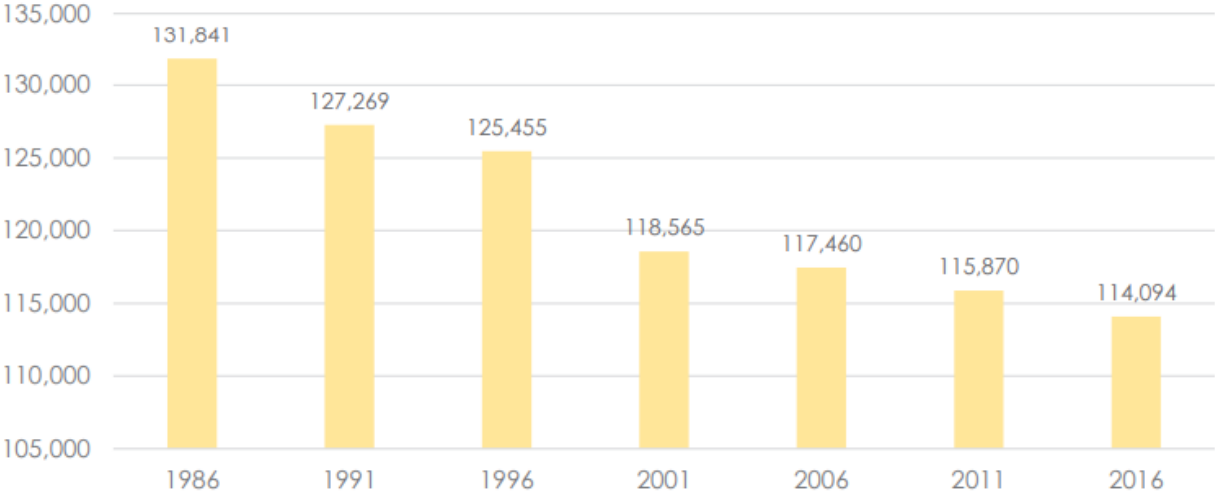
The goal is to achieve a dependency ratio of 0.5. In 1996, every Census District was at or near the goal by 2016; there were no districts that were below and more than half had a ratio in excess of 0.6. The following graph displays the dependency ratio for each Census District in 1996 and 2016 along with a projected ratio for the year 2036.



The Township of Jocelyn is found in the Algoma district, which is expected to reach a dependency ratio of 0.89.

The population trends overall in the Algoma District are in decline. The following graph from the 2019 Northern Projections Algoma District Human Capital Series

report by the Northern Policy Institute, displays the population trends from 1986 to 2016.



The following table, found in the same report, shows historical population and population projections in the Algoma District for the years 2013 to 2041.

Year	Ages 0-19	Ages 20-64	Ages 65+	Total
2013	23,130	69,111	25,359	117,600
2020	21,375	63,165	29,663	114,203
2030	20,486	53,402	36,650	110,538
2041	18,796	50,704	36,727	106,227

The most recent census data from 2021, shows a further decrease in the population, reaching a total of 113,777. According to census data, between 2016 and 2021 a population increase is seen in the population of 65 and older and a decrease within the population of ages 20 to 64; thus, further increasing the dependency ratio.

11

Financial Strategy

Key Insights

- The Township is committing approximately \$338,000 towards capital projects per year from sustainable revenue sources
- Given the annual capital requirement of \$373,000, there is currently a funding gap of \$35,000 annually
- For tax-funded assets, we recommend increasing tax revenues by 0.4% each year for the next 20 years to achieve a sustainable level of funding

11.1 Financial Strategy Overview

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Township of Jocelyn 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
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 Township's approach to the following:

