TOWNSHIP OF NAIRN AND HYMAN

Township of Nairn & Hyman
Asset Management Plan
2022

Approved October 11, 2022

This Asset Management Plan was prepared by:
Empowering your organization through advanced

psdcitywide

asset management, budgeting & GIS solutions

Key Statistics

Replacement cost of asset portfolio

$69 million

Replacement cost of infrastructure per household

$429,764 (2021)

Percentage of assets in fair or better condition

67%

Percentage of assets with assessed condition data

78%

Annual capital infrastructure deficit per household

$7,925

Recommended timeframe for eliminating annual core infrastructure deficit

15 and 20 Years

Target reinvestment rate

2.5%

Actual reinvestment rate

0.7%

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

Contents

Executive Summary

This asset management plan (AMP) for the Township of Nairn & Hyman was developed in accordance with Ontario Regulation 588/17 ("O. Reg"). It includes key elements of an industry-standard and regulation compliant AMP and provides a detailed overview and analysis of the Township's infrastructure. Together, the five asset categories analyzed in this asset management plan have a total current replacement cost of **$69 million**.

The Township's asset portfolio comprises a road network of paved, unpaved, surface treated roadways and supporting roadside infrastructure; municipally owned buildings and facilities; water treatment and distribution network; as well as machinery, equipment, and vehicles to support the Township in the delivery of services. At 75% of the total replacement cost of all infrastructure, roads and roadside assets form the largest share of the Township's asset portfolio and have a current replacement cost of more than $52 million.

Based on both assessed condition and age-based analysis, 67% of the Township's infrastructure portfolio is in fair or better condition, with the remaining 33% in poor or worse condition. Typically, assets in poor or worse condition may require replacement or major rehabilitation in the immediate or short-term. Asset criticality and targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention.

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

We note that with the exception of the Township's roads, buildings, and facilities, which together comprise 78% of total asset value, no in-field condition assessment data was available for other assets. As such, an age-based deterioration curve was used as an approximation of condition for these assets.

Aging assets require maintenance, rehabilitation, and replacement. On average, $1.7 million is required each year to remain current with capital replacement needs for the Township's asset portfolio. This figure relies on age and available condition data. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Average annual funding available totals $0.5 million for all assets. As a result, the Township is currently funding 29% of its annual capital requirements. This creates a total annual funding deficit of $1.2 million. Addressing annual infrastructure funding shortfalls is a difficult and long-term endeavor for municipalities. Considering the Township's current funding position, it will require many years to reach full funding for current assets. Short phase-in periods to meet these funding targets may place too high a burden on taxpayers too quickly, whereas a phase-in period beyond 20 years may see a continued deterioration of infrastructure, leading to larger backlogs.

To close annual deficits for tax-funded assets, we recommend the Township review feasibility of implementing a 4.2% annual increase in revenues over a 20-year phase-in period. Similarly, water rate revenues would need to increase at 1.8% annually over a 15-year phase-in period. Funding scenarios over longer time frames are also presented which may reduce these annual increases.

In addition to annual needs, there is also an infrastructure backlog of $2.8 million, comprising assets that remain in service beyond their estimated useful life. It is highly unlikely that all such assets are in a state of disrepair, requiring immediate replacements or full reconstruction. This makes targeted and consistent condition assessments integral to refining long-term replacement and backlog estimates.

Risk frameworks and levels of service targets can then be used to prioritize projects and help select the right lifecycle intervention for the right asset at the right time—including replacement or full reconstruction. The Township has developed preliminary risk models which are integrated with its asset register. These models are capable of producing risk matrices that classify assets based on their risk profiles.

Most municipalities in Ontario, and across Canada, continue to struggle with meeting infrastructure demands. This challenge was created over many decades and will take many years to overcome. To this end, a number of recommendations should be considered, including:

- continuous and dedicated improvement to the Township's core and non-core infrastructure datasets, which form the foundation for all analysis, including financial projections and needs;
- continuous refinements to the Township's risk and lifecycle models as additional data becomes available. This will aid in implementing risk-based decision-making and result in more strategic long-term capital budgets that are better aligned with the Township's strategic objectives; and
- the preparation for 2025 O. Reg requirements by establishing benchmark levels of service data in order to develop proposed levels of service, develop a financial strategy, and discuss the impact of growth.

The Township has taken important steps in building its asset management program, including developing a more complete and accurate asset register—a substantial initiative. Continuous improvement to this inventory will be essential in maintaining momentum, supporting long-term financial planning, and delivering the highest affordable service levels to the Nairn & Hyman community.

About this document

This asset management plan (AMP) for the Township of Nairn & Hyman was developed in accordance with Ontario Regulation 588/17 ("O. Reg 588/17"). It contains a comprehensive analysis of the Township's infrastructure portfolio. The AMP is a living document that should be updated regularly as additional asset and financial data becomes available.

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. Along with creating better performing organizations, more livable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

See *Appendix B* for a detailed checklist of O. Reg 588/17 requirements.

Table 1 Ontario Regulation 588/17 Requirements and Reporting Deadlines

Requirement	2019	2022	2024	2025
Asset Management Policy	●		●	
Asset Management Plans		●	●	●
State of infrastructure for core assets		●		
State of infrastructure for all assets			●	●
Current levels of service for core assets		●		
Current levels of service for all assets			●	
Proposed levels of service for all assets				●
Lifecycle costs associated with current levels of service		●	●	
Lifecycle costs associated with proposed levels of service				●
Growth impacts		●	●	●
Financial strategy				●

Nairn & Hyman Census Profile

Census Characteristic	Township of Nairn & Hyman	Ontario
Population 2021	373	14,223,942
Population Change 2016-2021	9.1%	5.8%
Total Private Dwellings	215	5,929,250
Population Density	2.3 per km^2	15.9 per km^2
Land Area	159.18 km^2	892,411.76 km^2

Scope

The scope of this AMP includes all requirements for the 2024 reporting deadline, and additional analysis as well as a financial strategy to address any identified annual infrastructure funding shortfalls. Asset categories[1] addressed in this AMP include roads and roadside, water, buildings and facilities, machinery and equipment, and vehicles.

[1] See Appendix D for an asset listing of the Township's asset inventory.

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 and levels of service ratepayers receive from the asset portfolio.

Lifecycle 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.

Key Technical 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.

Lifecycle Management Strategies

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

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

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

Depending on initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation, but at some point, replacement is required. Understanding what effect these activities will have on the lifecycle of an asset, and their cost, will enable staff to make better recommendations. Table 2 provides a description of each type of activity, the general difference in cost, and typical risks associated with each.

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.

Table 2 Lifecycle Management: Typical Lifecycle Interventions

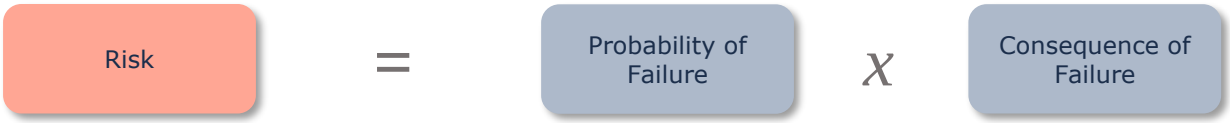
Lifecycle Activity	Description	Cost	Typical Associated Risks
Preventative Maintenance/ Maintenance	Activities that prevent defects or deteriorations from occurring	$	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions; • Diminishing returns associated with excessive maintenance activities, despite added costs; • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	$$	• Useful life may not be extended as expected; • May be costlier in the long run when assessed against full reconstruction or replacement; • Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	$$$	• Incorrect or unsafe disposal of existing asset; • Costs associated with asset retirement obligations; • Substantial exposure to high inflation and cost overruns; • Replacements may not meet capacity needs for a larger population; • Loss or disruption of service, particularly for underground assets;

Risk and Criticality

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

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

Figure 1 Risk Equation



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

Probability of Failure

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

Consequence of Failure

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

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

Table 3 Risk Analysis: Types of Consequences of Failure

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

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

These models have been built in Citywide for continuous review, updates, and refinements. Risk matrices are also generated using these models.

Levels of Service

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

Two levels of service key performance indicators are provided: Community Levels of Service, and Technical Levels of Service. At this stage, LOS that are required under O. Reg for core assets and any additional ones selected by the Township have been included.

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, the province, through O. Reg. 588/17, has mandated qualitative descriptions that are required to be included in this AMP. For non-core asset categories, the Township has defined the current qualitative descriptions that will be used to determine the community level of service by the July 2024 deadline.

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, the province, through O. Reg. 588/17, has also prescribed technical metrics that are required to be included in this AMP. For non-core asset categories, the Township has defined the current technical metrics that will be used to determine the technical level of service by the July 2024 deadline.

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 Municipality. 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.

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 (TRR) the Township can determine the extent of any existing funding gap.

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.

Table 4 Standard Condition Rating Scale

Condition	Pavement Condition Index (PCI)	Age-based (Service Life Remaining %)	Broad Description
Very Good	85-100	80-100	**Fit for the future** Well maintained, good condition, new or recently rehabilitated; no defects or minor defects
Good	70-85	60-80	**Adequate for now** Acceptable, signs of minor to defects and deterioration
Fair	55-70	40-60	**Requires attention** Signs of moderate deterioration and defects, some elements exhibit significant deficiencies
Poor	30-55	20-40	**Increasing potential of affecting service** Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration; significant defects overall
Very Poor	0-30	0-20	**Unfit for sustained service** Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable

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

Age Profile

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

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

A comparison of the weighted average useful life of all segments and their weighted average age has been provided for all categories.

Foundational Documents in Asset Management

In the municipal sector, 'asset management strategy' and 'asset management plan' are often used interchangeably. Other concepts such as 'asset management framework', 'asset management system', and 'strategic asset management plan' further add to the confusion; lack of consistency in the industry on the purpose and definition of these elements offers little clarity. We make a clear distinction between the policy, strategy, and the plan.

Asset Management Policy

An asset management policy represents a statement of the principles guiding the Municipality'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. All municipalities were required to develop and adopt an asset management policy in 2019 in compliance with O. Reg 588/17.

The Township's strategic asset management policy was approved by Council on July 11th, 2019 in accordance with O. Reg 588/17.

The policy provides a foundation for the development of an asset management program within the Township. It covers the key components that define a comprehensive asset management policy:

- The policy statements dictate the use of asset management practices to ensure all assets meet the agreed levels of service in the most efficient and effective manner;
- the policy commits to, where appropriate, integrating the principles found in certain official documents into the asset management plan;
- there are formally defined roles and responsibilities of internal staff and stakeholders;
- the policy statements include the use of a long-term view and effective prioritization in the management of infrastructure; and
- the policy statements are well defined.

As per Ontario Regulation 588/17, the Township will be required to review and update its Strategic Asset Management Policy in 2024.

Asset Management Strategy
An asset management strategy is typically a higher-level document, focusing on business processes and organizational practices. It is a roadmap that includes key initiatives with recommended timelines that lead to higher state of asset management maturity. It is intended to convert the asset management policy from a set of formal, institutionalized, but philosophical commitments into specific actions.

While not a static document, the strategy should not evolve and change frequently—unlike the asset management plan. The strategy provides a long-term outlook on the overall asset management program development and strengthening key elements of its framework.

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

Asset Management Plan
The asset management plan is often identified as a key output within the strategy. The AMP has a sharp focus on the current state of the Township's asset portfolio, and its approach to managing and funding individual service areas or asset groups. It is tactical in nature and provides a snapshot in time.

The strategic plan has a direct, and cascading impact on asset management planning and reporting, making it a foundational element. Many municipalities begin with an asset management plan. However, without the preceding documents, the AMP operates in a vacuum.

The Township's last iteration of the AMP was completed in 2016. Since then, the asset inventory has undergone consolidation of critical asset data and refinements to its assets. This document is an AMP that uses the updated asset data and has been prepared in accordance with O. Reg. 588/17

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.

Nairn & Hyman's Climate Profile

The Township of Nairn & Hyman 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 Nairn & Hyman will likely experience the following trends:

Higher Average Annual Temperature:

1. Between the years 1981 to 2010 the annual average temperature was 4.7 ºC
2. Under a high emissions scenario, the annual average temperatures are projected to be 6.6 ºC by the year 2050 and around 8.8 ºC by the end of the century.

Increase in Average Annual Precipitation:

3. Under a high emissions scenario, Nairn & Hyman is projected to experience a 7% increase in precipitation by 2050 and a 15% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

4. It is expected that the frequency and severity of extreme weather events will change.
5. In some areas, extreme weather events will occur with greater frequency and severity than others.

Integrating Climate Change into 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.

Limitations and Constraints

This AMP required substantial effort by staff. It was developed based on best-available data, and was subject to the following broad limitations, constrains, and assumptions:

1. The analysis in this AMP is highly sensitive to several critical data fields, including an asset's estimated useful life, replacement cost, quantity, and in-service date. Inaccuracies or imprecisions in any of these fields can have substantial and cascading impacts on all reporting and analytics.
2. User-defined and unit cost estimates, based typically on staff judgment, recent projects, or established through completion of technical studies, offer the most precise approximations of current replacement costs. When this isn't possible, historical costs incurred at the time of asset acquisition or construction can be inflated to present day. This approach, while sometimes necessary, and deployed in this AMP for some asset groups, can produce highly inaccurate estimates.
3. In the absence of condition assessment data, age was used to estimate asset condition ratings. This approach can result in an over- or understatement of asset needs. As a result, financial requirements generated through this approach can differ from those produced by staff.
4. Building and Facilities are not effectively componentized into their individual elements, major components, and minor components. These facilities contain thousands of individual assets, including the substructures, shell, interior assets, various electrical, plumbing, HVAC systems, and other complex equipment and furnishings. Each of these assets has its own useful life and replacement cost, and individual condition rating, as well as installation history. Without componentization, the value of condition ratings, age profiles, and long- and short-term forecasts remains limited.
5. The risk models are designed to support objective project prioritization and selection. However, in addition to the inherent limitations that all models face, they also require availability of important asset attribute data to ensure that asset risk ratings are valid, and assets are properly stratified within the risk matrix. Missing attribute data can misclassify assets.

These limitations have a direct impact on most of the analysis presented in this AMP, including condition summaries, age profiles, long-term replacement and rehabilitation forecasts, and shorter term, 10-year forecasts that are generated from Citywide™, the Township's primary asset management system.

These challenges are quite common among municipalities and require long-term commitment and sustained effort by staff. As the Township's asset management program evolves and advances, the quality of future AMPs and other core documents that support asset management will continue to increase.

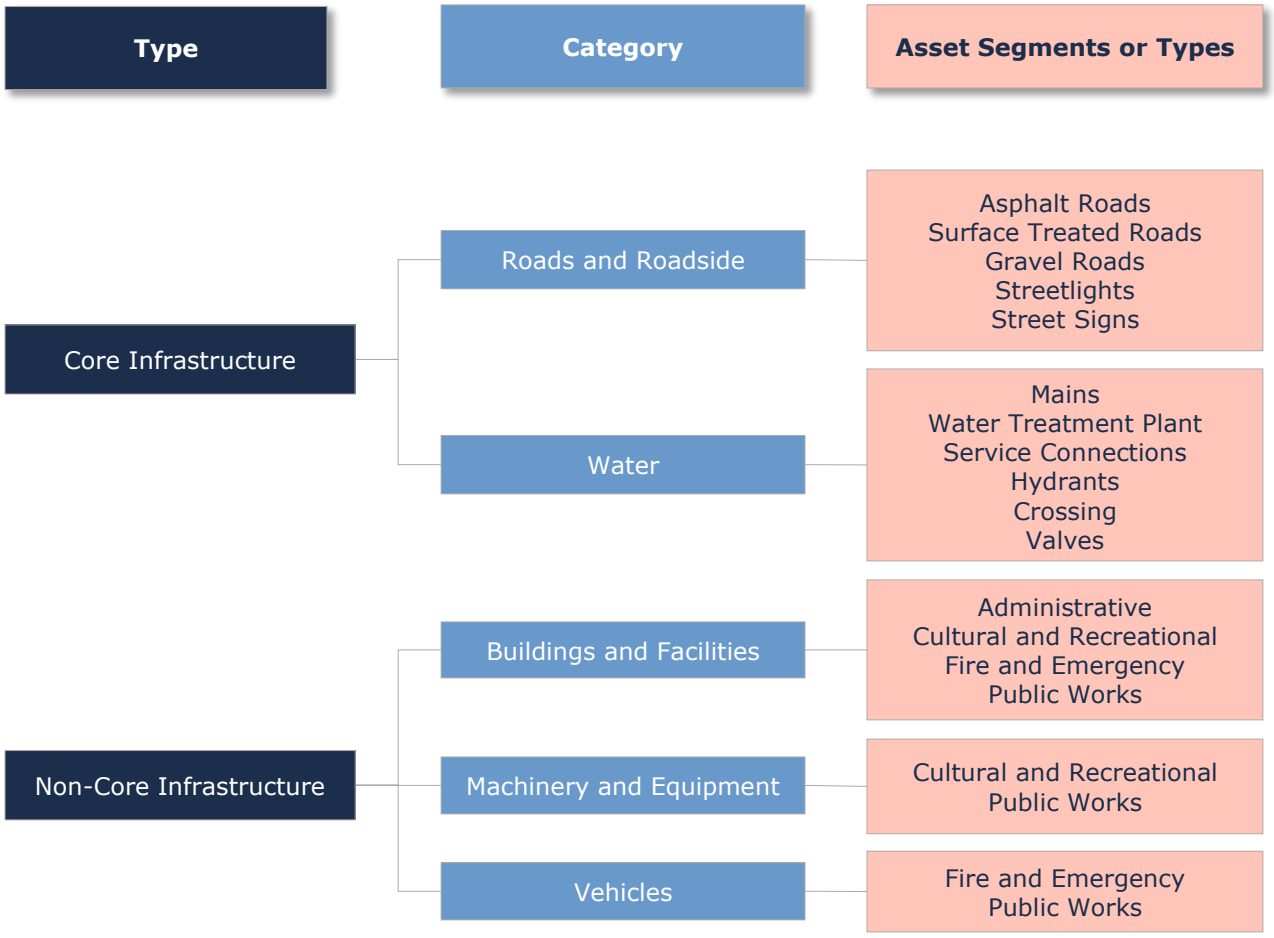
State of the Infrastructure

The state of the infrastructure (SOTI) summarizes the inventory, condition, age profiles, and other key performance indicators for the Township's infrastructure portfolio. Figure 2 illustrates how assets were classified within the infrastructure data hierarchy. Most reporting and analysis is presented at the segment level.

Asset Hierarchy and Data Classification

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

Figure 2 Asset Hierarchy and Data Classification

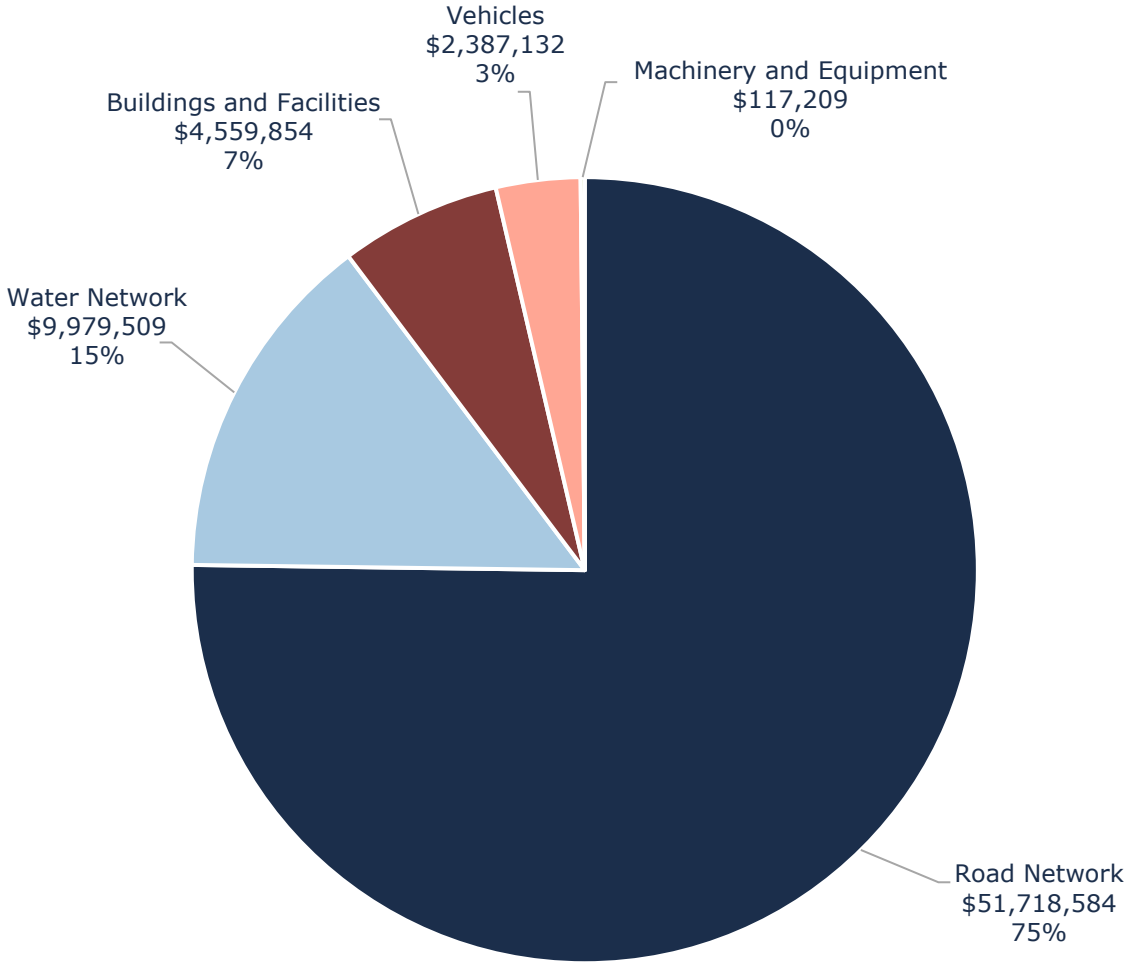


Portfolio Overview

The five asset categories analyzed in this asset management plan have a total current replacement cost of $69 million. This estimate was calculated using user-defined costing, as well as inflation of historical or original costs to current date. See Appendix A for a summary of critical data for each asset category.

Figure 3 illustrates the replacement cost of each asset category; at 75% of the total portfolio and with a current replacement cost of around $52 million, roads and roadside assets form the largest share of the Township's asset portfolio, followed by water assets at 15%.