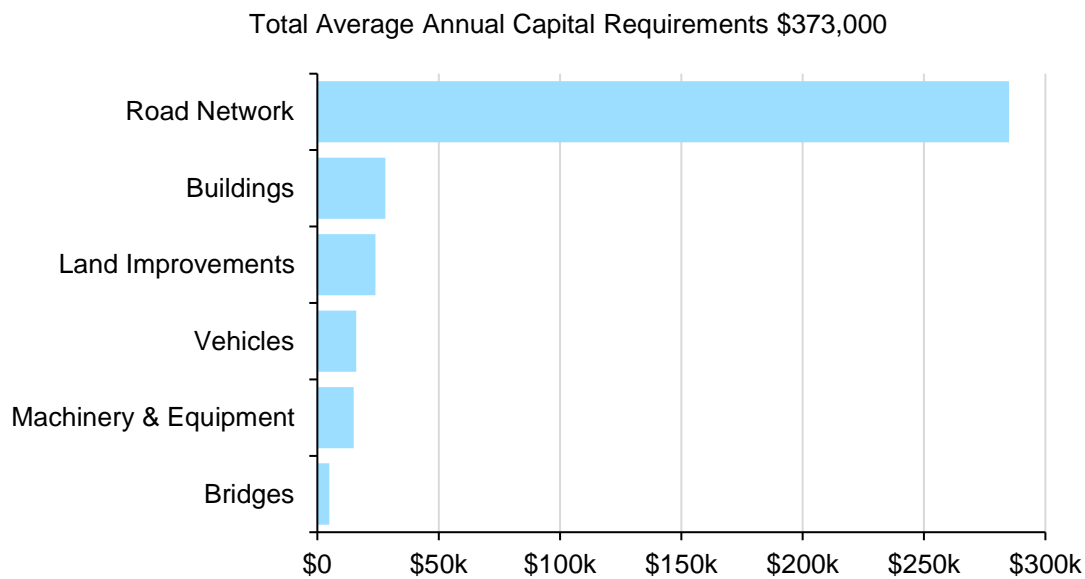
1. In order to reduce financial requirements, consideration has been given to revising service levels downward.

2. All asset management and financial strategies have been considered. For example:
 - a. If a zero-debt policy is in place, is it warranted? If not, the use of debt should be considered.
 - b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.

11.1.1 Annual Requirements & Capital Funding

Annual Requirements

The annual requirements represent the amount the Township should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Township must allocate approximately \$373,000 annually to address capital requirements for the assets included in this AMP.



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

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

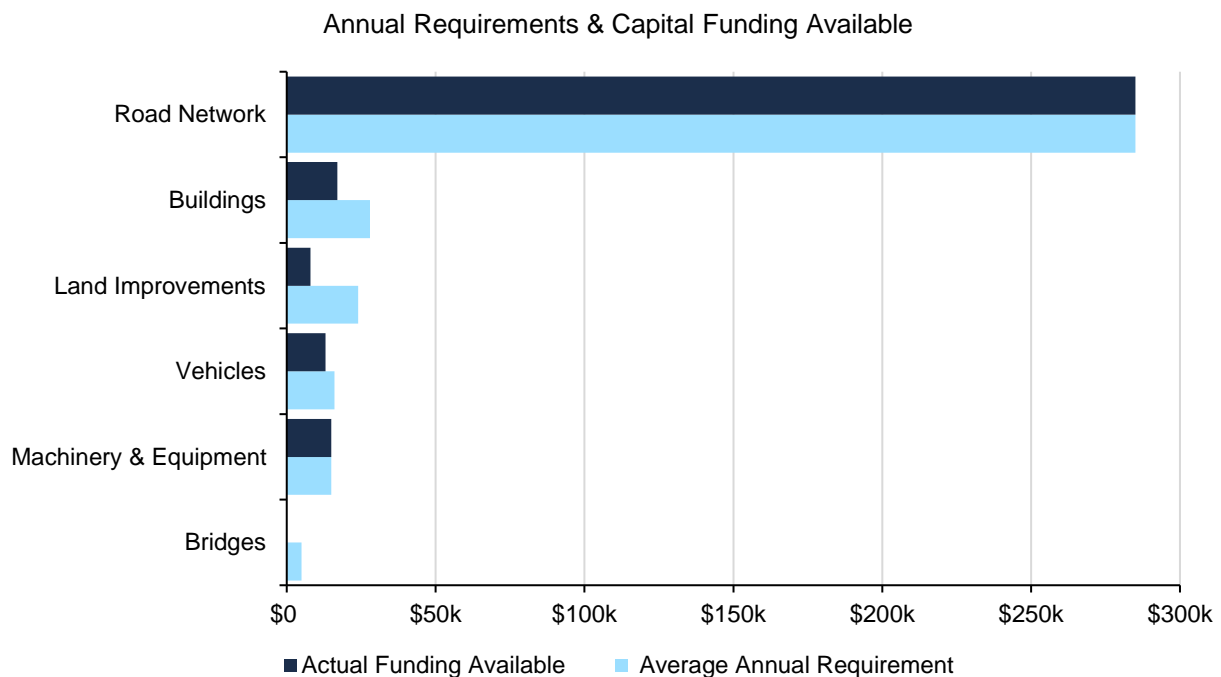
1. **Replacement Only Scenario:** Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.
2. **Lifecycle Strategy Scenario:** Based on the assumption that lifecycle activities are performed at strategic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

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	\$428,000	\$285,000	\$143,000

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of \$143,000 for the road network. This represents an overall reduction of the annual requirements by 31%. As the lifecycle strategy scenario represents the lowest cost option available to the Township, we have used this annual requirement in the development of the financial strategy.

Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$338,000 towards capital projects per year from sustainable revenue sources. Given the annual capital requirement of \$373,000, there is currently a funding gap of \$35,000 annually.



11.2 Funding Objective

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

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

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

11.3 Financial Profile: Tax Funded Assets

11.3.1 Current Funding Position

The following tables show, by asset category, Jocelyn’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	Gas Tax ⁷	OCIF ⁸	Total Available	
Bridges & Culverts	5,000	0	0	0	0	5,000
Facilities & Buildings	28,000	17,000	0	0	17,000	11,000
Land Improvements	24,000	0	8,000	0	8,000	16,000
Machinery & Equipment	15,000	15,000	0	0	15,000	0
Road Network	285,000	173,000	12,000	100,000	285,000	0
Vehicles	16,000	13,000	0	0	13,000	3,000
Total	373,000	218,000	20,000	100,000	338,000	35,000

The average annual investment requirement for the above categories is \$373,000. Annual revenue currently allocated to these assets for capital purposes is \$338,000 leaving an annual deficit of \$35,000. Put differently, these infrastructure categories are currently funded at 91% of their long-term requirements.

11.3.2 Full Funding Requirements

In 2022, Township of Jocelyn has annual tax revenues of \$767,158. 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
Bridges & Culverts	0.7%
Facilities & Buildings	1.4%
Land Improvements	2.1%
Machinery & Equipment	0.0%

⁷ Success criteria for Gas Tax includes a workplan of capital projects that are prioritized and scheduled.

⁸ OCIF is a sustainable funding source that needs to be compliant with O.Reg 588/17. This includes developing and continuously updating the Asset Management Plan.

Road Network	0.0%
Vehicles	0.4%
Total	4.6%

Jocelyn’s formula based OCIF grant is scheduled to remain constant at \$100,000. The table below outlines this concept and presents several options:

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	35,000	35,000	35,000	35,000
Tax Increase Required	4.6%	4.6%	4.6%	4.6%
Annual Tax Increase Required:	0.9%	0.5%	0.3%	0.3%

11.3.3 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 0.3% 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 gas tax and OCIF revenue as outlined previously.
- c) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment⁹.
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.

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

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

11.4 Use of Reserves

11.4.1 Available Reserves

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

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

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

Asset Category	Balance on December 31, 2022
Bridges & Culverts	0
Facilities & Buildings	124,000
Land Improvements	109,000
Machinery & Equipment	62,000
Road Network	208,000
Vehicles	63,000
Total	566,000

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

- 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 allows the scenarios to assume that, if required, available reserve capacity can be used for high priority and emergency infrastructure investments in the short- to medium-term.

11.4.2 Recommendation

In 2025, Ontario Regulation 588/17 will require Jocelyn 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.

12 Appendices

Key Insights

- Appendix A includes a one-page report card with an overview of key data from each asset category
- Appendix B identifies projected 10-year capital requirements for each asset category
- Appendix C includes several maps that have been used to visualize the current level of service
- Appendix D provides a list of low condition assets in each asset category
- Appendix E provides additional guidance on the development of a condition assessment program

Appendix A: Infrastructure Report Card

Asset Category	Replacement Cost (millions)	Asset Condition	Financial Capacity	
Road Network	\$8.8	Fair	Annual Requirement:	\$285,000
			Funding Available:	\$285,000
			Annual Deficit:	\$0
Bridges	\$0.4	Poor	Annual Requirement:	\$5,000
			Funding Available:	\$0
			Annual Deficit:	\$5,000
Buildings	\$1.9	Good	Annual Requirement:	\$28,000
			Funding Available:	\$17,000
			Annual Deficit:	\$11,000
Vehicles	\$23.2	Fair	Annual Requirement:	\$16,000
			Funding Available:	\$13,000
			Annual Deficit:	\$3,000
Machinery & Equipment	\$2.9	Poor	Annual Requirement:	\$15,000
			Funding Available:	\$15,000
			Annual Deficit:	\$0
Land Improvements	\$4.2	Fair	Annual Requirement:	\$24,000
			Funding Available:	\$8,000
			Annual Deficit:	\$16,000
Overall	\$11.6	Fair	Annual Requirement:	\$373,000
			Funding Available:	\$338,000
			Annual Deficit:	\$35,000