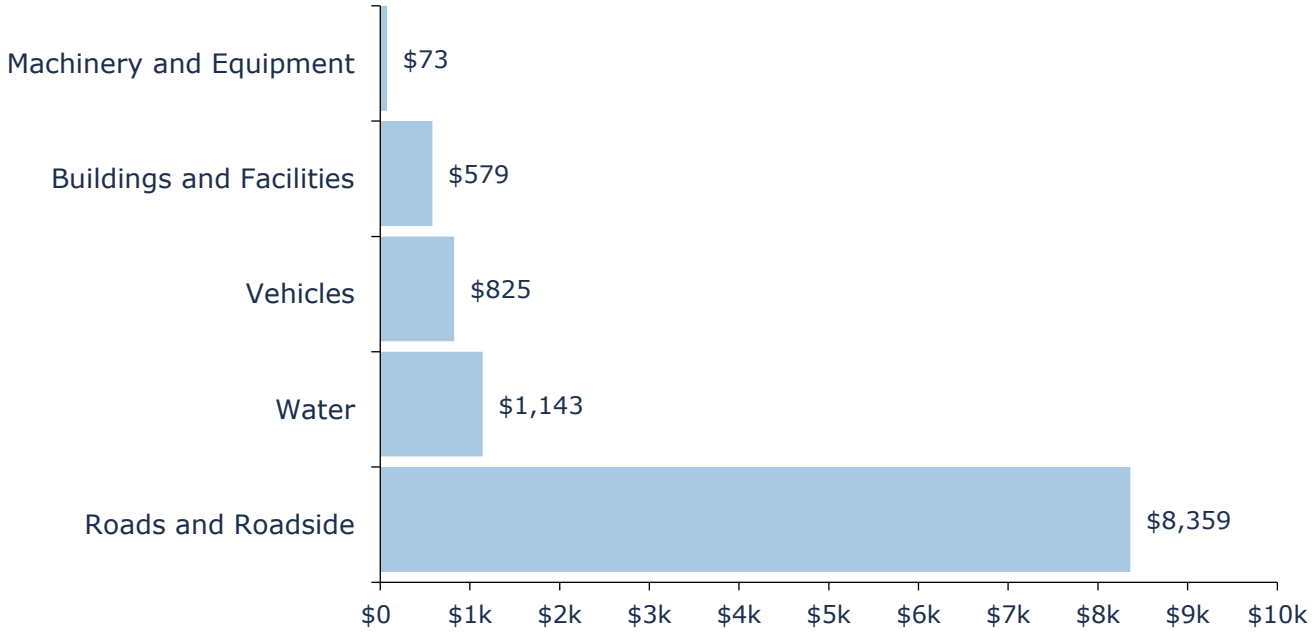
Figure 3 Current Replacement Cost by Asset Category



Total Current Replacement Cost: $68,762,288

Error! Reference source not found.4 summarizes the average annual capital r equirements per household. Household data was retrieved from the 2021 Statistics Canada Census. The total number of households used to calculate the annual capital requirements per household values was 160 for all categories.

Figure 4 Average Annual Capital Infrastructure Requirements Per Household



Condition Data

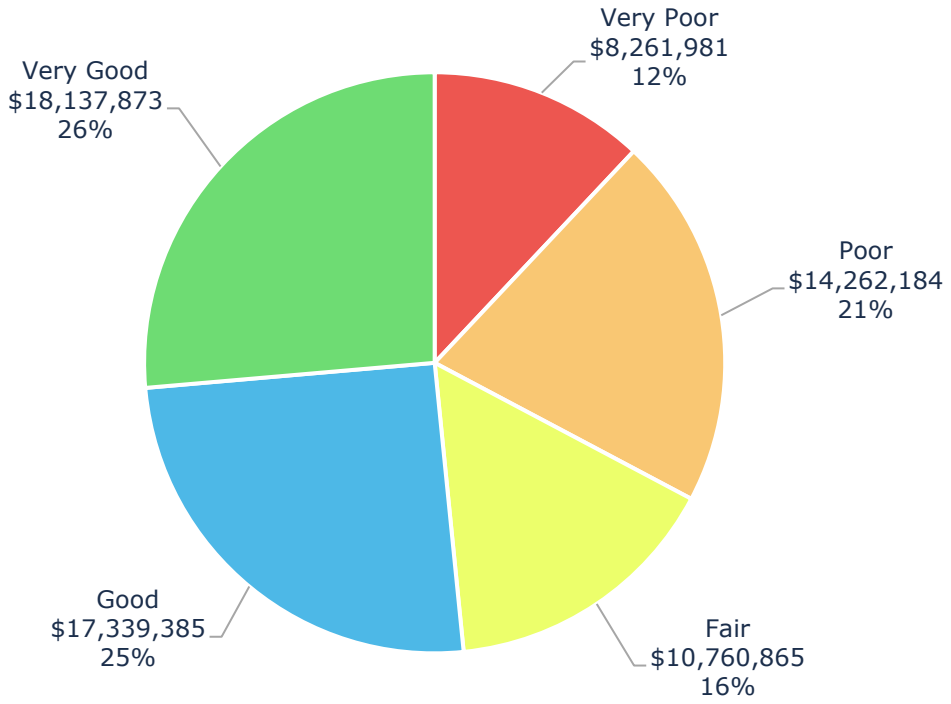
Figure and Figure summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition and age-based analysis, 67% of the Township's infrastructure portfolio is in fair or better condition, with the remaining 33% in poor or worse condition. Typically, assets in poor or worse condition may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

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

We note that with the exception of the Township's roads, buildings, and facilities, which together comprise 78% of total asset value, no in-field condition assessment data was available for other assets. As such, age was used as an approximation of condition for these assets.

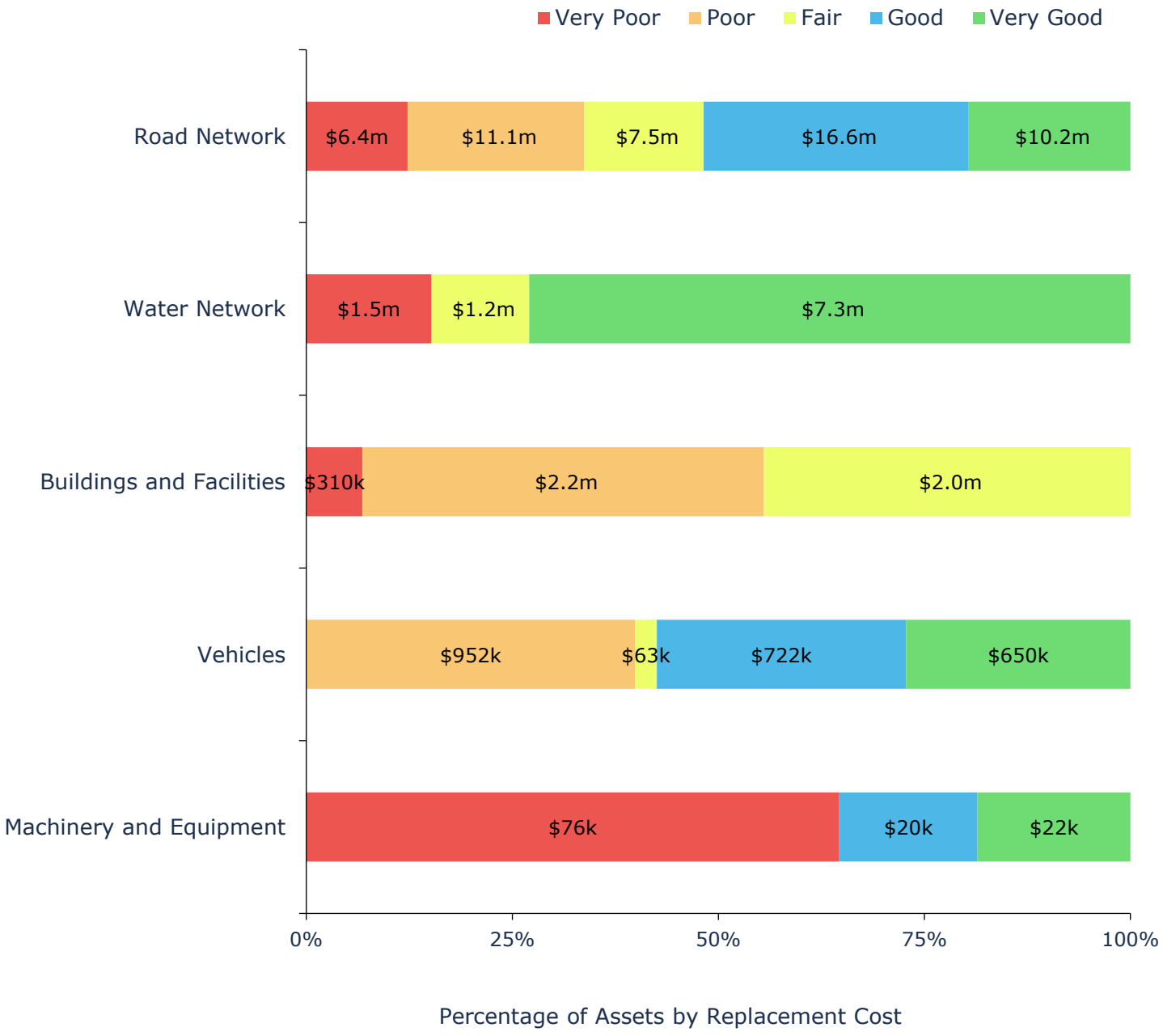
Further, when assessed condition data was available, it was projected to current year (2022). This 'projected condition' can generate lower condition ratings than those established at the time of the condition assessment. The rate of this deterioration will also depend on lifecycle curves used to project condition over time.

Figure 5 Asset Condition – Portfolio Overview



As further illustrated in Figure , the majority of the infrastructure is in fair or better condition, based on in-field condition assessment data for roads, buildings, and facilities. However, as no condition data was available for other essential assets such as water, machinery, equipment, and vehicles, age was used to approximate asset condition. See Table 6 Source of Condition Data for details on how condition data was derived for each asset segment.

Figure 6 Asset Condition – By Asset Category



Source of Condition Data

This asset management plan relies on assessed condition for 78% of assets, based on and weighted by replacement cost. For the remaining assets, aged 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.

Table 6 Source of Condition Data

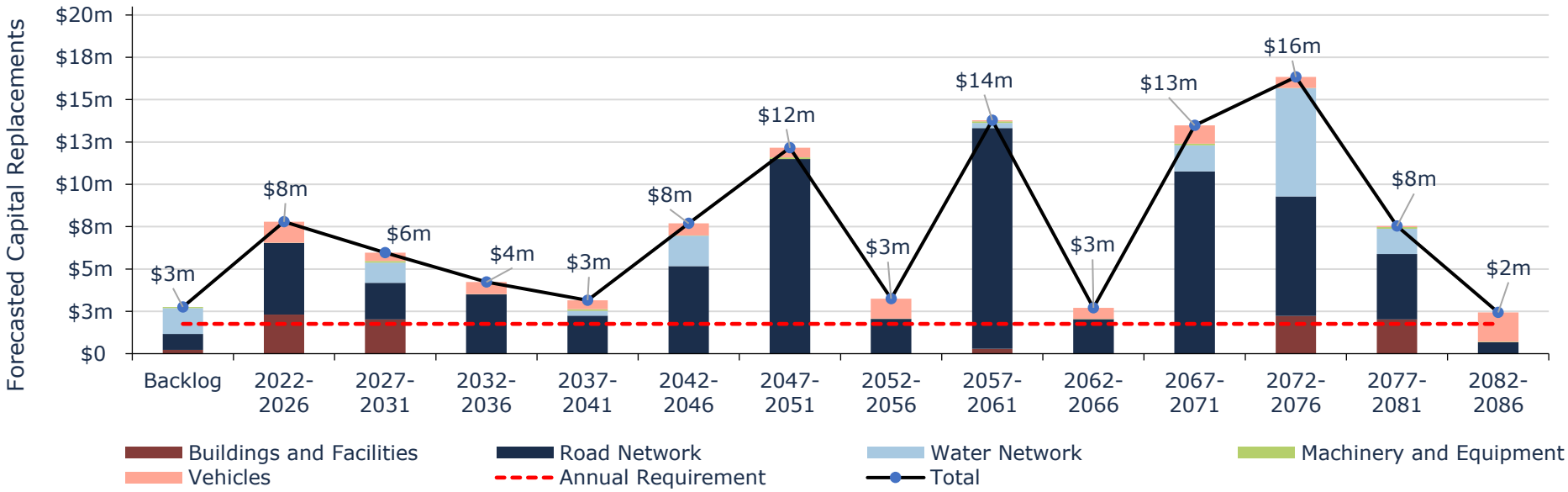
Asset Category	Segment	% Of Assets with Assessed Condition	Source
Roads and Roadside	Asphalt Roads	99%	Township Staff
	Surface Treated Roads	100%	
	Gravel Roads	100%	
	All other segments	0%	Age-based estimates only
Water	All segments	0%	Age-based estimates only
Buildings and Facilities	Administrative	100%	Township Staff
	Cultural and Recreational	100%	
	Fire and Emergency	100%	
	Public Works	59%	
Vehicles	All segments	0%	Age-based estimates only
Machinery and Equipment	All segments	0%	Age-based estimates only
	Total	**78%**	

Forecasted Long-term Replacement Needs

Aging assets require maintenance, rehabilitation, and replacement. Figure below illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for all asset categories analyzed in this AMP. On average, $1.7 million is required each year to remain current with capital replacement needs for the Township's asset portfolio (red dotted line). Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. This figure relies on age and available condition data. Based on the current replacement cost of the portfolio, estimated at $69 million, this represents an annual target reinvestment rate of 2.5%.

The chart also illustrates a backlog of $3 million, comprising assets that remain in service beyond their estimated useful life. It is unlikely that all such assets are in a state of disrepair, requiring immediate replacements or major renewals. This makes targeted and consistent condition assessments integral. Risk frameworks, proactive lifecycle strategies, and levels of service targets can then be used to prioritize projects, continuously refine estimates for both backlogs and ongoing capital needs and help select the right treatment for each asset.

Figure 7 Capital Replacement Needs – Portfolio Overview 2022-2086



Risk Matrix

Using the risk equation and preliminary risk models, **Error! Reference source not found.** shows how assets across the different asset categories are stratified within a risk matrix.

Figure 8 Risk Matrix: All Assets

Consequence	1	2	3	4	5
5	0 Assets $0	0 Assets $0	2 Assets $2,232,391	1 Asset $1,471,982	1 Asset $1,080,519
4	7 Assets $2,931,370	2 Assets $809,471	2 Assets $1,056,800	1 Asset $650,000	0 Assets $0
3	13 Assets $2,617,090	1 Asset $221,903	3 Assets $515,077	1 Asset $151,101	2 Assets $495,275
2	25 Assets $1,748,145	0 Assets $0	1 Asset $63,027	0 Assets $0	3 Assets $274,078
1	69 Assets $10,841,268	11 Assets $16,617,482	123 Assets $7,485,200	4 Assets $11,088,000	134 Assets $6,412,109

Probability

The analysis shows that based on current risk models, 9% of the Township's assets, with a current replacement cost of approximately $5.9 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates and were considered to be most essential to the Township.

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

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

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

Roads and Roadside

The Township's roads and roadside assets comprises the largest share of its infrastructure portfolio, with a current replacement cost of more than $51 million, distributed primarily between asphalt and surface treated roads. The Township also owns and manages other supporting infrastructure, including culverts, streetlights, street signs as well as municipal facilities, vehicles, machinery, and equipment that support the Township in the delivery of transportation services.

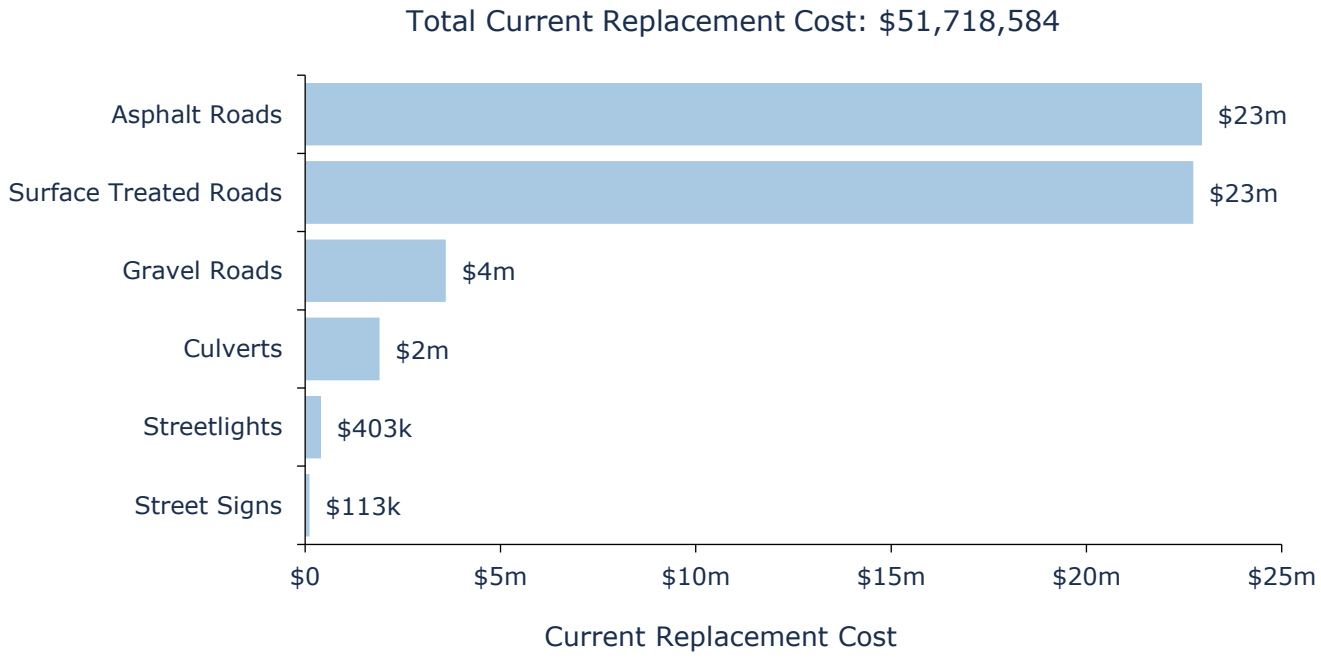
Inventory and Valuation

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

Table 7 Detailed Asset Inventory – Roads and Roadside

Segment	Quantity	Unit of Measure	Replacement Cost
Roads	28	km	$49,297,800
Paved - Asphalt	10	km	$22,960,000
Paved - Surface Treated	15	km	$22,736,000
Unpaved - Gravel	3	km	$3,601,800
Culverts	127	Assets	$1,905,000
Streetlights	81	Assets	$402,594
Street Signs	176	Assets	$113,190
		Total	**$51,718,584**

Figure 9 Category Valuation – Roads and Roadside



Asset Condition

Figure summarizes the replacement cost-weighted condition of the Township's roads and roadside assets. Based on a combination of field inspection data and age, 66% of assets are in fair or better condition; the remaining 34% of assets are in poor or worse condition. Informal condition assessments conducted by Township staff were available for 100% of roads, based on replacement cost.

This condition data was projected from inspection date to current year to estimate their condition today. No condition data was available for the remaining asset types, requiring age-based approximations.

Assets in poor or worse condition may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As illustrated in Figure , the majority of the Township's roads and roadside assets are in poor or worse condition.

Figure 10 Asset Condition – Roads and Roadside: Overall

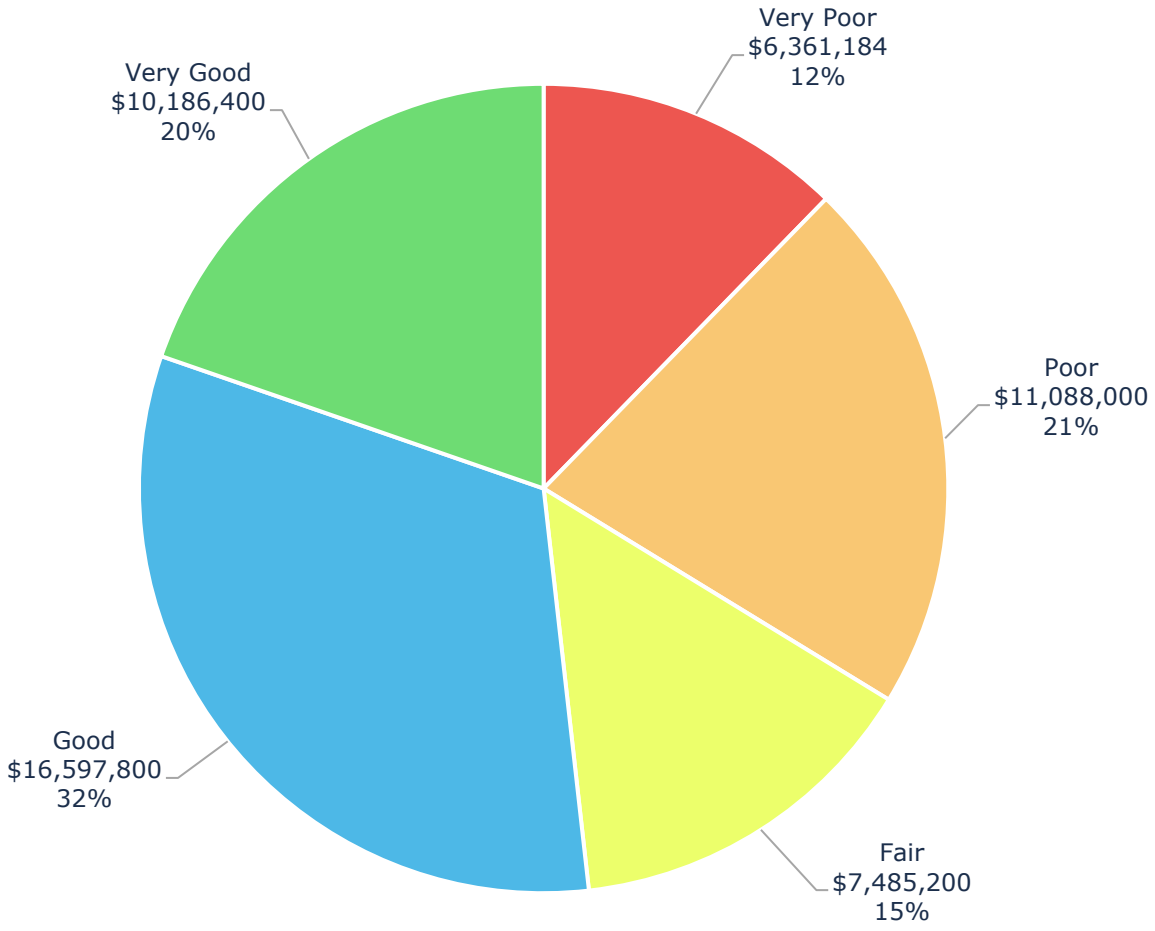


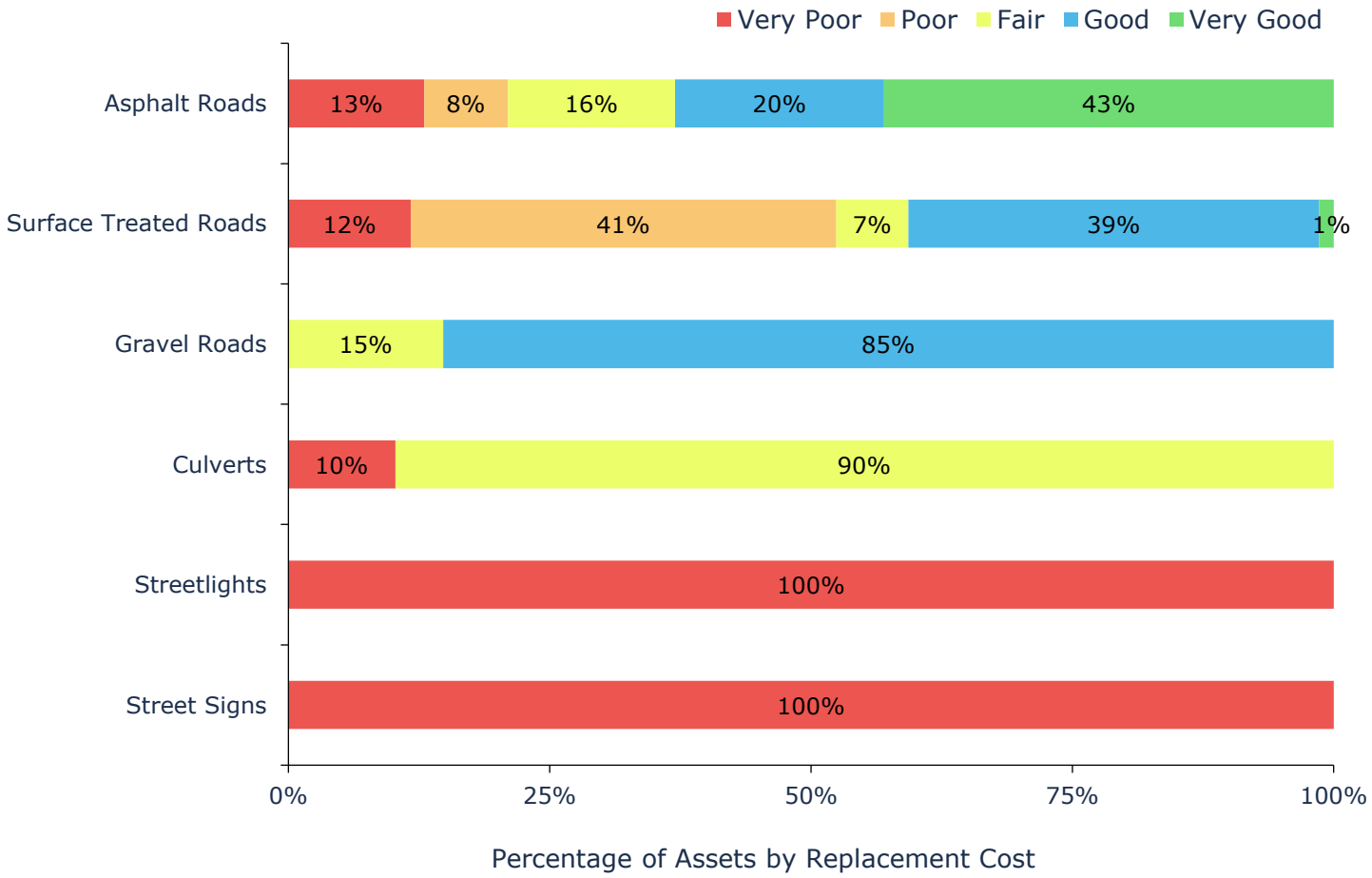
Table 8 summarizes the current average condition, the average service life remaining and the estimated useful life for each asset segment. The average condition is a weighted value based on the current replacement cost.