Appendix B: 10-Year Capital Requirements

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

Road Network											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Guard Rail	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Paved Roads	\$0	\$0	\$37k	\$0	\$36k	\$0	\$328k	\$0	\$0	\$1.1m	\$1.6m
Unpaved Roads	\$0	\$0	\$0	\$0	\$11k	\$23k	\$84k	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$37k	\$0	\$47k	\$23k	\$412k	\$0	\$0	\$1.1m	\$1.6m

Bridges											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Bridges	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Buildings											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Fire Hall	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Parks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Share Shed	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Town Hall	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18k	\$0	\$0
Township Office	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18k	\$0	\$0

Vehicles

Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Administration	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Machinery & Equipment

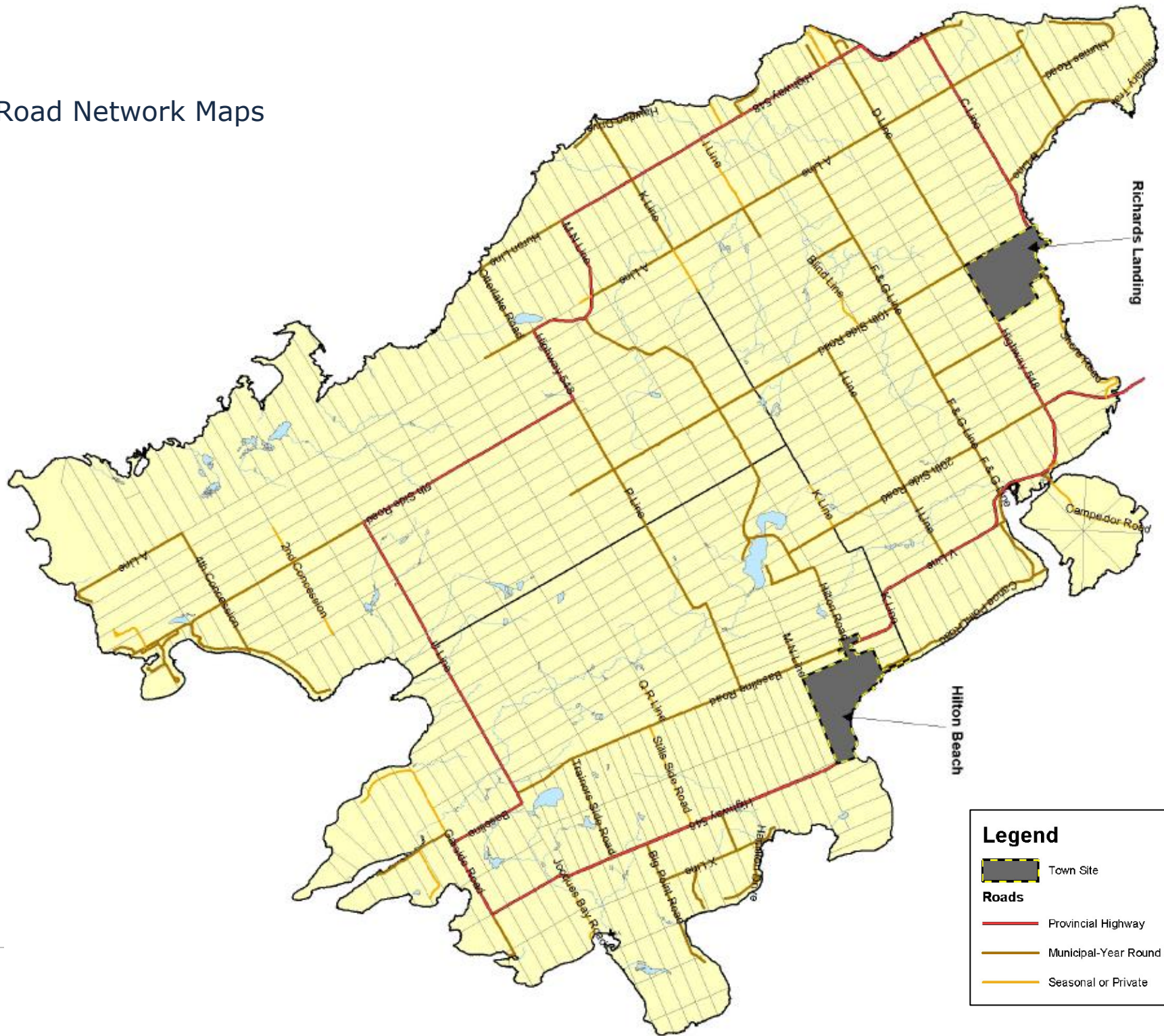
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Environmental Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40k	\$11k	\$0	\$0
Fire Department	\$0	\$0	\$0	\$0	\$0	\$11k	\$0	\$0	\$0	\$7k	\$0
Public Works	\$0	\$0	\$0	\$0	\$22k	\$19k	\$27k	\$0	\$0	\$0	\$13k
Recreation	\$0	\$0	\$0	\$0	\$0	\$21k	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$22k	\$51k	\$27k	\$40k	\$11k	\$7k	\$13k

Land Improvements

Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Fencing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$99k	\$0	\$0
Parking Lots	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$99k	\$0	\$0

Appendix C: Level of Service Maps

Road Network Maps



Images of A Line Bridge (Fair to Good Condition)

North Approach



Downstream Façade



Typical Condition of Road Surface



Typical Condition of Substructure



Deterioration at Guide Rail Attachment



Typical Road Edge Condition



Appendix D: Low Condition Assets

The following tables supply a list of the 5 lowest condition assets in the Township's inventory. This information is based on the data that is currently available and therefore is reliant on the accuracy of the Township's data and information.

Road Network		
Segment	Name	Condition Rating
Paved Roads	4 th Concession West	17.54
Unpaved Roads	2 nd Concession West	25.91
Unpaved Roads	2 nd Concession East	29.88
Unpaved Roads	S and T Road	31.67
Paved Roads	10 th Side Road	31.89

Bridge		
Segment	Name	Condition Rating
Bridge	A Line Bridge	38.89

Buildings		
Segment	Name	Condition Rating
Town Hall	Townhall Well	37.67
Parks	Sawmill – Centennial Grounds	44.83
Parks	School House	45.83
Town Hall	Townhall Addition	47.62
Town Hall	Town Hall	47.83

Vehicles		
Segment	Name	Condition Rating
Fire Trucks	Ford Tanker #19	51.57
Fire Trucks	2002 International Rescue Truck	53.57
Fire Trucks	2011 Fire Truck	71.33

Machinery & Equipment		
Segment	Name	Condition Rating
Protection	Hoses/Fillings	30.83
Administration	Office Furniture	31.25
Protection	Fire Gear	40
Roads	Brush Hog	40.83
Parks	Groomer and tracker	49.17

Land Improvements

Segment	Name	Condition Rating
Environmental	Landfill Wells	28
Administration	Side Road Paved Parking	50.67
Trails	Trail 2010	52.67
Trails	Trial 2009	54.67
Trails	Ski Trail	71.33

Appendix E: Condition Assessment Guidelines

The foundation of good asset management practice is accurate and reliable data on the current condition of infrastructure. Assessing the condition of an asset at a single point in time allows staff to have a better understanding of the probability of asset failure due to deteriorating condition.

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the Township's condition assessment strategy should outline several key considerations, including:

- The role of asset condition data in decision-making
- Guidelines for the collection of asset condition data
- A schedule for how regularly asset condition data should be collected

Role of Asset Condition Data

The goal of collecting asset condition data is to ensure that data is available to inform maintenance and renewal programs required to meet the desired level of service. Accurate and reliable condition data allows municipal staff to determine the remaining service life of assets, and identify the most cost-effective approach to deterioration, whether it involves extending the life of the asset through remedial efforts or determining that replacement is required to avoid asset failure.

In addition to the optimization of lifecycle management strategies, asset condition data also impacts the Township's risk management and financial strategies. Assessed condition is a key variable in the determination of an asset's probability of failure. With a strong understanding of the probability of failure across the entire asset portfolio, the Township can develop strategies to mitigate both the probability and consequences of asset failure and service disruption. Furthermore, with condition-based determinations of future capital expenditures, the Township can develop long-term financial strategies with higher accuracy and reliability.

Guidelines for Condition Assessment

Whether completed by external consultants or internal staff, condition assessments should be completed in a structured and repeatable fashion, according to consistent and objective assessment criteria. Without proper guidelines for the completion of

condition assessments there can be little confidence in the validity of condition data and asset management strategies based on this data.

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project. There are many options available to the Township to complete condition assessments. In some cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure. In other cases, internal staff may have sufficient expertise or training to complete condition assessments.

Developing a Condition Assessment Schedule

Condition assessments and general data collection can be both time-consuming and resource-intensive. It is not necessarily an effective strategy to collect assessed condition data across the entire asset inventory. Instead, the Township should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:

1. **Relevance:** every data item must have a direct influence on the output that is required
2. **Appropriateness:** the volume of data and the frequency of updating should align with the stage in the assets life and the service being provided
3. **Reliability:** the data should be sufficiently accurate, have sufficient spatial coverage and be appropriately complete and current
4. **Affordability:** the data should be affordable to collect and maintain