Table 8 Asset Condition by Segment – Roads and Roadside

Segment	Estimated Useful Life (Years)	Service Life Remaining (Years)	Average Condition
Roads	20 - 75	18.8	61% (Fair)
Paved - Asphalt	25 (surface)	10.3	67% (Fair)
Paved - Surface Treated	20 (surface)	14.4	53% (Fair)
Unpaved - Gravel	20 (surface)	63.8	71% (Good)
Culverts	50	4.8	48% (Fair)
Streetlights	10 - 20	-6.1	0% (Very Poor)
Street Signs	17 - 20	-22.1	0% (Very Poor
	Overall	**0.3**	**60% (Fair)**

As illustrated in Figure 4, based on condition assessments, the majority of the Township's roads are in fair or better condition.

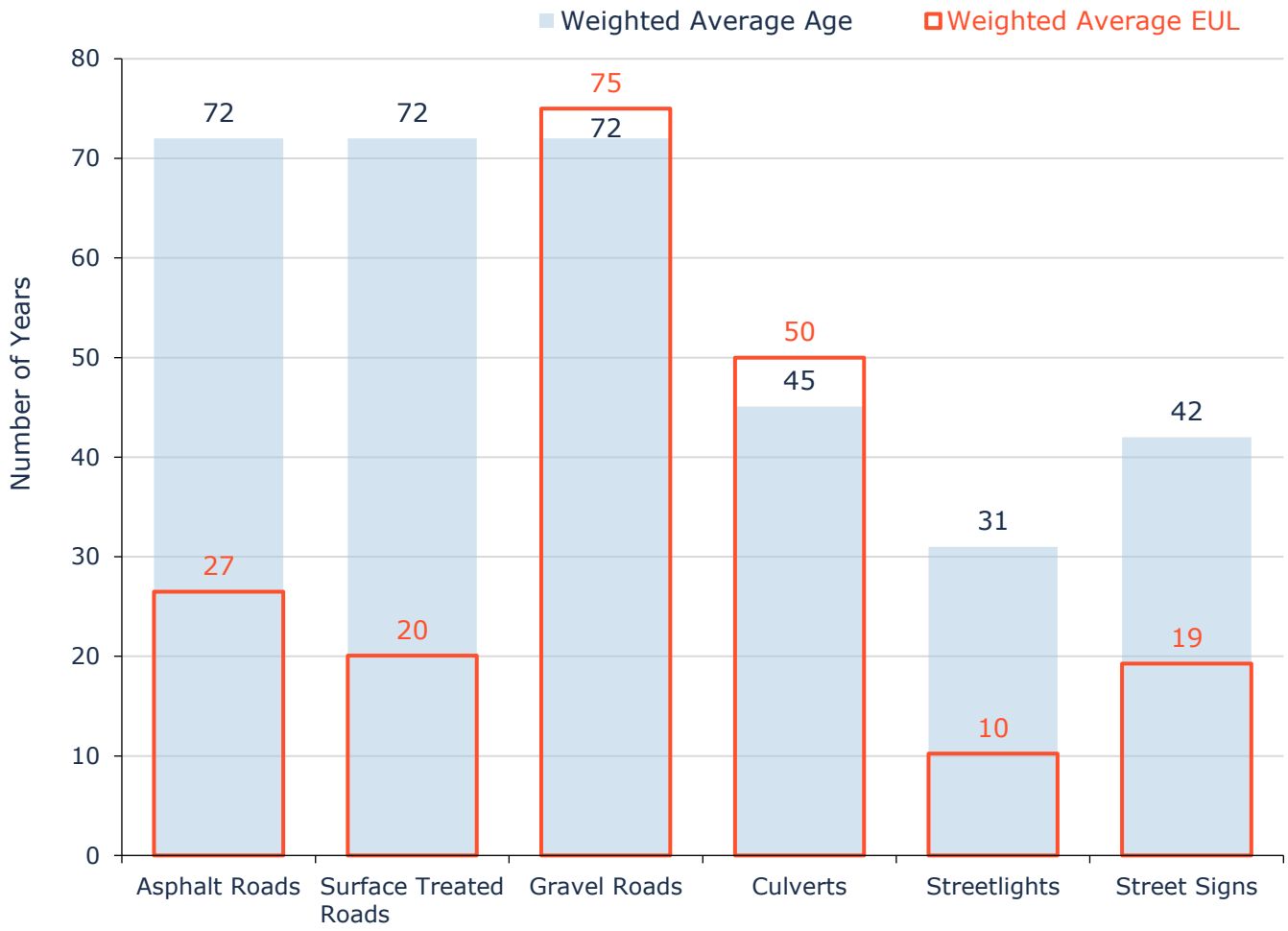
Figure 4 Asset Condition – Roads and Roadside: By Segment



Age Profile

Figure 5 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Figure 5 Estimated Useful Life vs. Asset Age – Roads and Roadside



The analysis shows that, based on in-service dates, asphalt and surface treated roads continue to remain in operation beyond their expected useful life, with an average age of 72 years against an average expected serviceable life of 20 to 25 years for the surface layer. Condition assessments should be used to identify potential candidates for potential repair, renewal, or replacements.

Although age analysis is important, we do note that roads needs studies and pavement condition reports provide a much more accurate summary of road condition than average age, which is influenced by in-service dates, how road assets are treated within an accounting and financial reporting framework, and the useful life assigned.

Current Approach to Lifecycle Management

This section outlines the Township's current approach to managing its road assets. Key data was collected through staff discussions. As applicable, lifecycle models were also built in Citywide. These can be used by staff for ongoing reference and planning within the Township's asset management program. These models should be continuously refined and updated with new data as it becomes available.

Roads

A roads needs study (RNS) has been completed by an external consultant in the past for all paved and unpaved road sections. As part of the study, a pavement condition index (PCI) was calculated based on distress quantity, type, and severity. Staff formally conduct road patrols every 2 weeks and as needed informally; granular roads are also visually inspected during grading activities.

Condition assessments, staff judgment, traffic loads, and opportunity to bundle projects with water asset requirements (water) help inform the optimal lifecycle intervention that range from pothole repairs to potential rehabilitation.

Pothole repairs are completed annually based on deficiencies identified through regular road patrols and feedback from the public. Gravel roads are regraded multiple times a year, particularly in rural cottage areas.

Summer maintenance activities include grading, re-gravelling, applying dust suppressant, ditching, roadside mowing, tree trimming, brush cleanup, road sign maintenance, and line painting. Winter maintenance activities include snow plowing, salting, and snow removal.

Preventative maintenance treatments like crack sealing are conducted on as-needed basis on selected road sections. Rehabilitative activities include mill and paving, asphalt overlaying, single and double surface treatments. On average, around 1-2 km of roads are resurfaced every other year. Roads are rehabilitated based on the results of road patrols, visual inspections and additional factors like growth, health and safety and social impact.

Road reconstruction projects (base and surface layers) are prioritized through road condition, risk, sub-surface asset requirements, consideration of growth, health and safety and social impact. Additional factors also include the type of traffic, for instance Old Nairn Road is primarily used by logging trucks and experiences increased deterioration, serving as a possible candidate for road widening and reconstruction.

Table summarizes the Township's current lifecycle strategy for its asphalt roads and includes the state of the asset that may trigger the event (i.e., condition or age). Major rehabilitation and replacements are guided by both ride condition ratings and sub-surface asset requirements.

Table 9 Current Lifecycle Management Strategies – Asphalt Roads

Event Name	Event Class	Event Range / Trigger
General Maintenance	Maintenance	As needed
Crack Sealing	Preventative Maintenance	Condition: 85 - 95
Single Surface Treatment	Rehabilitation	Condition: 65 - 85
Base Repairs and 40mm Asphalt Overlay	Rehabilitation	Condition: 40 - 55
Asset Reconstruction	Replacement	Condition: 25

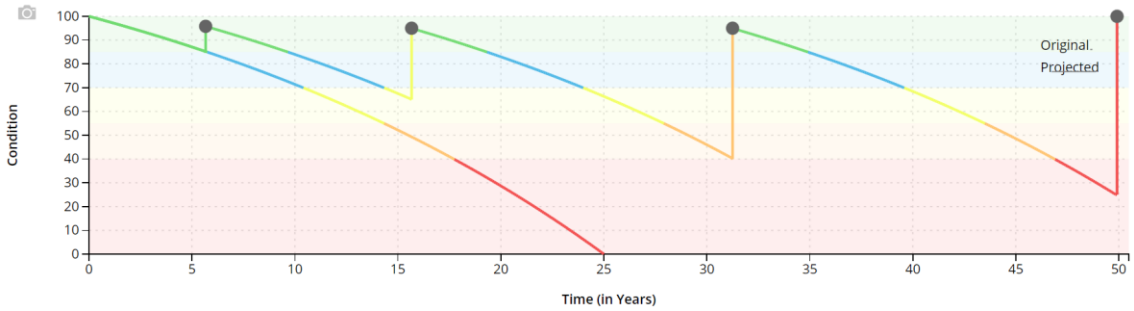


Table summarizes the Township's current lifecycle strategy for its surface treated roads and includes the state of the asset that may trigger the event (i.e., condition or age). Major rehabilitation and replacements are guided by both ride condition ratings and sub-surface asset requirements.

Table 10 Current Lifecycle Management Strategies – Surface Treated Roads

Event Name	Event Class	Event Range / Trigger
General Maintenance	Maintenance	As needed
Single Surface Treatment	Rehabilitation	Condition: 65 - 85
Double Surface Treatment	Rehabilitation	Condition: 35 - 65
G/ST Rehabilitation	Rehabilitation	Condition: 20 - 35
Asset Reconstruction	Replacement	Condition: 20

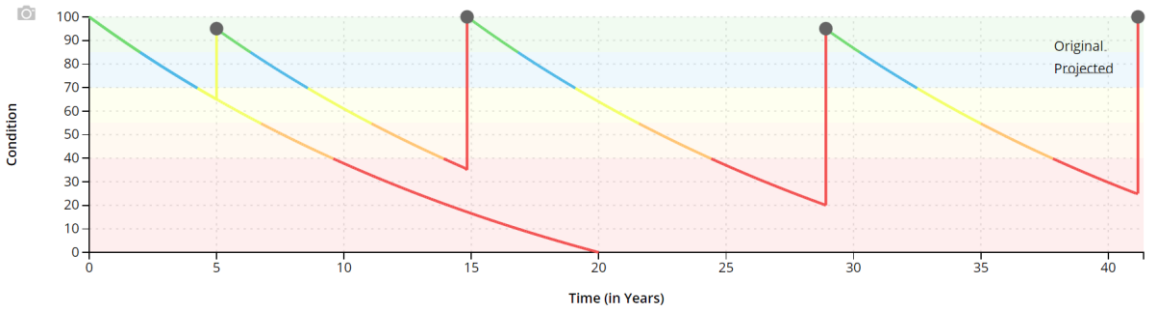
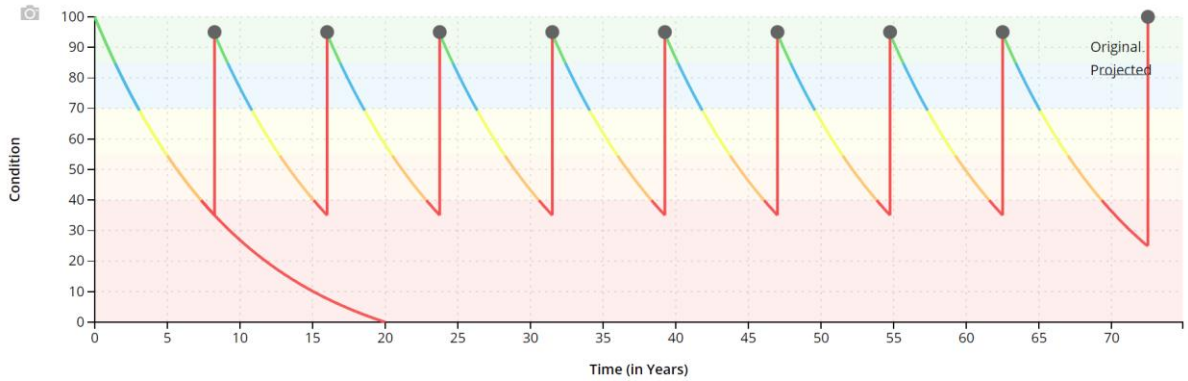


Table summarizes the Township's current lifecycle strategy for its gravel roads and includes the state of the asset that may trigger the event (i.e., condition or age). Major rehabilitation and replacements are guided by both ride condition ratings and sub-surface asset requirements.

Table 11 Current Lifecycle Management Strategies – Gravel Roads

Event Name	Event Class	Event Range / Trigger
General Maintenance	Maintenance	As needed
Dust Control/Suppressant	Maintenance	Annually (localized)
G/ST Rehabilitation	Rehabilitation	Condition: 35 - 55
Asset Reconstruction and/or Asset Surface Upgrade	Replacement	Condition: 25



The above noted strategies illustrate the importance of maintenance and rehabilitation, extending the serviceable life of both asphalt and surface treated surfaces. Although staff indicated that each activity is typically completed only once before the next, more invasive treatment is applied, the strategy may benefit from integration of planned or forecasted replacements of water mains. This may require multiple applications of a maintenance or rehabilitation treatment to bundle and synchronize the road section's eventual replacement with sub-surface asset requirements.

Culverts

Culvert repairs and replacements are completed annually based on deficiencies identified through regular road patrols and feedback from the public.

Streetlights and Street Signs

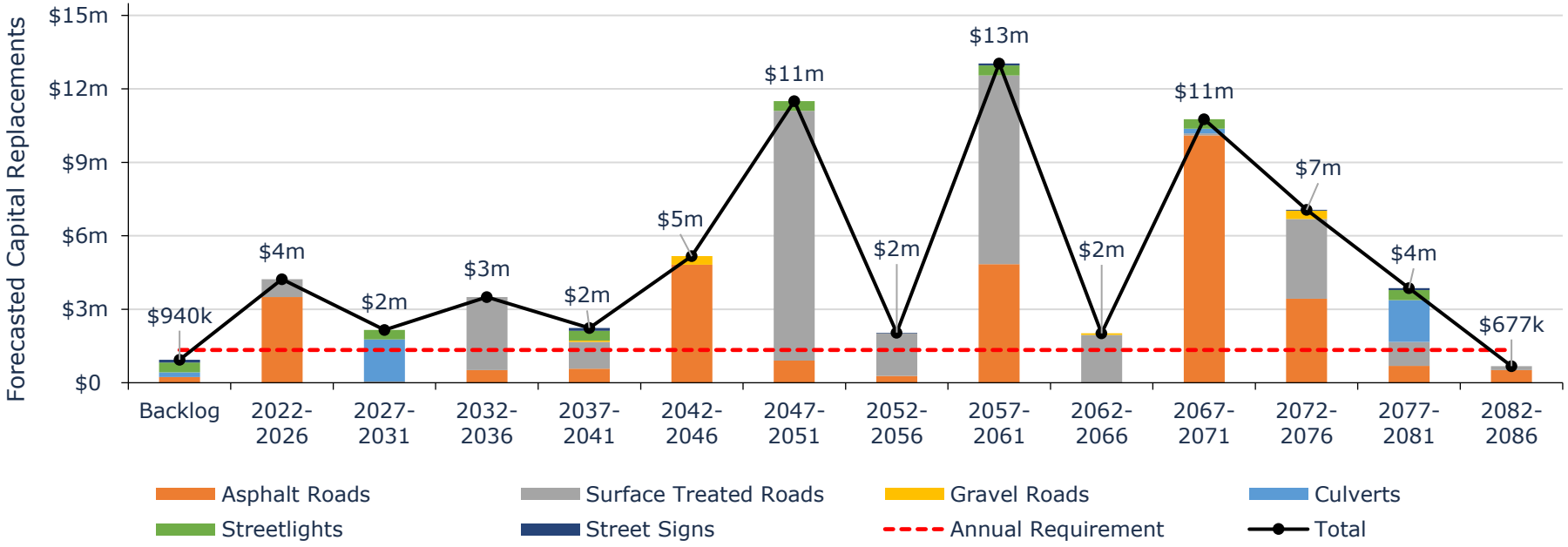
Streetlights and street signs are inspected as per O. Reg. 239/02, and undergo repairs and replacements based on road patrols and feedback from the public.

Forecasted Long-term Replacement Needs

Figure 6 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's roads and roadside. This analysis was run until 2086 to capture at least one iteration of replacement for the longest-lived asset in the asset register. The Township's average annual requirements (red dotted line) total $1.3 million for all assets in the roads and roadside category. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. The chart illustrates substantial capital needs through the 2047 to 2061 forecast period.

It also shows a backlog $0.9 million, comprising assets that have reached the end of their useful life. The projections are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades. They are based on asset replacement costs, age analysis, condition data when available, as well as lifecycle modeling (roads only). The lifecycle modeling included preventative maintenance, general maintenance, and rehabilitative activities.

Figure 6 Forecasted Capital Replacement Requirements – Roads and Roadside 2022-2086



Often, the magnitude of capital needs is substantially higher than most municipalities can afford to fund. It is also unlikely that all assets will need to be rehabilitated or fully reconstructed as forecasted above. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. Regular pavement condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

System-generated 10-Year Replacement Forecast

The table below summarizes the projected cost of capital lifecycle activities (rehabilitation and replacements) that may be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register. They can be different from actual capital forecasts. Consistent data updates, particularly condition, replacement costs, and regular upkeep of lifecycle models, will improve the alignment between the system generated expenditure requirements, and the Township's capital expenditure forecasts.

Table 12 System-generated 10-Year Capital Replacement Forecast – Roads and Roadside

Segment	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Asphalt Roads	$2,755,200	$0	$105,000	$240,000	$0	$0	$399,000	$0	$0	$0
Surface Treated Roads	$3,015,100	$0	$122,500	$0	$20,000	$5,000	$42,500	$0	$55,000	$0
Gravel Roads	$0	$0	$60,000	$0	$0	$0	$0	$0	$0	$345,000
Culverts	$0	$0	$0	$0	$0	$0	$0	$1,710,000	$0	$0
Streetlights	$0	$0	$0	$0	$0	$0	$0	$0	$0	$392,684
Street Signs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$5,770,300**	**$0**	**$287,500**	**$240,000**	**$20,000**	**$5,000**	**$441,500**	**$1,710,000**	**$55,000**	**$737,684**

Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, traffic data (volume and speed limit), land use, and road class. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

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

Figure 7 Risk Matrix – Roads and Roadside

Consequence	1	2	3	4	5
5	0 Assets $0	0 Assets $0	0 Assets $0	0 Assets $0	0 Assets $0
4	3 Assets $8,265,600	3 Assets $11,356,800	2 Assets $1,681,600	1 Asset $9,251,200	1 Asset $2,665,600
3	2 Assets $1,607,200	5 Assets $4,611,200	3 Assets $2,256,800	2 Assets $1,377,600	3 Assets $2,525,600
2	1 Asset $313,600	2 Assets $629,800	4 Assets $1,836,800	1 Asset $459,200	2 Assets $459,200
1	0 Assets $0	0 Assets $0	114 Assets $1,710,000	0 Assets $0	125 Assets $710,784

Probability

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

- missed opportunities for cost savings and increases in lifecycle costs;
- misallocation of funds leading to over- or under-investments;
- deferral of vital projects, or further lending and borrowing;
- accelerated asset deterioration and premature failure, which may lead to public health and safety hazards, and disruption of services to the Township's residential and commercial base;
- a decline in public satisfaction with the Township's service standards and the resulting reputational damage;

Figure 15 provides an overview of the different data points and allocations utilized to determine the risk rating for each road and roadside asset.

Figure 15 Risk Rating Criteria – Roads and Roadside

Probability of Failure (POF)		**Consequence of Failure (COF)**	
Paved Roads			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (85%)	Asset Condition	Direct Financial (70%)	Asset Replacement Cost
Operational (15%)	Service Life Remaining	Operational (15%)	Road Class
		Strategic (10%)	AADT
Unpaved Roads			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (85%)	Asset Condition	Direct Financial (70%)	Asset Replacement Cost
Operational (15%)	Service Life Remaining	Operational (15%)	Road Class
		Strategic (10%)	AADT
All Other Assets			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (85%)	Asset Condition	Direct Financial (80%)	Asset Replacement Cost
Operational (15%)	Service Life Remaining	Strategic (20%)	Asset Type

Levels of Service

The tables that follow summarize the Township's current levels of service with respect to prescribed KPIs under Ontario Regulation 588/17.

Table 13 Ontario Regulation 588/17 Community Levels of Service – Roads and Roadside

<table>
<tr><th>Service Attribute</th><th>Qualitative Description</th><th>Current Level of Service (2021)</th></tr>
<tr><td>Scope</td><td>Description, which may include maps, of the road network in the Municipality and its level of connectivity</td><td>The Township's road network spans a total of 28 km primarily within a rural setting, with areas of semi-urban development. The road network consists of approximately 10 km of high class bituminous (HCB) roads, 15 km of low class bituminous (LCB) roads and 3 km of unpaved roads. The road network also contains other roadside appurtenances such as culverts, streetlights, and street signs.

The overall road network is comprised of two areas that are located along Highway 17; the local roads that make up the Nairn Centre Townsite and the Sand Bay Road system that would include local roads around the Spanish River and out to the Sand Bay Village on Agnew Lake.</td></tr>
<tr><td>Quality</td><td>Description or images that illustrate the different levels of road class pavement condition.</td><td>Every road section receives a pavement condition index (PCI) rating (0-100).

The rating incorporates pavement roughness measurements and surface distresses (type, quantity, severity).

Ratings are categorized into 5 general qualitative descriptors as detailed below:
<table>
<tr><th>PCI Label</th><th>PCI Range</th></tr>
<tr><td>Excellent</td><td>85-100</td></tr>
<tr><td>Good</td><td>70-85</td></tr>
<tr><td>Fair</td><td>55-70</td></tr>
<tr><td>Poor</td><td>30-55</td></tr>
<tr><td>Very Poor</td><td>0-30</td></tr>
</table></td></tr>
</table>

Table 5 Ontario Regulation 588/17 Technical Levels of Service – Roads and Roadside

Service Attribute	Qualitative Description	Current Level of Service (2021)
Scope	Lane-km of arterial roads per land area (km/km^2)	0 (km/km^2)
	Lane-km of collector roads per land area (km/km^2)	0 (km/km^2)
	Lane-km of local roads per land area (km/km^2)	0.33 (km/km^2)
Quality	Average pavement condition for paved roads in the Municipality	55% - Fair
Performance	Average surface condition for unpaved roads in the Municipality (e.g., excellent, good, fair, poor)	Good
	Actual capital reinvestment rate	0.7%
	Target capital reinvestment rate	2.5%
	Operating costs for unpaved (loose top) roads per Lane-km	Relevant information not available at this time; staff will have this ready for the next iteration of the AMP

Water

The Township's water asset inventory includes mains, service connections, hydrants, valves, crossings, and a treatment facility that comprise a total current replacement cost of more than $9 million. It is the second highest value category in the Township's asset portfolio. The majority of the assets were installed in the mid-1990s, and as such most of the network is still early in its service life.

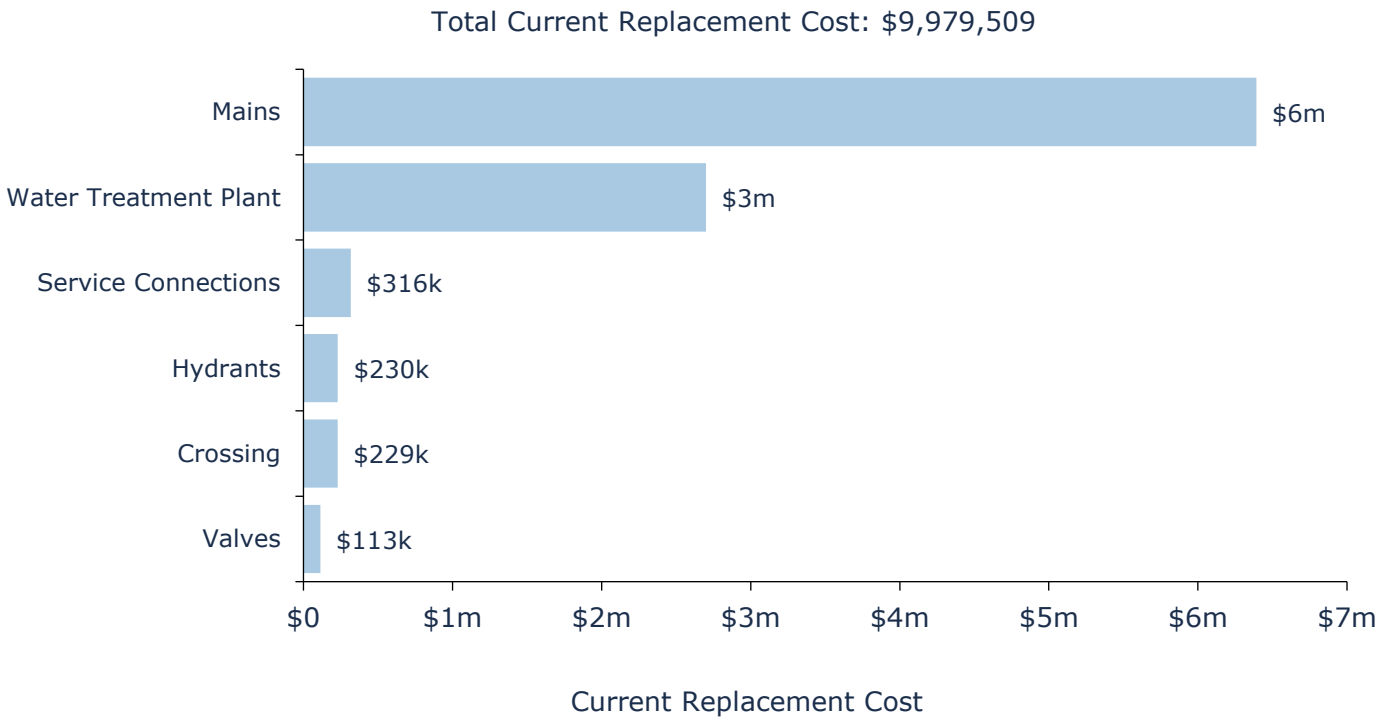
Inventory and Valuation

Table 6 summarizes the quantity and current replacement cost of all water distribution and treatment assets available in the Township's asset register. At 64% of the portfolio, water mains comprise the largest share of water assets.

Table 6 Detailed Asset Inventory – Water

Segment	Quantity	Unit of Measure	Replacement Cost
Mains	6	Kilometers	$6,391,215
Treatment Plant	7	Assets	$2,699,773
Service Connections	23	Assets	$316,405
Hydrants	23	Assets	$230,000
Crossing	5	Assets	$229,152
Valves	15	Assets	$112,964
		Total	**$9,979,509**

Figure 32 Category Valuation – Water Infrastructure



Asset Condition

Figure 3 summarizes the replacement cost-weighted condition of the Township's water infrastructure portfolio. Based only on age data, 27% of assets are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Figure 33 Asset Condition – Water Infrastructure: Overall

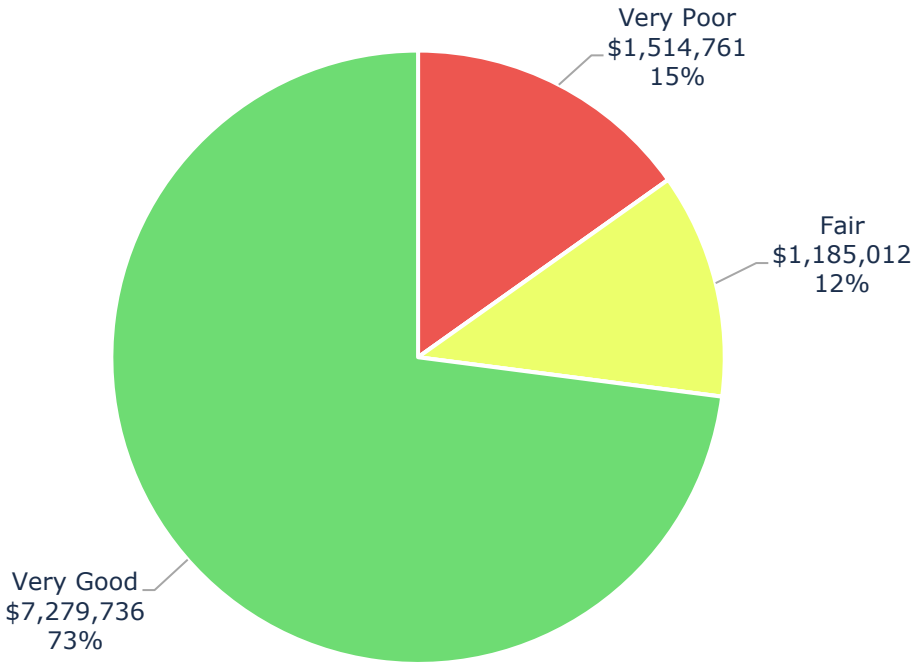


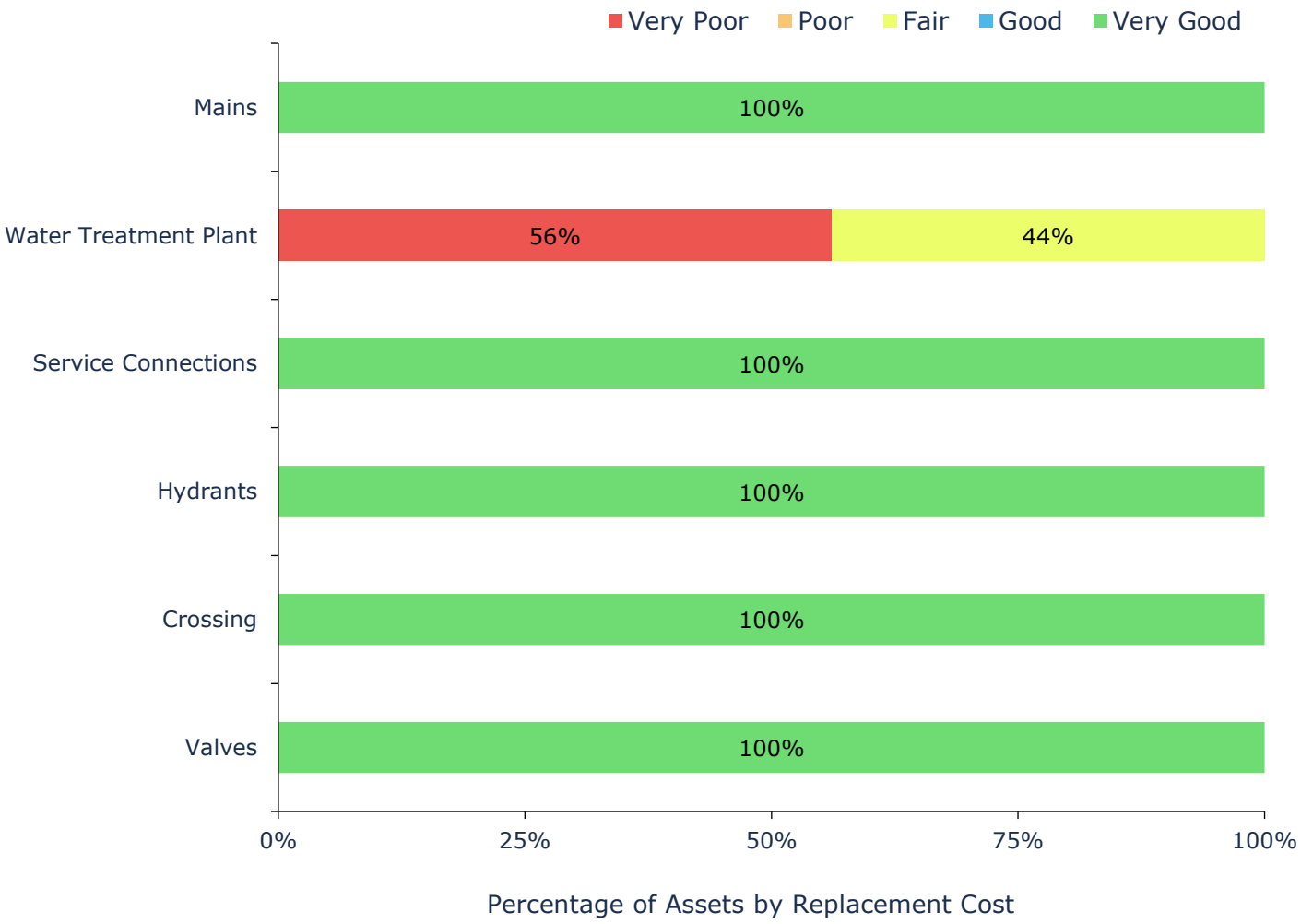
Table 28 summarizes the current average condition, the average service life remaining and the estimated useful life for each asset segment. The average condition is a weighted value based on the current replacement cost.

Table 28 Asset Condition by Segment – Water Infrastructure

Segment	Estimated Useful Life (Years)	Service Life Remaining (Years)	Average Condition
Mains	80	53.4	94% (Very Good)
Treatment Plant	20 - 50	-2.9	26% (Poor)
Service Connections	75	47.6	93% (Very Good)
Hydrants	50	22.5	84% (Very Good)
Crossing	50	22.5	84% (Very Good)
Valves	50	22.5	84% (Very Good)
	Overall	**37.3**	**75% (Good)**

Figure 3 summarizes the age-based condition of water infrastructure by each segment. The analysis shows that the majority of each water infrastructure segment is in fair or better condition. We note that water treatment facilities are not componentized. Without sufficient componentization, condition data for major components and elements of various facilities may remain hidden.

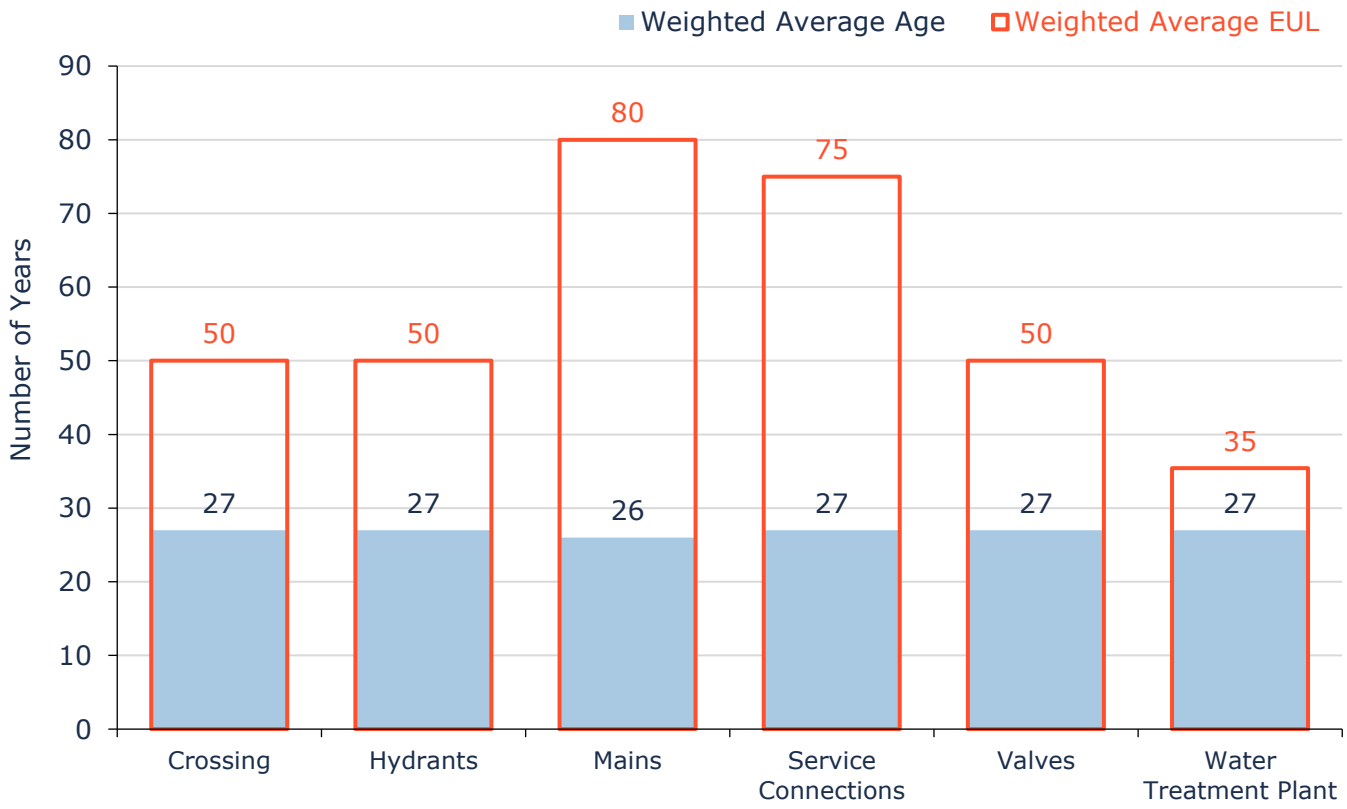
Figure 34 Asset Condition – Water Infrastructure: By Segment



Age Profile

Figure 8 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Figure 8 Estimated Useful Life vs. Asset Age – Water Infrastructure



Age analysis reveals that, on average, most of the water assets in the earlier stages of their life. However, assets that represent the water treatment plant are approaching their end of life. Facilities have hundreds to thousands of individual element and components. As noted previously, water treatment facilities are not componentized. In the absence of componentization, age analysis was only possible at the site level, rather than at the major element or component level.

Current Approach to Lifecycle Management

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

Apart from the inspections required under O. Reg. 170/03: Drinking Water Systems, the Township also conducts an annual inspection of all water assets. The Ontario Clean Water Agency (OCWA) also provides the Township with multi-year forecasts on recommended maintenance, rehabilitative and replacement activities that are further reviewed by staff.

Mains, Service Connections, Crossings

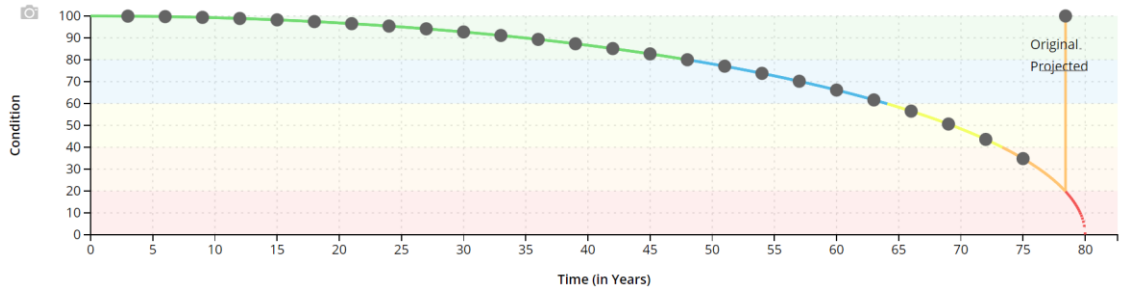
Water mains are assessed on as-needed basis and often in coordination with road and/or sub-surface construction projects. Staff rely on asset age, pipe material and diameter, location, and available CCTV assessments to determine the projected condition of water mains.

Water mains also undergo spot repair and main replacement is generally coordinated with road and/or sub-surface capital projects, but critical asset data like main breaks, main location, age, pipe material and diameter are also factored into the prioritization process. In the absence of mid-lifecycle rehabilitative events, most mains are simply maintained with the goal of full replacement once it reaches its end-of-life.

Table 29 summarizes the Township's current lifecycle strategy for its water mains and includes the state of the asset that may trigger the event (i.e., condition or age). Capital replacements are guided by a multitude of factors, including but not limited to the coordination between road reconstruction and other sub-surface asset requirements.

Table 29 Current Lifecycle Management Strategies – Water Mains

Event Name	Event Class	Event Range / Trigger
Valve Maintenance	Maintenance	Annually
Directional Flushing	Maintenance	Annually
Hydrant Flushing	Maintenance	Annually
Asset Replacement	Replacement	Condition: 20



Hydrants and Valves
OCWA maintains all hydrants throughout the Township and conducts routine maintenance that includes inspections and flushing. Fire hydrants are typically painted every 3-5 years. Valves undergo routine maintenance that includes inspections, cleaning, and valve exercising.

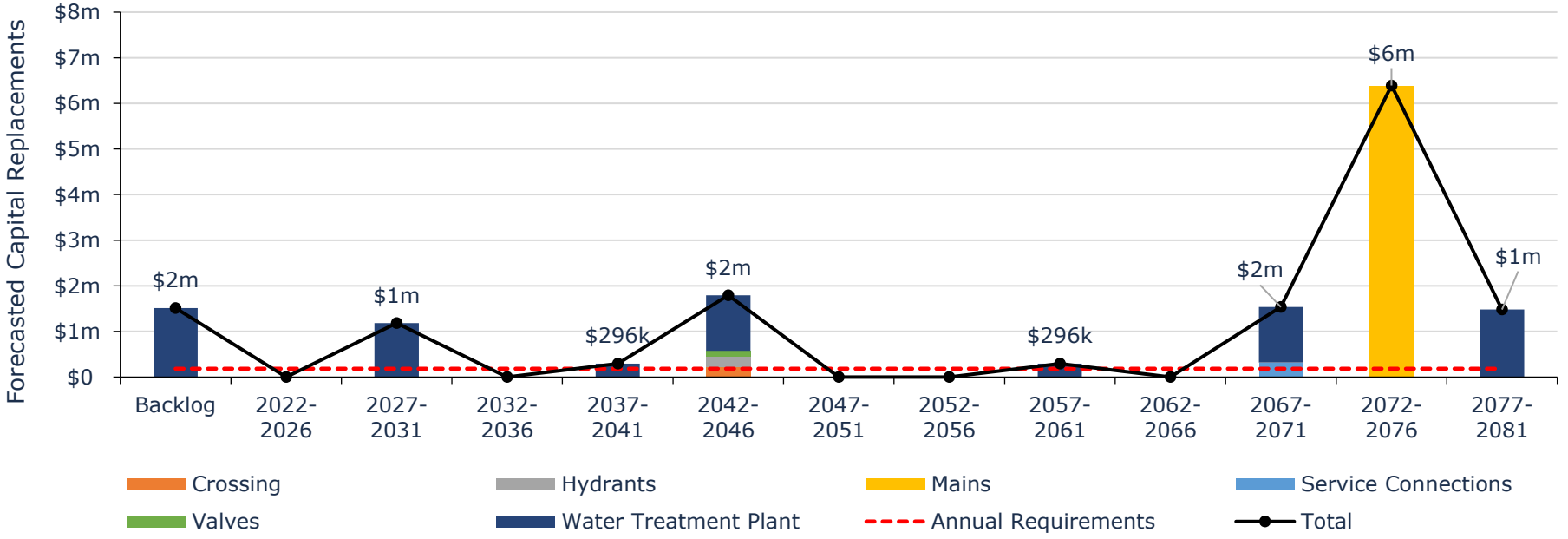
Treatment Plant
Water facilities are managed in partnership with OCWA, who conduct annual inspections and provide the Township with annual reports, as well as multi-year capital and operating forecasts. Every year the Township discusses capital budget needs for capital repairs to items such as pump replacements, facility repairs, and pump station repairs.

Forecasted Long-term Replacement Needs

Figure 9 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's water asset portfolio. This analysis was run until 2081 to capture at least one iteration of replacement for the longest-lived asset in the asset register. The Township's average annual requirements (red dotted line) total $0.2 million for all water assets. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Given the lengthy useful life for watermains, replacement needs are forecasted to remain relatively flat, and below $5 million per 5-year interval until the 2070s. At this point, replacement needs will rise rapidly, peaking at more than $5 million between 2072 and 2076. The chart also illustrates an age-based backlog of $0.2 million, dominated by water treatment plant assets. These projections and estimates are based on current asset records, their replacement costs, and age analysis only. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 96 Forecasted Capital Replacement Requirements – Water Infrastructure - 2022-2081



It is highly unlikely that all assets will require replacements as forecasted, particularly given the potential for coordinating projects with road work. However, a review of useful life estimates, break histories, as well as componentization and condition assessment of the water treatment plant may help uncover hidden needs and help refine backlog estimates.

System-generated 10-Year Replacement Forecast

The table below summarizes the projected cost of lifecycle activities (capital replacement only) that will need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register, which was limited to asset age, replacement cost, and useful life. In addition, as treatment facilities are not componentized, no element- or component-level replacement needs could be forecasted.

Table 7 System-generated 10-Year Replacement Forecast – Water Infrastructure

Segment	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Treatment Plant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,185,012
Service Connections	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Crossing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Valves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,185,012**

Risk Analysis

The risk matrix below is generated using available asset data for linear water assets, including service life remaining, replacement costs, asset location, pipe material, and diameter. The risk ratings for non-linear assets were calculated using only age, service life remaining, asset type, and replacement costs.

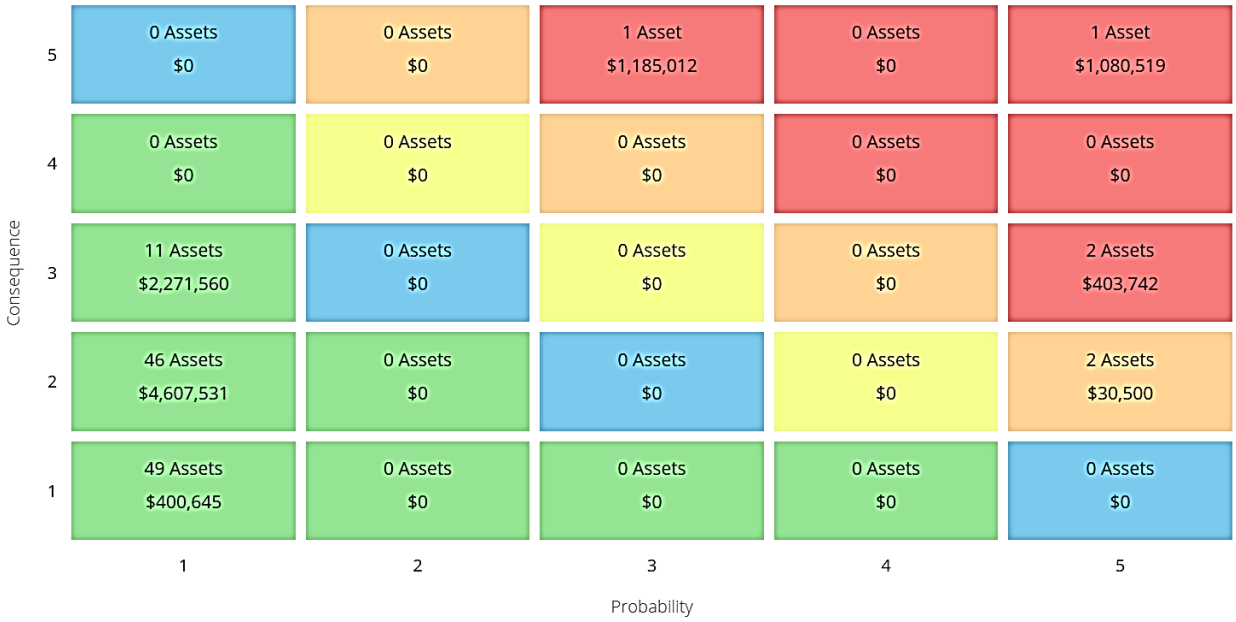
These risk models have been built into the Township's Asset Management Database (CityWide Asset Manager). See

Table 2 Lifecycle Management: Typical Lifecycle Interventions

Lifecycle Activity	Description	Cost	Typical Associated Risks
Preventative Maintenance/ Maintenance	Activities that prevent defects or deteriorations from occurring	$	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions; • Diminishing returns associated with excessive maintenance activities, despite added costs; • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	$$	• Useful life may not be extended as expected; • May be costlier in the long run when assessed against full reconstruction or replacement; • Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	$$$	• Incorrect or unsafe disposal of existing asset; • Costs associated with asset retirement obligations; • Substantial exposure to high inflation and cost overruns; • Replacements may not meet capacity needs for a larger population; • Loss or disruption of service, particularly for underground assets;

Risk and Criticality section for further details on approach used to determine asset risk ratings and classifications.

Figure 107 Risk Matrix – Water Infrastructure



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

- missed opportunities for cost savings and increases in lifecycle costs;
- deferral of vital projects, or further lending and borrowing;
- accelerated asset deterioration and premature failure, which may lead to public health and safety hazards, and disruption of services to the Township's residential and commercial base; and
- a decline in public satisfaction with the Township's service standards and the resulting reputational damage;

Figure 38 provides an overview of the different data points and allocations utilized to determine the risk rating for each water asset.

Figure 38 Risk Rating Criteria – Water Infrastructure

Probability of Failure (POF)		**Consequence of Failure (COF)**	
Water Linear Assets			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (80%)	Asset Condition	Direct Financial (80%)	Asset Replacement Cost

Operational (20%)	Service Life Remaining	Operational (20%)	Pipe Diameter (mm)
Water Non-Linear Assets			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (80%)	Asset Condition	Direct Financial (80%)	Asset Replacement Cost
Operational (20%)	Service Life Remaining	Strategic (20%)	Asset Type

Levels of Service

The tables that follow summarize the Township's current levels of service with respect to prescribed KPIs under Ontario Regulation 588/17.

Table 31 Ontario Regulation 588/17 Community Levels of Service – Water

Service Attribute	Qualitative Description	Current Level of Service (2021)
Scope	1. Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system.	Water Network services the townsite of Nairn Centre, this includes 127 residential units, 17 apartments, 1 Garage, 2 Restaurants, and 2 other Businesses. The outlying areas such as Birch Street, Sand Bay Road and properties around Agnew Lake are not serviced by the Water System. The Township owns the assets that support the supply, treatment, storage, transmission and distribution of safe drinking water. The water system was built to support growth in the municipality and is currently only running at 27% capacity. The Township employs Ontario Clean Water Agency to manage the water treatment system.
	2. Description, which may include maps, of the user groups or areas of the municipality that have fire flow.	All areas of the system have fire flow, this assumption is made on the point that wherever there is a hydrant there is fire flow.
Reliability	Description of boil water advisories and service interruptions.	A Do Not Drink Water Order was issued on February 1, 2021 due to a mechanical issue during a test which resulted in loss of pressure. The issue was resolved and the order was rescinded on February 4, 2021.

Table 32 Ontario Regulation 588/17 Technical Levels of Service – Water

Service Attribute	Qualitative Description	Current Level of Service (2021)
Scope	1. Percentage of properties connected to the municipal water system.	27%
	2. Percentage of properties where fire flow is available.	27%
Reliability	1. The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system.	0.02
	2. The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.	0
Performance	Actual annual capital reinvestment rate	1.1%
	Target annual capital reinvestment rate	1.9%

Buildings and Facilities

The Township's buildings and facilities inventory is managed in Citywide, and comprises of 10 assets, that represent 10 individual facilities. These are owned by the Township and maintained by various departments that provide key administrative, protective, recreational, and cultural services to the community.
Inventory and Valuation

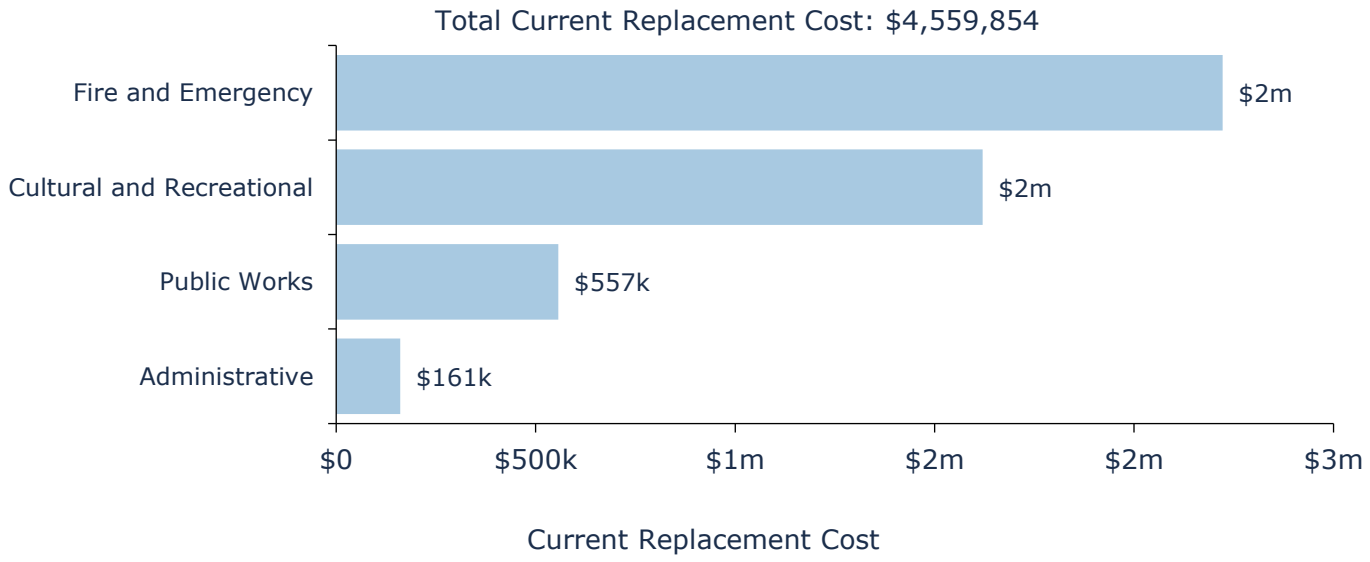
The current inventory poses serious limitations for accurate and long-term asset management planning. Due to its origins from a pooled, finance-based inventory the current listing of buildings and facilities assets are not componentized and lack accuracy.

Table 8 summarizes the quantity and current replacement cost of buildings and facilities as managed in the Township's asset register.

Table 8 Detailed Asset Inventory – Buildings and Facilities

Segment	Quantity	Unit of Measure	Replacement Cost
Fire and Emergency	2	Assets	$2,221,982
Cultural and Recreational	4	Assets	$1,620,176
Public Works	3	Assets	$556,874
Administrative	1	Assets	$160,822
Total			**$4,559,854**

Figure 11 Category Valuation – Buildings and Facilities



Asset Condition

Figure 12 summarizes the replacement cost-weighted condition of the Township's buildings and facilities. Based on informal staff assessments, 44% of all buildings and facilities are in fair or better condition. Some elements or components of these facilities may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition.

Figure 12 Asset Condition – Buildings and Facilities: Overall

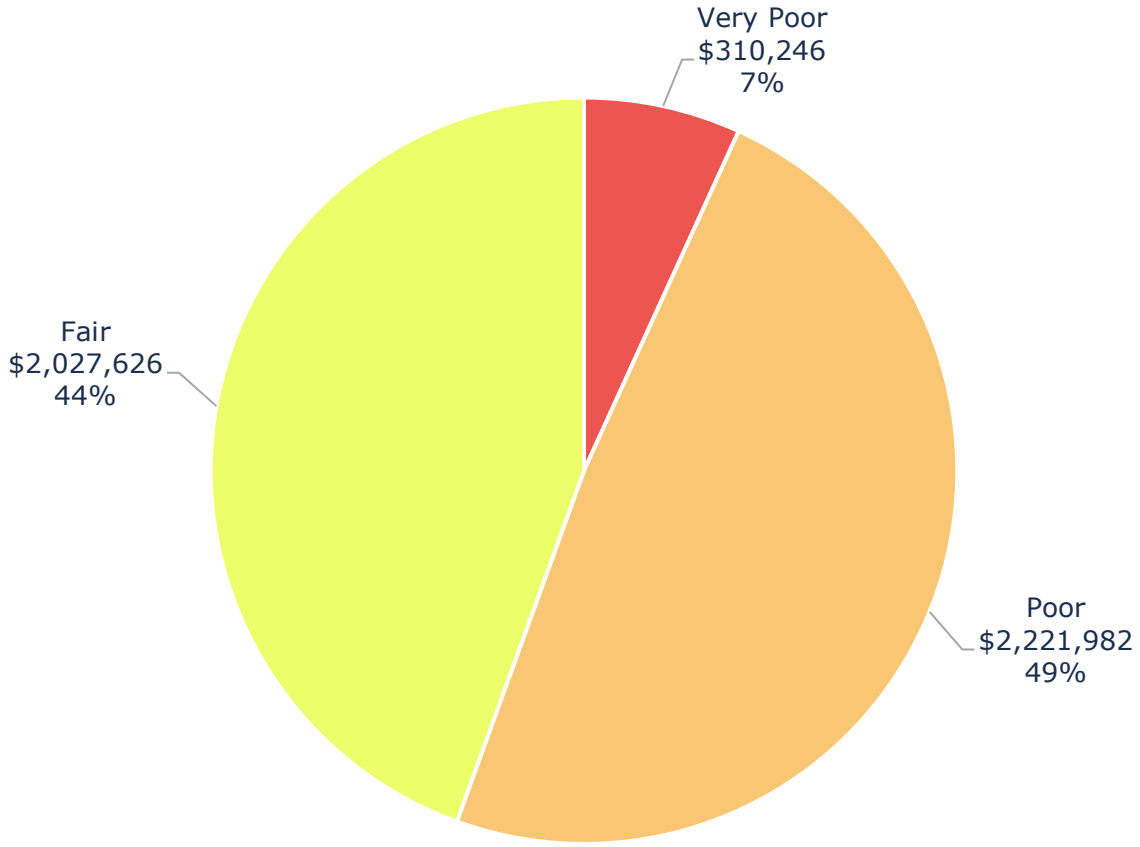


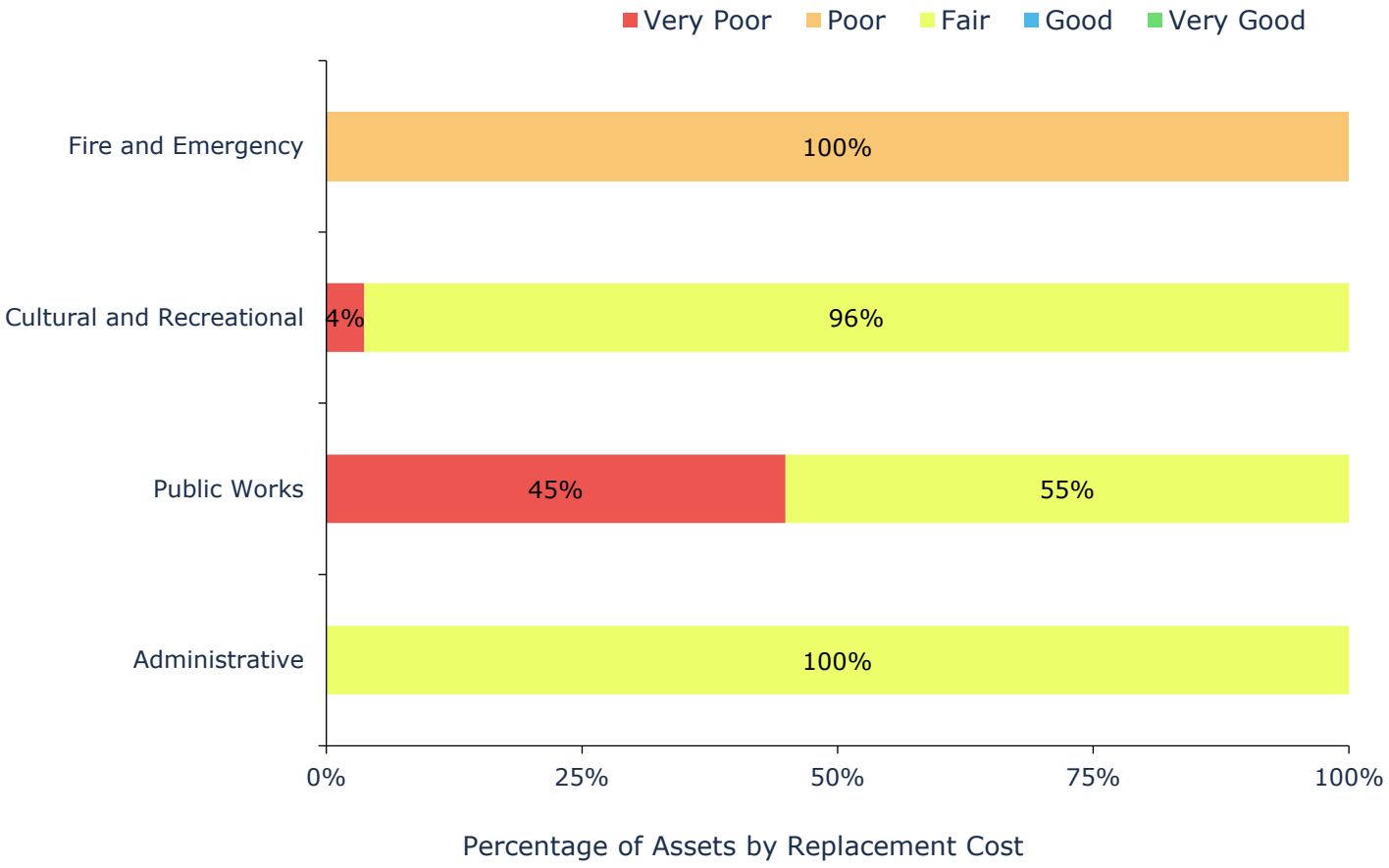
Table 16 summarizes the current average condition, the average service life remaining and the estimated useful life for each asset segment. The average condition is a weighted value based on the current replacement cost.

Table 16 Asset Condition by Segment – Buildings and Facilities

Segment	Estimated Useful Life (Years)	Service Life Remaining (Years)	Average Condition
Fire and Emergency	50	3.6	37% (Poor)
Cultural and Recreational	40-50	7.1	57% (Fair)
Public Works	40-50	0.8	33% (Poor)
Administrative	50	9.4	58% (Fair)
	Overall	**4.8**	**44% (Fair)**

As further detailed in Figure 13 and based on in-field condition assessments conducted by staff, fire and emergency facilities that have been assessed are in poor or worse condition while 45% of Public Works facilities are in very poor condition. We note that the inventory is not componentized. Without sufficient componentization, condition data for major components and elements of various facilities may remain hidden.

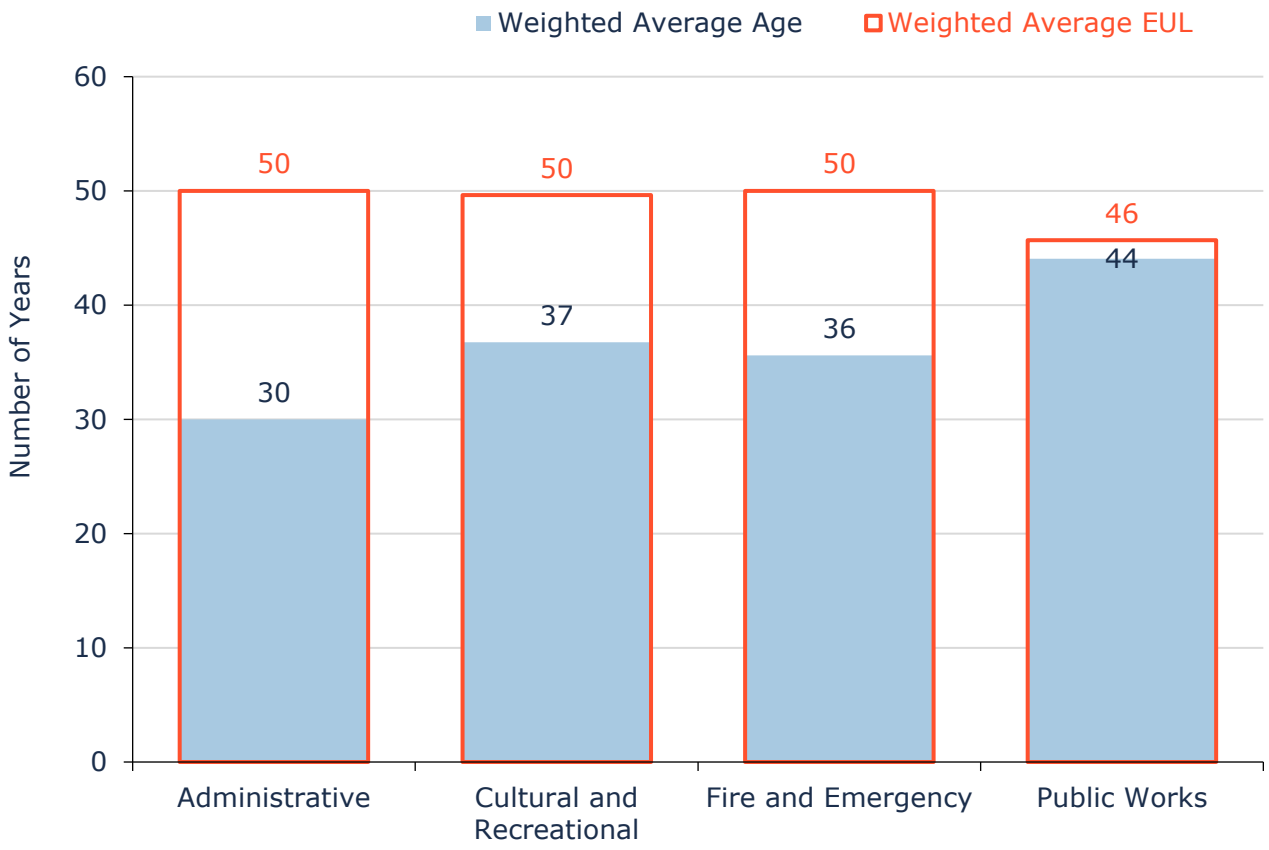
Figure 13 Asset Condition – Buildings and Facilities: By Segment



Age Profile

Figure 14 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Figure 14 Estimated Useful Life vs. Asset Age – Buildings and Facilities



Age analysis reveals that on average, assets that represent the Public Works facilities are approaching their end of life. As noted previously for the water treatment facility, the Township has not yet componentized its facilities. In the absence of componentization, age analysis was only possible at the site level, rather than at the major element or component level.

Current Approach to Lifecycle Management

Municipal buildings and facilities are subject to regular inspections to identify health and safety requirements as well as structural deficiencies that require additional attention.

Critical facilities have a detailed maintenance and rehabilitation schedule, while the maintenance of other facilities is dealt with on a case-by-case basis.

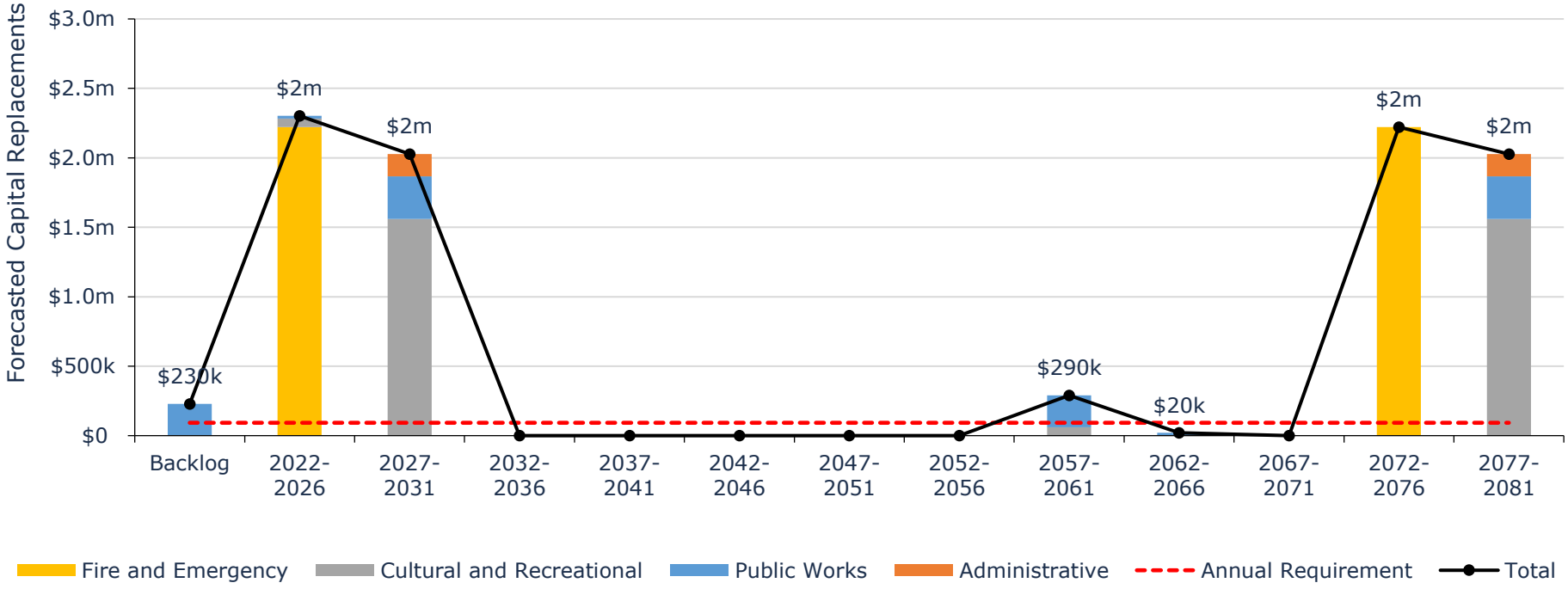
Staff conduct assessments strategically as facilities approach their end-of-life to determine whether replacement or rehabilitation is appropriate.

Forecasted Long-term Replacement Needs

Figure 15 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Township's buildings and facilities. These projections are based on asset replacement costs, age analysis, and condition data. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

The analysis was run until 2081 to capture at least one iteration of replacement for the longest-lived asset in the asset register. The Township's average annual requirements (red dotted line) for buildings and facilities total $0.01 million. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Figure 15 Forecasted Capital Replacement Requirements – Buildings and Facilities 2022-2081



There are major replacement spikes on the horizon for the next 10 years as assets reach the end of their useful life. It is highly unlikely that all assets will require full reconstruction or replacement. With proactive lifecycle management, the life of most assets can be extended by many years in a cost-effective manner. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves. Formal condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

System-generated 10-Year Replacement Forecast

The table below summarizes the projected cost of lifecycle activities (capital replacement only) that will need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register, which was limited to asset age, replacement cost, and useful life. In addition, as all of the buildings and facilities have not yet been componentized, no element- or component-level replacement needs could be forecasted.

Table 9 System-generated 10-Year Capital Replacement Forecast – Buildings and Facilities

Segment	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Fire and Emergency	$0	$0	$0	$2,221,982	$0	$0	$0	$0	$0	$0
Cultural and Recreational	$60,172	$0	$0	$0	$0	$0	$0	$0	$0	$1,560,004
Public Works	$20,425	$0	$0	$0	$0	$0	$0	$0	$0	$306,800
Administrative	$0	$0	$0	$0	$0	$0	$0	$0	$0	$160,822
Total	**$80,597**	**$0**	**$0**	**$2,221,982**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,027,626**

Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, as well as the facility function and purpose.

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

Figure 16 Risk Matrix – Buildings and Facilities

Figure 22 provides an overview of the different data points and allocations utilized to determine the risk rating for each building and facility asset.

Figure 22 Risk Rating Criteria – Buildings and Facilities

Probability of Failure (POF)		**Consequence of Failure (COF)**	
Buildings and Facilities			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (80%)	Asset Condition	Direct Financial (80%)	Asset Replacement Cost
Operational (20%)	Service Life Remaining	Strategic (20%)	Facility Function

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

Levels of Service

The tables that follow summarize the Township's current levels of service with respect to Township developed KPIs under Ontario Regulation 588/17.

Table 10 Ontario Regulation 588/17 Community Levels of Service – Buildings and Facilities

Service Attribute	Qualitative Description	Current Level of Service (2021)
Accessible and Reliable	List of facilities that meet accessibility standards and any work that has been undertaken to achieve alignment	Municipal Office and Community Centre meet accessibility standards. Work was undertaken in 2017. The Nairn Fire Hall is currently under renovations to meet accessibility standards.
Safe and Regulatory	Description of monthly and annual facilities inspection process	All facilities are inspected on a weekly basis to ensure a safe and reliable experience for users.
Affordable	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on municipal facilities	The Township strives to perform maintenance to maintain the current good/fair levels of service and to provide users with a safe environment.
Sustainable	Description of the current condition of municipal facilities and the plans that are in place to maintain or improve the provided level of service	The Township does not currently have data available to determine this qualitative metric. Staff are working to gather this metric for the next iteration of the AMP that is required in 2025.

Table 11 Ontario Regulation 588/17 Technical Levels of Service – Buildings and Facilities

Service Attribute	Qualitative Description	Current Level of Service (2021)
Accessible and Reliable	Number of unplanned facility closures	0
Safe and Regulatory	Number of service requests about unsafe conditions in facilities	0
	Number of identified defects	0
Affordable	Annual O&M costs / number of municipal facilities	$18,000
	Actual annual capital reinvestment rate	0%
	Target annual capital reinvestment rate	2.0%
Sustainable	% of facilities that are in fair or better condition	44%
	% of facilities that are in poor or worse condition	56%

Machinery and Equipment

The Township's machinery and equipment asset inventory consists of 3 unique assets and is managed in Citywide.

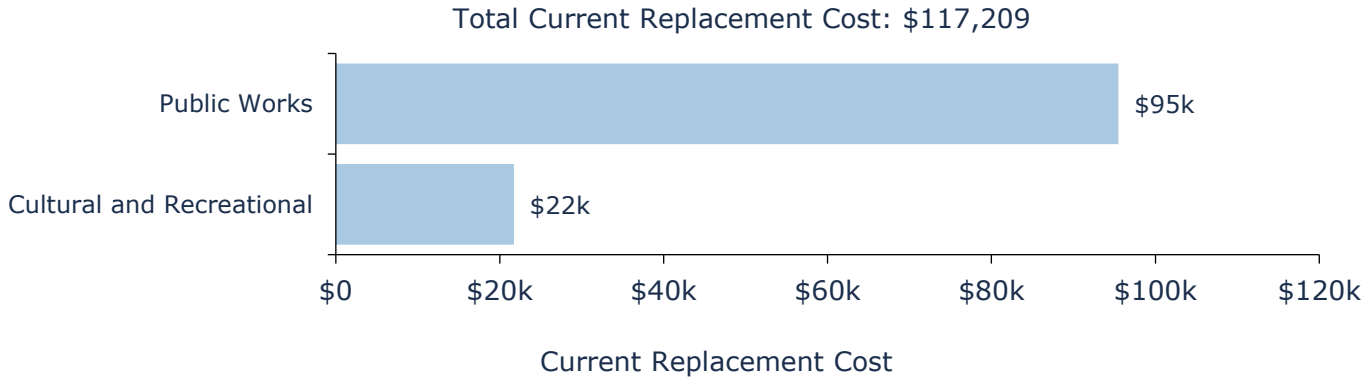
Inventory and Valuation

Table 0 summarizes the quantity and current replacement cost of all machinery and equipment assets available in the Township's asset register.

Table 20 Detailed Asset Inventory – Machinery and Equipment

Segment	Quantity	Unit of Measure	Replacement Cost
Public Works	2	Assets	$95,472
Cultural and Recreational	1	Assets	$21,737
		Total	**$117,209**

Figure 17 Category Valuation – Machinery and Equipment



Asset Condition

Figure summarizes the replacement cost-weighted condition of the Township's machinery and equipment assets. Based on age data only, approximately 35% of are in fair or better condition, with the remaining in poor to very poor condition.

Figure 25 Asset Condition – Machinery and Equipment

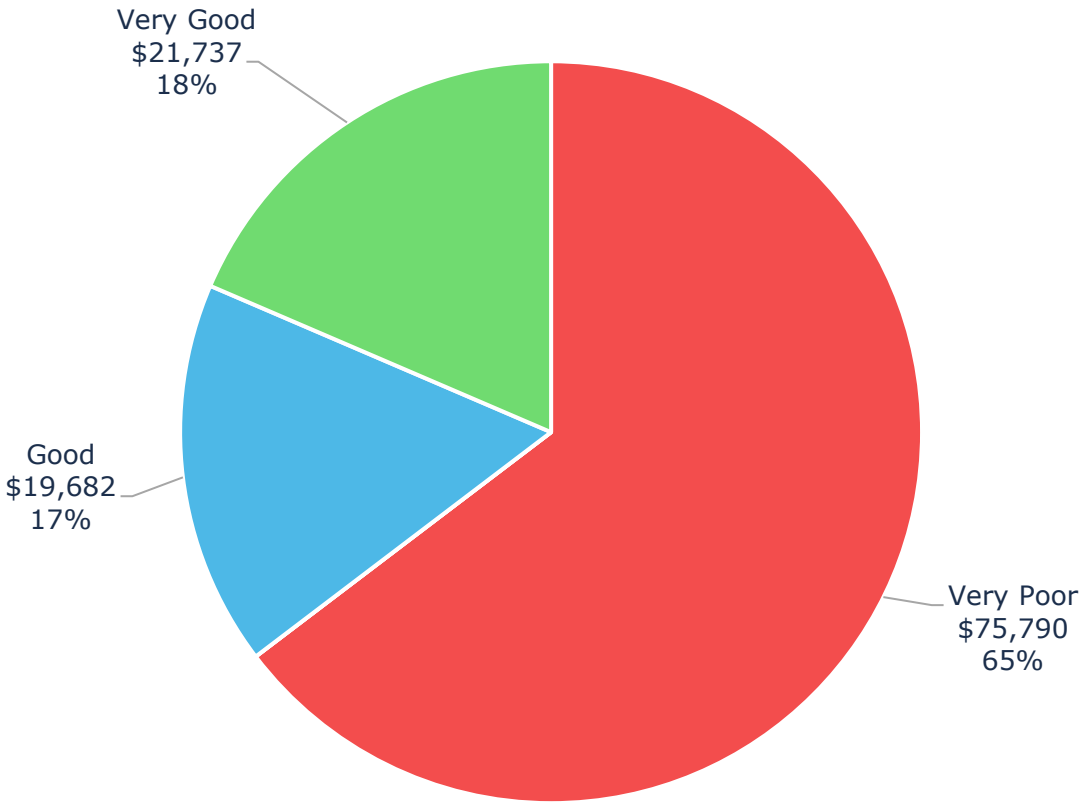


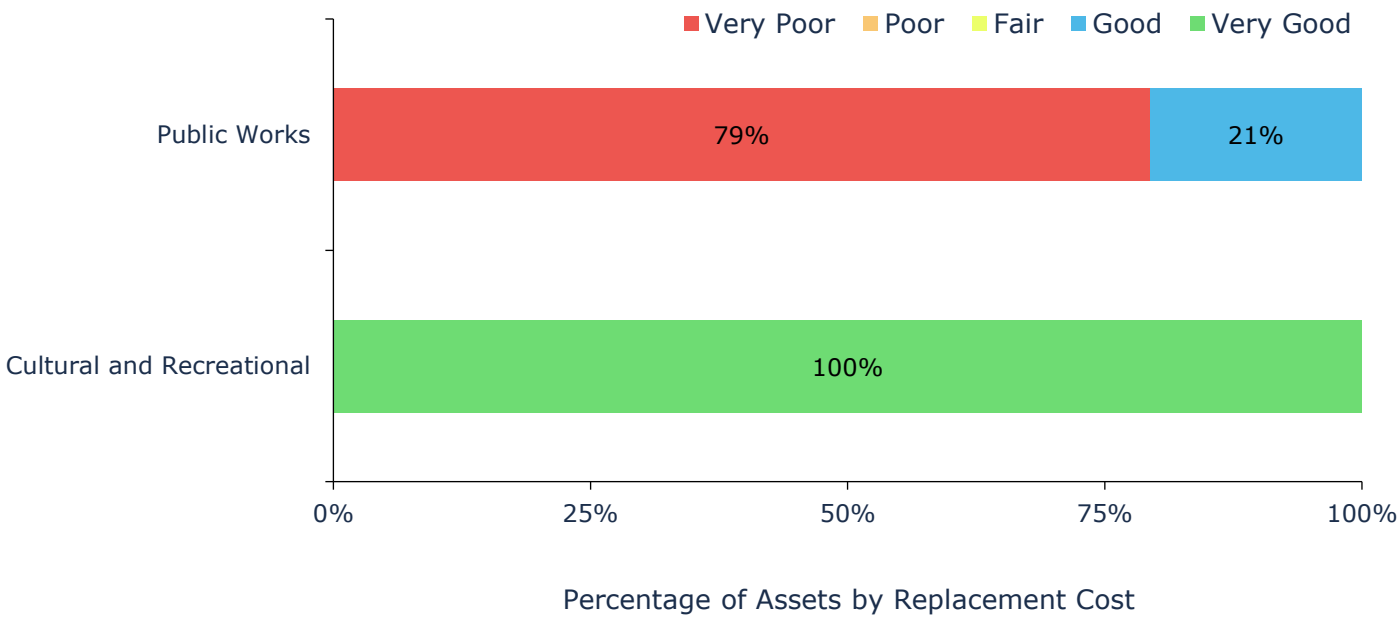
Table 21 summarizes the current average condition, the average service life remaining and the estimated useful life for each asset segment. The average condition is a weighted value based on the current replacement cost.

Table 21 Asset Condition by Segment – Machinery and Equipment

Segment	Estimated Useful Life (Years)	Service Life Remaining (Years)	Average Condition
Public Works	10	-1.5	14% (Very Poor)
Cultural and Recreational	10	5.7	91% (Very Good)
	Overall	**0.9**	**28% (Poor)**

As further detailed in Figure 26, based on age-based condition, the majority of machinery and equipment assets are in poor or worse condition.

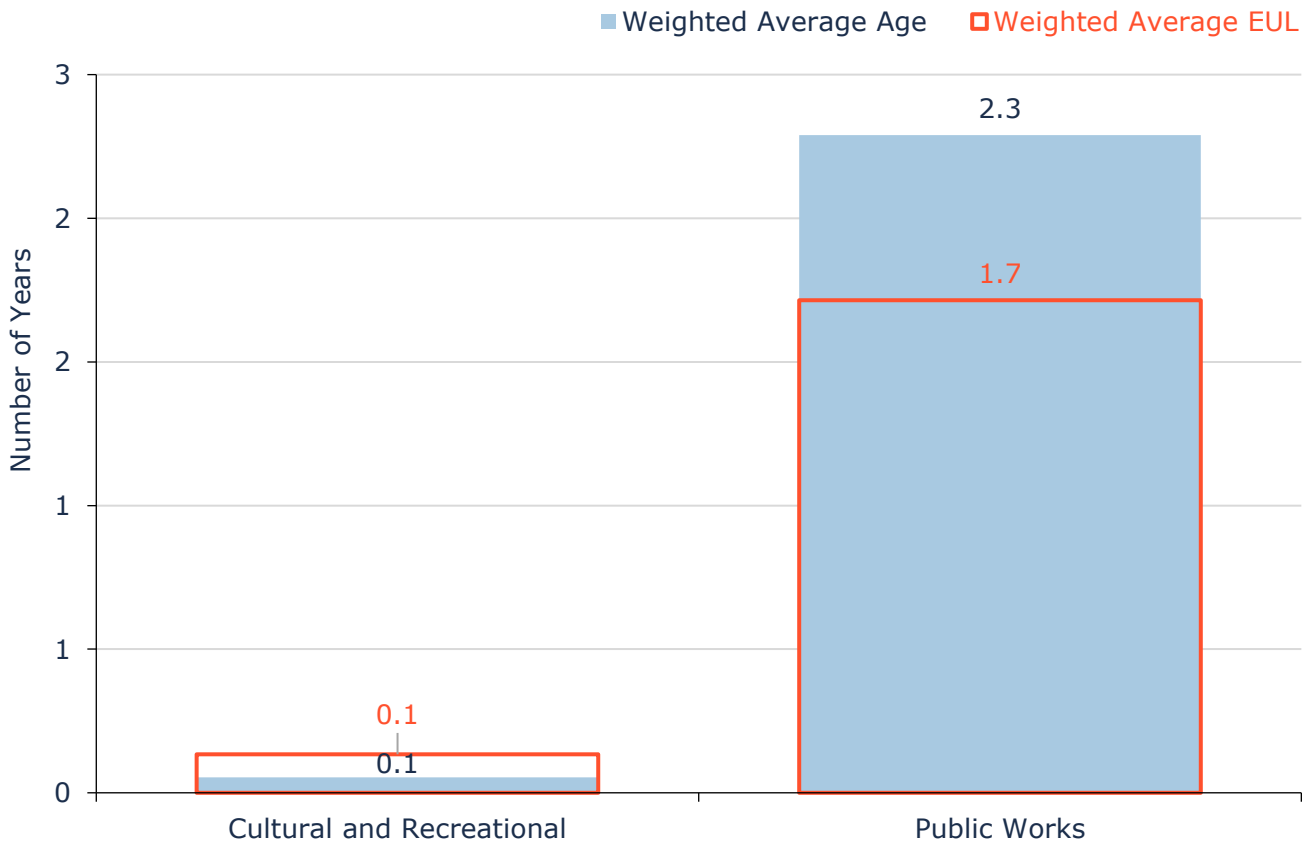
Figure 26 Asset Condition – Machinery and Equipment: By Segment



Age Profile

Figure 27 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Figure 187 Estimated Useful Life vs. Asset Age – Machinery and Equipment



Age profiles and inspections will help to identify machinery and equipment assets in need of replacements and/or upgrades. A review of EULs for assets may also be considered based on performance history to date and staff's professional judgement.

Current Approach to Lifecycle Management

This section outlines the Township's current approach to managing its machinery and equipment assets. Key data was collected through staff discussions. As applicable, lifecycle models were also built in Citywide. These can be used by staff for ongoing reference and planning within the Township's asset management program. These models should be continuously refined and updated with new data as it becomes available.

Machinery and Equipment

Staff complete regular visual inspections of machinery and equipment assets to ensure they are in an adequate state of repair. Staff also conduct formal inspections of outdoor play space, fixed play structures and surfacing in accordance with CAN/CSA-Z614 and required as per O. Reg. 137/15.

Maintenance activities for machinery and equipment assets vary by department but are generally based on the manufacturer's recommendations and supplemented by the expertise of staff.

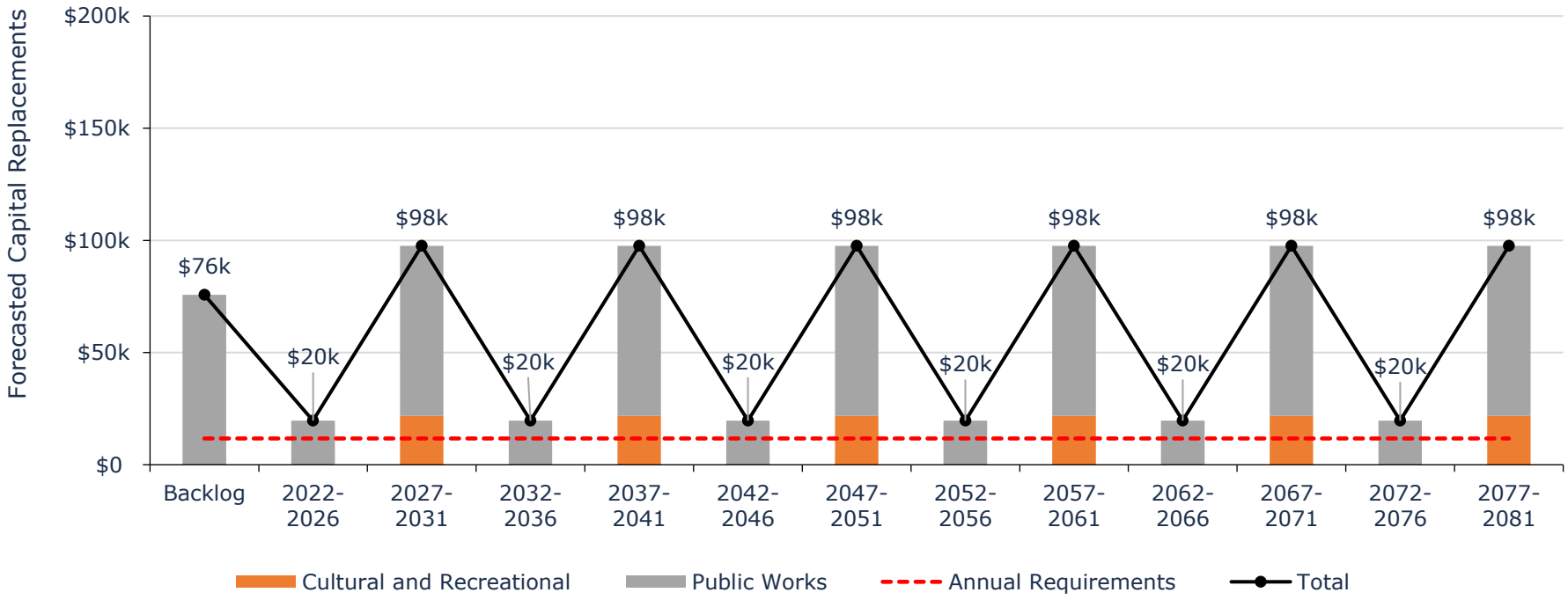
The replacement of machinery and equipment assets depends on deficiencies identified by operators that may impact their ability to complete required tasks.

Forecasted Long-term Replacement Needs

Figure 19 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's machinery and equipment assets. This analysis was run until 2081 to capture at least one iteration of replacement for the longest-lived asset in the asset register. The Township's average annual requirements (red dotted line) total $11k for all machinery and equipment assets. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

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

Figure 19 Forecasted Capital Replacement Requirements – Machinery and Equipment - 2022-2081



Often, the magnitude of replacement needs is substantially higher than most municipalities can afford to fund. In addition, most assets may not need to be replaced as forecasted, while others may be replaced as part of a coordinated capital project. However, quantifying and monitoring these spikes is essential for long-term financial planning, including establishing dedicated reserves, and identifying assets that may be candidates for further inspections. Staff inspections may also help reduce long-term projections by providing more accurate condition data for assets than age. In addition, a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including replacements.

System-generated 10-Year Replacement Forecast

The table below summarizes the projected cost of lifecycle activities (capital replacement only) that may be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register. As no assessed condition data was available for machinery and equipment assets, only age was used to determine forthcoming replacement needs. These projections can be different from actual capital forecasts. Consistent data updates, especially condition, will improve the alignment between the system generated expenditure requirements.

Table 24 System-generated 10-Year Replacement Forecast – Machinery and Equipment

Segment	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Cultural and Recreational	$0	$0	$0	$0	$0	$0	$21,737	$0	$0	$0
Public Works	$0	$0	$0	$19,682	$0	$0	$0	$0	$0	$75,790
Total	**$0**	**$0**	**$0**	**$19,682**	**$0**	**$0**	**$21,737**	**$0**	**$0**	**$75,790**

Risk Analysis

The risk matrix below is generated using available asset data, including service life remaining, replacement costs, and asset purpose.

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

Figure 209 Risk Matrix - Machinery and Equipment

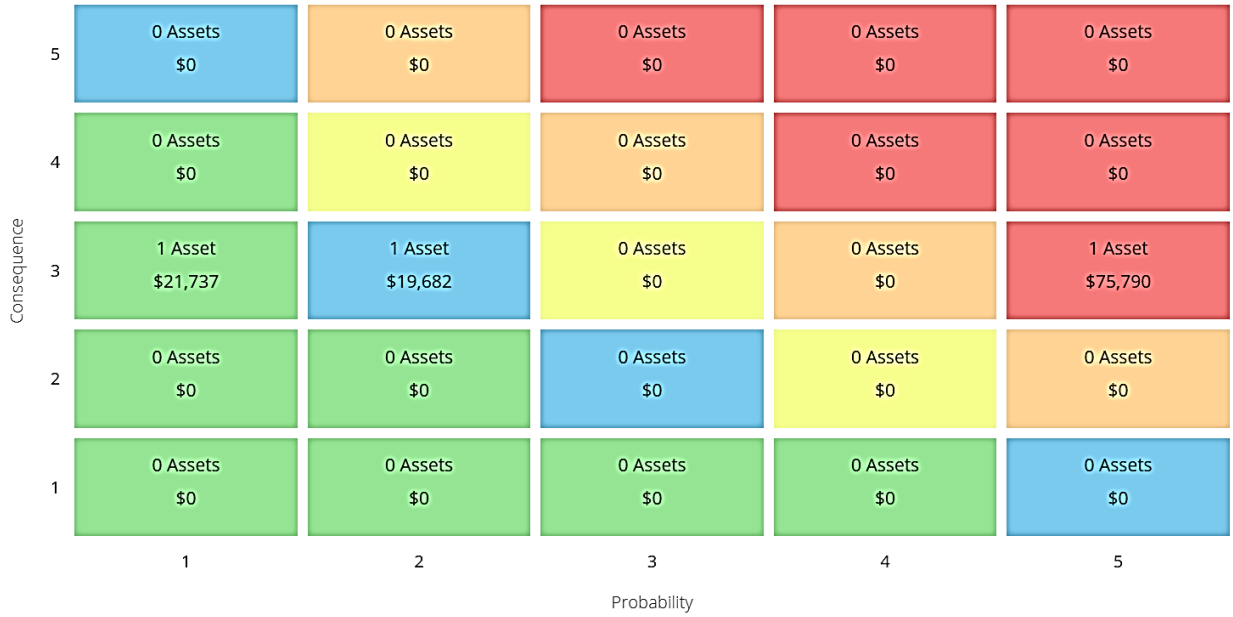


Figure 30 provides an overview of the different data points and allocations utilized to determine the risk rating for each machinery and equipment asset.

Figure 30 Risk Rating Criteria – Machinery and Equipment

Probability of Failure (POF)		**Consequence of Failure (COF)**	
Machinery and Equipment			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (80%)	Asset Condition	Direct Financial (80%)	Asset Replacement Cost
Operational (20%)	Service Life Remaining	Strategic (20%)	Asset Type

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

Levels of Service

The tables that follow summarize the Township's current levels of service with respect to Township developed KPIs under Ontario Regulation 588/17.

Table 25 Ontario Regulation 588/17 Community Levels of Service – Machinery and Equipment

Service Attribute	Qualitative Description	Current Level of Service (2021)
Safe and Regulatory	Description of the equipment inspection process and any licensing requirements for operators	Relevant information not available at this time; staff will have this ready for the next iteration of the AMP
Sustainable	Description of the current condition of equipment and the plans that are in place to maintain or improve the provided level of service	Relevant information not available at this time; staff will have this ready for the next iteration of the AMP

Table 126 Ontario Regulation 588/17 Technical Levels of Service – Machinery and Equipment

Service Attribute	Qualitative Description	Current Level of Service (2021)
Safe and Regulatory	% of equipment where pre/post inspections are completed	100%
Affordable	Actual annual capital reinvestment rate	1.7%
	Target annual capital reinvestment rate	10.0%
Sustainable	% of machinery & equipment assets that are in good or very good condition	35%
	% of machinery & equipment assets that are in poor or very poor condition	65%

Vehicles

The Township's vehicles inventory is managed in Citywide and allow staff to efficiently deliver municipal services and personnel in addition to supporting service areas such as fire rescue and emergency vehicles that support emergency services as well as light- and heavy-duty vehicles that support the maintenance of Township infrastructure and address service requests.

The total current replacement of the Township's vehicles is estimated to be more than $2 million.

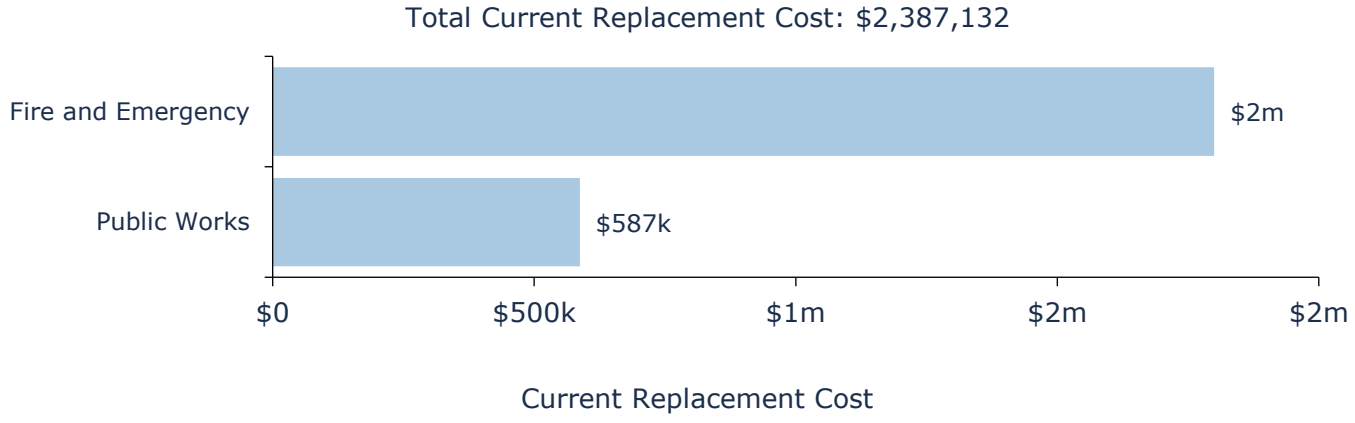
Inventory and Valuation

Table summarizes the quantity and current replacement cost of vehicle assets

Table 33 Detailed Asset Inventory – Vehicles

Segment	Quantity	Unit of Measure	Replacement Cost
Fire and Emergency	3	Assets	$1,800,000
Public Works	4	Assets	$587,132
		Total	**$2,387,132**

Figure 41 Category Valuation – Vehicles



Asset Condition

Figure 2 summarizes the replacement cost-weighted condition of the Township's vehicles. Based on age data only, 60% of assets are in fair or better condition; the remaining 40% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Figure 42 Asset Condition – Vehicles: Overall

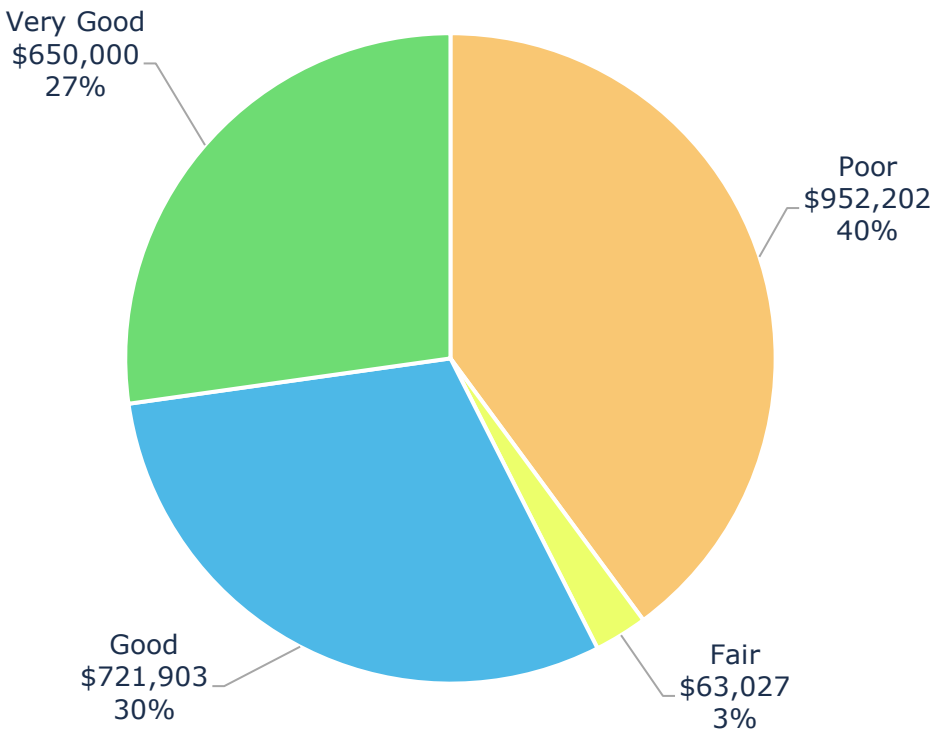


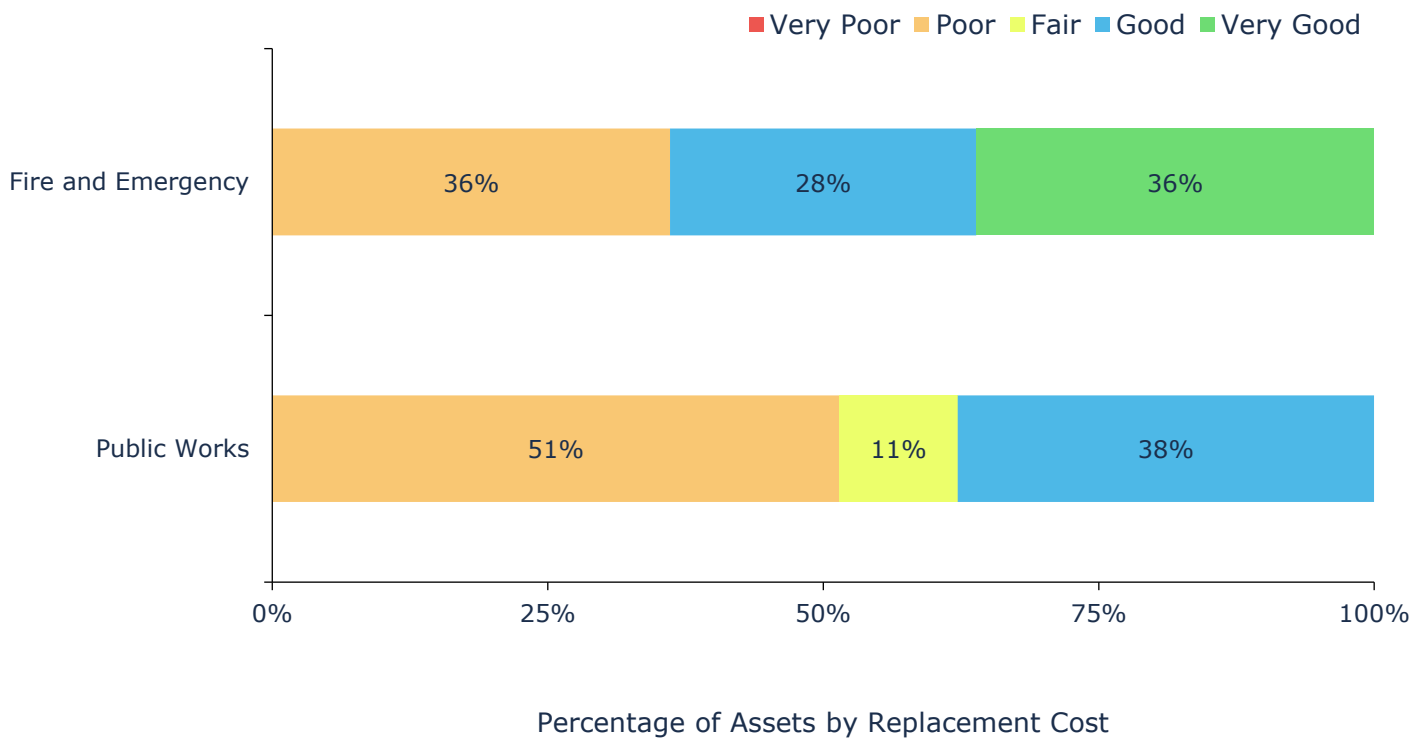
Table 34 summarizes the current average condition, the average service life remaining and the estimated useful life for each asset segment. The average condition is a weighted value based on the current replacement cost.

Table 34 Asset Condition by Segment – Vehicles

Segment	Estimated Useful Life (Years)	Service Life Remaining (Years)	Average Condition
Fire and Emergency	20	5.7	62% (Good)
Public Works	9, 15	1.8	48% (Fair)
	Overall	**3.4**	**59% (Fair)**

Figure summarizes the age-based condition of vehicles by segment. The data suggests that 64% of fire and emergency vehicles are in fair or better condition; however, the majority of public work vehicles are in poor or worse condition.

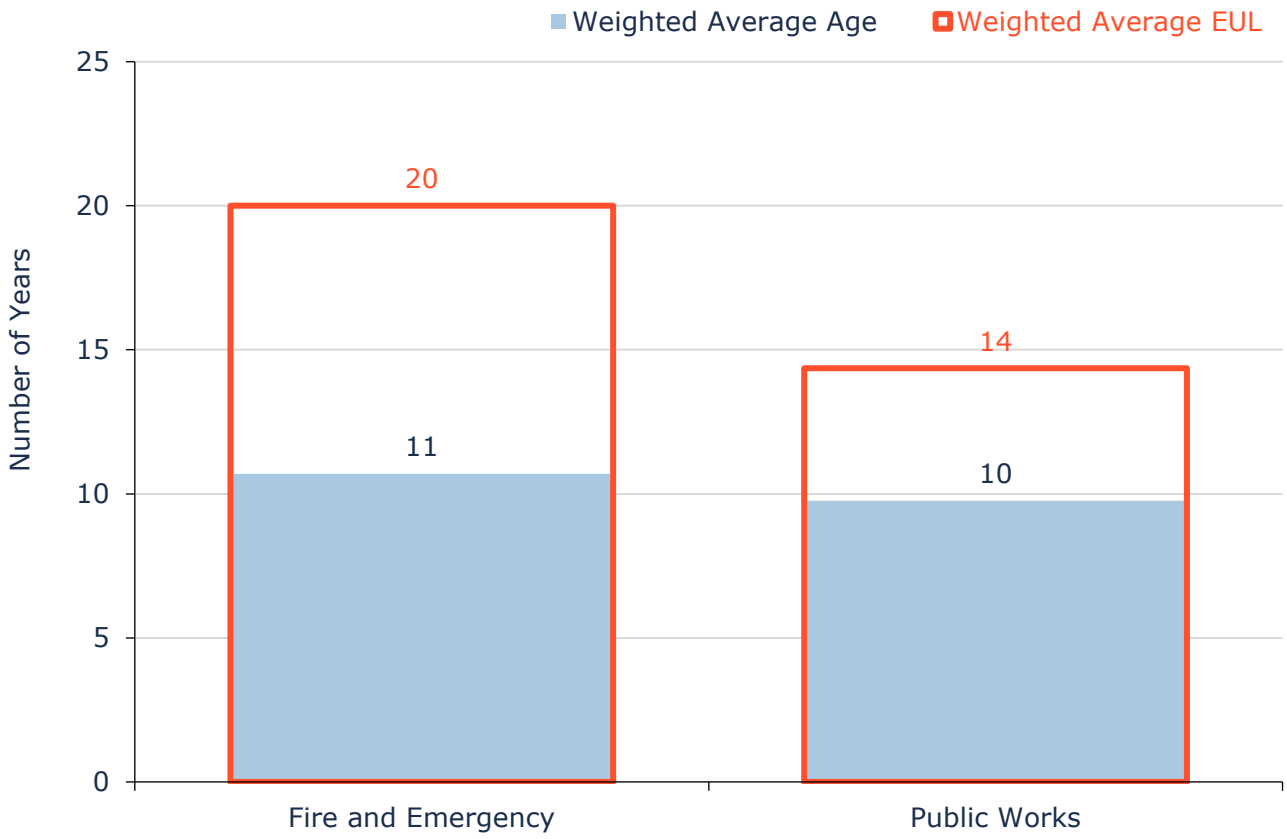
Figure 43 Asset Condition – Vehicles: By Segment



Age Profile

Figure 4 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

Figure 44 Estimated Useful Life vs. Asset Age – Vehicles



Age analysis reveals that, on average, fire and emergency vehicles are at the midpoint stage of their useful lives, while public work vehicles are approaching the end of their useful life.

Fire and Emergency vehicles have an average age of 11 years against an average EUL of 20 years. Public Work vehicles have an average age of 10 years against an average EUL of 14 years. Periodically, these should be reviewed to better reflect in-field asset performance.

Current Approach to Lifecycle Management

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

Fire and Emergency

There are formal condition assessments conducted on fire and emergency vehicles in accordance with regulations including National Fire Protection Association (NFPA) codes and standards for fire service-related fleet assets. The mileage of vehicles is used as proxy to determine remaining useful life and relative vehicle condition, that along with vehicle age and departmental usage, dictate the prioritization of asset replacement.

Public Works

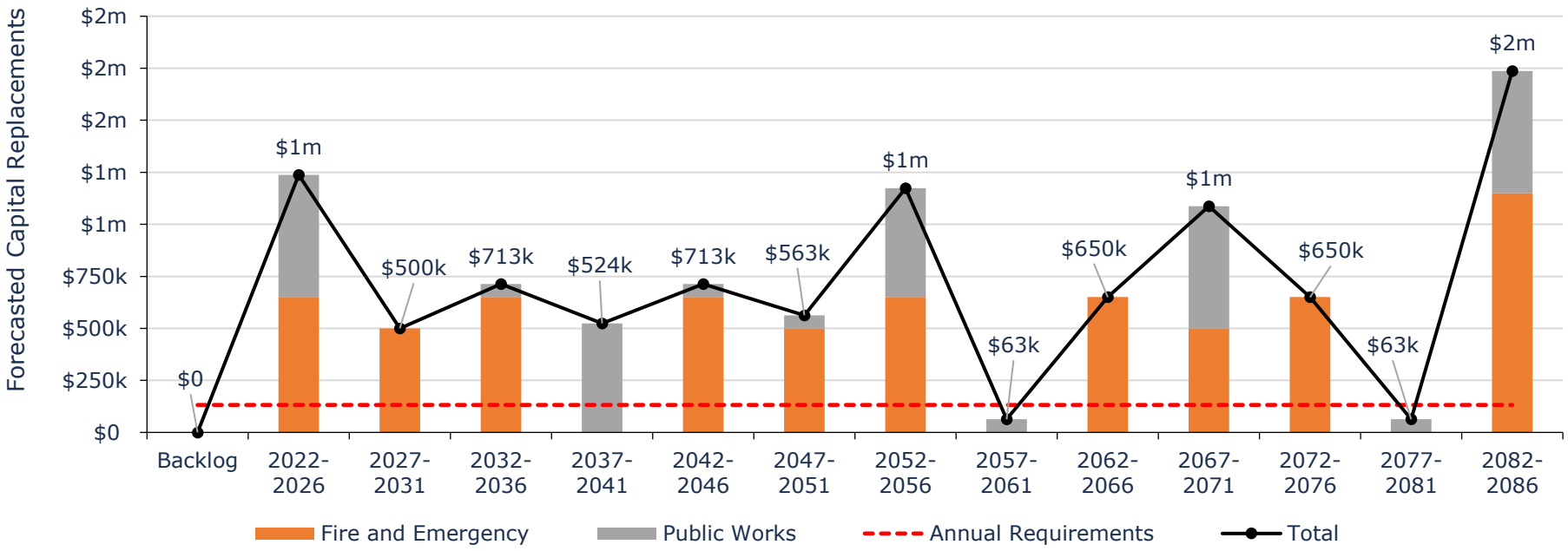
Staff complete regular visual inspection of public works vehicles to ensure they are in an adequate state of repair prior to operation. Annual preventative maintenance activities include system components check and additional detailed inspections. The mileage of vehicles is used as proxy to determine remaining useful life and relative vehicle condition, that along with vehicle age and departmental usage, dictate the prioritization of asset replacement.

Forecasted Long-term Replacement Needs

Figure 5 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Township's vehicle assets. This analysis was run until 2086 to capture at least one iteration of replacement for the longest-lived asset in the asset register. The Township's average annual requirements (red dotted line) total $0.1 million for all vehicle assets. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

Replacement needs are forecasted to fluctuate over the 60+ year time horizon, totaling more than $1 million in the current decade, and peaking at $2 million between 2082 and 2086. These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 45 Forecasted Capital Replacement Requirements – Vehicles 2022-2086



System-generated 10-Year Replacement Forecast

The table below summarizes the projected cost of lifecycle activities (capital replacement only) that will need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register. For vehicle assets, no condition information was available. As a result, this system-generated 10-year forecast relies only on asset age and replacement cost. These projections can be different from actual capital forecasts. Consistent data updates, especially condition, will improve the alignment between the system generated expenditure requirements, and the Township's capital expenditure forecasts.

Table 36 System-generated 10-Year Replacement Forecast – Vehicles

Segment	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Fire and Emergency	$0	$650,000	$0	$0	$0	$500,000	$0	$0	$0	$0
Public Works	$0	$302,202	$63,027	$221,903	$0	$0	$0	$0	$0	$0
Total	**$0**	**$952,202**	**$63,027**	**$221,903**	**$0**	**$500,000**	**$0**	**$0**	**$0**	**$0**

Risk Analysis

The risk matrix below is generated using available asset data vehicle assets, including service life remaining, replacement costs, and asset type.

These risk models have been built into the Township's Asset Management Database (CityWide Asset Manager). See

Table 2 Lifecycle Management: Typical Lifecycle Interventions

Lifecycle Activity	Description	Cost	Typical Associated Risks
Preventative Maintenance/ Maintenance	Activities that prevent defects or deteriorations from occurring	$	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions; • Diminishing returns associated with excessive maintenance activities, despite added costs; • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	$$	• Useful life may not be extended as expected; • May be costlier in the long run when assessed against full reconstruction or replacement; • Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	$$$	• Incorrect or unsafe disposal of existing asset; • Costs associated with asset retirement obligations; • Substantial exposure to high inflation and cost overruns; • Replacements may not meet capacity needs for a larger population; • Loss or disruption of service, particularly for underground assets;

Risk and Criticality section for further details on approach used to determine asset risk ratings and classifications.

Figure 46 Risk Matrix – Vehicles

Figure 47 provides an overview of the different data points and allocations utilized to determine the risk rating for each vehicle asset.

Figure 47 Risk Rating Criteria – Vehicles

Probability of Failure (POF)		**Consequence of Failure (COF)**	
Vehicle Assets			
POF Critera	Asset Data Point	COF Criteria	Asset Data Point
Performance (80%)	Asset Condition	Direct Financial (80%)	Asset Replacement Cost
Operational (20%)	Service Life Remaining	Strategic (20%)	Asset Type

Levels of Service

The tables that follow summarize the Township's current levels of service with respect to prescribed KPIs under Ontario Regulation 588/17.

Table 37 Ontario Regulation 588/17 Community Levels of Service – Vehicles

Service Attribute	Qualitative Description	Current Level of Service (2021)
Safe and Regulatory	Description of the routine maintenance and check-up procedures	Relevant information not available at this time; staff will have this ready for the next iteration of the AMP
Sustainable	List of day-to-day vehicles in operation and the replacement values of those assets	Relevant information not available at this time; staff will have this ready for the next iteration of the AMP

Table 13 Ontario Regulation 588/17 Technical Levels of Service – Vehicles

Service Attribute	Qualitative Description	Current Level of Service (2021)
Accessible and Reliable	Percentage of vehicles that are idle	0
	Percentage of vehicle utilization	100%
Affordable	Actual annual capital reinvestment rate	0.1%
	Target annual capital reinvestment rate	5.5%
Sustainable	% of vehicles that are in good or very good condition	57%
	% of vehicles that are in poor or very poor condition	40%

Financial Strategy

Each year, the Township of Nairn & Hyman makes important investments in its infrastructure's maintenance, renewal, rehabilitation, and replacement to ensure assets remain in a state of good repair. However, spending needs typically exceed fiscal capacity. In fact, most municipalities continue to struggle with annual infrastructure deficits. Achieving full-funding for infrastructure programs will take many years and should be phased-in gradually to reduce burden on taxpayers.

This financial strategy is designed for the Township's existing asset portfolio and is premised on two key inputs: the average annual capital requirements and the average annual funding typically available for capital purposes. The annual requirements are based on the replacement cost of assets and their serviceable life, and where available, lifecycle modeling. This figure is calculated for each individual asset and aggregated to develop category-level values.

The annual funding typically available is determined by averaging historical capital expenditures on infrastructure, inclusive of any allocations to reserves for capital purposes.

Only reliable and predictable sources of funding are used to benchmark funds that may be available on any given year. For the purpose of this AMP, these funding sources include:

- revenue from taxation spent on capital works;
- revenue from taxation allocated to reserves for capital purposes;
- revenue from water rates allocated to capital reserves;
- the Ontario Municipal Partnership Fund (OMPF);
- the Northern Ontario Resource Development Support Fund (NORDS);
- the Canada Community Benefits Fund (CCBF), formerly the federal Gas Tax Fund; and,
- the Ontario Community Infrastructure Fund (OCIF).

Although provincial and federal infrastructure programs can change with evolving policy, CCBF, OCIF, OMPF, and NORDS are considered as permanent and predictable.

Annual Capital Requirements

Table 14 outlines the total average annual capital requirements for existing assets in each asset category. Based on a replacement cost of $69 million, annual capital requirements total more than $1.7 million for the five asset categories analyzed in this document. The table also illustrates the system-generated, equivalent target reinvestment rate (TRR), calculated by dividing the annual capital requirements by the total replacement cost of each category. The cumulative target reinvestment for these five categories is estimated at 2.5%.

Table 14 Average Annual Capital Requirements

Asset Category	Replacement Cost	Annual Capital Requirements	Equivalent Target Reinvestment Rate
Roads and Roadside	$51,718,584	$1,283,304	2.5%
Water	$9,979,509	$189,571	1.9%
Buildings and Facilities	$4,559,854	$92,692	2.0%
Machinery and Equipment	$117,209	$11,721	10.0%
Vehicles	$2,387,132	$131,943	5.5%
Total	**$68,762,288**	**$1,709,231**	**2.5%**

Although there is no industry standard guide on optimal annual investment in infrastructure, the TRRs above provide a useful benchmark for organizations. In 2016, the Canadian Infrastructure Report Card (CIRC) produced an assessment of the health of municipal infrastructure as reported by cities and communities across Canada. The CIRC remains a joint project produced by several organizations, including the Federation of Canadian Municipalities (FCM), the Canadian Society of Civil Engineers (CSCE), the Canadian Network of Asset Managers (CNAM), and the Canadian Public Works Association (CPWA).

The 2016 version of the report card also contained recommended reinvestment rates that can also serve as benchmarks for municipalities. The CIRC suggest that, if increased, these reinvestment rates can "stop the deterioration of municipal infrastructure." The report card contains both a range for reinvestment rates that outlines the lower and upper recommended levels, as well as current municipal averages.

Table 15 provides the CIRC lower and upper reinvestment rate targets for relevant asset groups. The table shows that, on average, municipalities are well below the recommended target reinvestment rates.

Table 15 Canadian Infrastructure Report Card (CIRC) Reinvestment Rate Targets

Asset Category	Lower Target	Upper Target	Municipal Average in 2016
Road Network (inc. sidewalks)	2.0%	3.0%	1.1%
Bridges & Culverts	1.0%	1.5%	0.8%
Stormwater Network (linear)	1.0%	1.3%	0.3%
Water Network (linear)	1.0%	1.5%	0.9%
Water Network (non-linear)	1.7%	2.5%	1.1%
Wastewater Network (linear)	1.0%	1.3%	0.7%
Wastewater Network (non-linear)	1.7%	2.5%	1.4%

Current Infrastructure Funding Framework

Figure 21 shows the Township's own-source funding that has historically been available for capital infrastructure purposes for 2020, 2021, and 2022 (budget). Based only on this data, average funding available to the five categories analyzed in this AMP totals $1.1 million. This figure excludes development charges that may be used for growth-related infrastructure.

Figure 21 Historical Funding Available for Infrastructure Purposes: Own-source Revenues Only

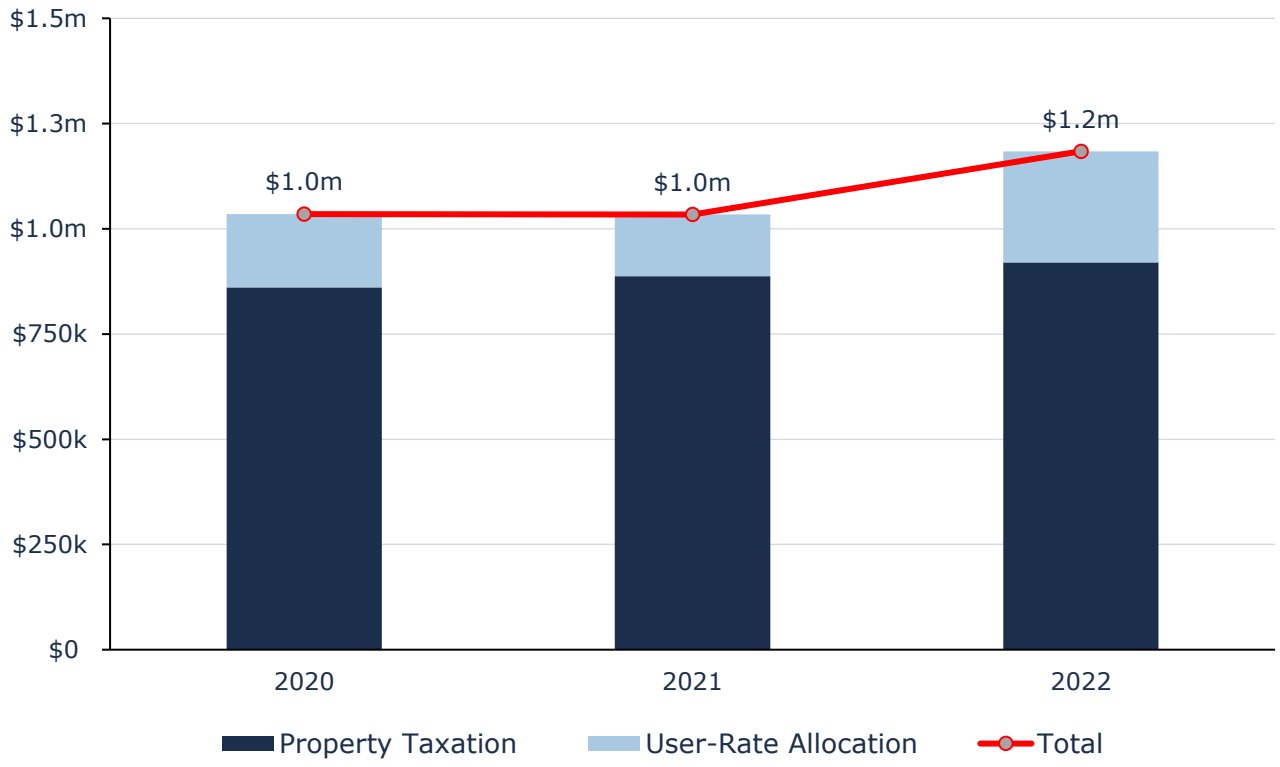


Table details how average funding is distributed across the five asset categories, and the various sources used to support spending. In addition to own-source revenue streams, namely property taxation and utility rates, the table also includes CCBF, OCIF, OMPF, and NORDS as these revenue sources are considered sustainable.

The inclusion of these funding sources increases available funding for tax-funded assets by more than $3.0 million, and results in a total average annual funding of $4.5 million. We use this total funding, inclusive of CCBF, OCIF, OMPF, and NORDS, as a baseline and to determine funding deficits.

Table 41 Allocation of Average Annual Infrastructure Capital Funding by Asset Category

Asset Category	Taxes/ User-Rates	CCBF	OCIF	OMPF	NORDS	Average Annual Funding Available
Roads and Roadside	$22,000	$22,000	$100,000	$168,000	$60,000	$372,000
Water	$113,000[2]	$0	$0	$0	$0	$113,000
Buildings and Facilities	$0	$0	$0	$0	$0	$0
Machinery and Equipment	$2,000	$0	$0	$0	$0	$2,000
Vehicles	$3,000	$0	$0	$0	$0	$3,000
Total	**$140,000**	**$22,000**	**$100,000**	**$168,000**	**$60,000**	**$490,000**

[2] Water rate revenues total $264,000 out of which $151,000 have been allocated for operation expenditures.

Current Funding Levels and Infrastructure Deficits

Table 16 summarizes how current funding levels compare with funding required for each asset category. At existing levels, the Township is funding 29% of its annual capital requirements for all infrastructure analyzed in this asset management plan. This creates a total annual funding deficit of $1.2 million.

Table 16 Current Funding Position vs. Required Funding

Asset Category	Annual Capital Requirements	Average Annual Funding Available	Annual Infrastructure Deficit	Funding Level
Roads and Roadside	$1,283,304	$372,000	$911,304	29%
Water	$189,571	$113,000	$76,571	60%
Buildings and Facilities	$92,692	$0	$92,692	0%
Machinery and Equipment	$11,721	$2,000	$9,721	17%
Vehicles	$131,943	$3,000	$128,943	2%
Total	**$1,709,231**	**$490,000**	**$1,219,231**	**29%**

Table compares the Township's target vs. actual reinvestment rates, along with other municipalities based on CIRC's 2016 average. The exceptions are machinery, equipment, and vehicle assets.

Table 43 Target vs. Actual Reinvestment Rates

Asset Category	Target Reinvestment Rate	Actual Reinvestment Rate	CIRC 2016 Municipal Average
Roads and Roadside	2.5%	0.7%	1.1%
Water	1.9%	1.1%	0.9% - 1.1%
Buildings and Facilities	2.0%	0.0%	1.3% - 1.7%
Machinery and Equipment	10.0%	1.7%	N/A
Vehicles	5.5%	0.1%	N/A
Total	**2.5%**	**0.7%**	**N/A**

Closing Funding Gaps

Eliminating annual infrastructure funding shortfalls is a difficult and long-term endeavour for municipalities. Considering the Township's current funding position, it will require many years to reach full funding for current assets.

This section outlines how the Township of Nairn & Hyman can close annual funding deficits using own-source revenue streams, i.e., property taxation and utility rates, and without the use of additional debt for existing assets. Separate analysis is provided for tax- and rate-funded assets.

Tax-Funded Assets

For 2022, the Township of Nairn & Hyman's forecasted property tax revenue totals $920,000. Annual capital requirements for tax-funded assets total $1,519,659 against available capital funding of $377,000. This creates a funding deficit of $1,142,659.

To close this annual gap, the Township's property tax revenue would need to increase by 124%. This will allow the Township to meet its average annual requirements of $1.5 million for tax-funded categories.

Table 174 Increase Needed in Property Taxation Revenue to Meet Annual Infrastructure Needs

2022 Property Taxation Revenue	Additional Revenue Needed for Infrastructure	% Increase Needed
$920,000	$1,143,560	124%

To achieve this increase, several scenarios have been developed using phase-in periods ranging from five to 20 years. Shorter phase-in periods may place too high a burden on taxpayers, whereas a phase-in period beyond 20 years may see a continued deterioration of infrastructure, leading to larger backlogs.

Table 45 Phasing in Tax Increases

Total % Increase Needed in Annual Property Taxation Revenues	Phase-in Period			
	5 Years	10 Years	15 Years	20 Years
124%	17.6%	8.5%	5.6%	4.2%

Funding 100% of annual capital requirements ensures that major capital events, including replacements, are completed as required. Under this scenario, projects are unlikely to be deferred to future years. This delivers the highest asset performance and customer levels of service.

Rate-Funded Assets

For 2022, the Township of Nairn and Hyman's forecasted water rate revenues total $264,000. Annual capital requirements for water assets totals $189,571 against available capital funding of $113,000. This creates a funding deficit of $76,571.

To close this annual gap, the Township's water revenues would need to increase by 29%. This will allow the Township to meet its average annual requirements of $0.19 million.

Table 46 Increase Needed in Water Rate Revenues to Meet Annual Infrastructure Needs

Category	2022 Rate Revenues	Additional Revenue Needed for Infrastructure	% Increase Needed
Water	$264,000	$76,560	29%

To achieve these increases, several scenarios have been developed using phase-in periods ranging from five to 20 years. As with tax-funded assets, short phase-in periods may require excessive rate increases, whereas more protracted timeframes may lead to larger backlogs and more unpredictable spending on emergency repairs and replacements.

Table 47 Phasing in Rate Increases

Category	Total % Increase Required in Rate Revenues	Phase-in Period			
		5 Years	10 Years	15 Years	20 Years
Water	29%	5.3%	2.6%	1.8%	1.3%

Lowering Target Funding Levels

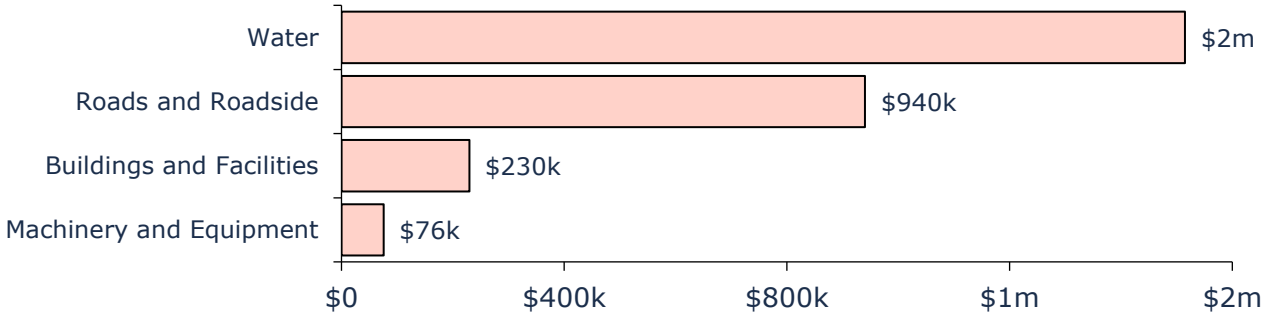
The above scenarios assume that the Township should target full funding for all asset classes. That is, it should strive to meet 100% of its average annual capital requirements of $1.7 million. If this target funding level is reduced, the total tax revenue and rate increases required would also decrease. However, this approach is not desirable as it reduces the Township's financial capacity to maintain its infrastructure in a state of good repair, yielding the following potential consequences:

- reduced asset performance and increased rate of asset failures; with a longer replacement cycle, assets may remain in service beyond their useful life;
- continuation of the 'worst-first' or reactive approach to infrastructure management and project selection;
- reduced customer service levels and increases in citizen complaints;
- potential reputational damage;
- increased risk to public health and safety;
- project deferrals or cancellations, leading to further accumulation of existing infrastructure backlogs

Infrastructure Backlogs

The annual tax and rate increases proposed are designed to eliminate annual infrastructure deficits. However, they do not address existing backlogs. Figure 22 shows that the current infrastructure backlog totals approximately $2.8 million across all asset categories analyzed in this AMP. However, as many assets did not have condition assessment data available, age was used to estimate backlog figures. As a result, the figure below may be an under- or overstatement of actual asset needs. Condition assessment data will be essential in developing more accurate and credible estimates.

Figure 22 Current Infrastructure Backlog by Asset Category



Eliminating backlogs will require prioritizing projects, ideally through continuous improvements and application of the Township's risk models to augment staff judgement. This risk-based approach will ensure that project selection is objective, supports delivery of the Township's service level targets, and is in line with long-term strategic objectives.

Reserve Levels and Use of Debt

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

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

Table 18 summarizes the size of current infrastructure reserves for the five core asset categories. Across all asset categories in this AMP, infrastructure reserves total $0.7 million, or 1% of the total current replacement value of assets. These reserves are available for use for various infrastructure-related expenditures as needed and for potential tax stabilization.

Table 18 Infrastructure Reserve Levels

Asset Category	Closing Balance on December 31, 2021
Roads and Roadside	$89,000
Water	$256,000
Buildings and Facilities	$31,000
Machinery and Equipment	$164,000
Vehicles	$164,000
Total	**$704,000**

There is considerable debate in the municipal sector on the appropriate level of reserves that an organization should have on hand. No clear guideline has gained widespread acceptance.

Factors that the Township should consider when determining its capital reserve requirements include breadth of services provided; age and condition of infrastructure; use and level of debt; economic condition and outlook; and internal reserve and debt policies.

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

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 plan for new infrastructure or the upgrade or disposal of existing infrastructure more effectively. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

Based on the 2021 Census, the community's current population is 373 residents, an increase of 9.1% from 2016 that exceeds the provincial average rate of 5.8%, although historically the Township has experienced a decline in population from 2006 to 2016. Table provides a summary of the total historical population.

Table 49 Historical Population

	2001	2006	2011	2016	2021
Population	420	493	477	342	373

Growth Plan for Northern Ontario

The Township's Official Plan (2012) identified the importance of coordination in land use planning decisions and identifies a series of related interests and projects that shall be considered and to the extent reasonable and required, be in accordance with. The Growth Plan for Northern Ontario is identified as a related interest. The Northern Ontario Growth Plan's (2010-2035) purpose is to enable growth planning that is integrated across municipal boundaries within a common geographic perspective (i.e., Northern Ontario) and to ensure a long-term and coordination visions of growth policies among all levels of government. The intended result is coordinated decision making that reflects diverse needs of rural, urban, remote, and Aboriginal communities

Impact of Growth on Lifecycle Activities

By July 1, 2025, the Township's asset management plan must include a discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.

Based on the Township's Official Plan that focuses on growth to areas with existing infrastructure and self-serviced lots, it is likely that the Township will not require expansion of existing infrastructure and services. However, if growth-related assets are constructed or acquired, they should be integrated into the Township's AMP and the primary asset inventory. While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the Township will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to, at a minimum, maintain the current level of service.

Recommendations & Considerations

Financial Strategies

1. Review feasibility of adopting a full-funding scenario that achieve 100% of average annual requirements for the asset categories analyzed in this AMP. This involves:
    a. implementing a 4.2% annual tax increase over a 20-year phase-in period and allocating the full increase in revenue toward tax-funded asset categories;
    b. implementing a 1.8% rate increase for water over a 15-year phase-in period,
    c. continued allocation of OCIF, CCBF, OMPF, and NORDS funding as previously outlined in Table ;
    d. using risk frameworks and staff judgement to prioritize projects, particularly to aid in elimination of existing infrastructure backlogs;

Although difficult to capture, inflation costs, supply chain issues, and fluctuations in commodity prices will also influence capital expenditures.

Better Asset Management Through Better Asset Data

1. Ensure the development of a centralized asset inventory, with a high level of data maturity and integrity, in the Citywide database in order to use database functionality and operationalize asset management.
2. Componentize facilities data using Uniformat II Code standard for building classifications. This can be accomplished during building condition assessments. This will improve long-term replacement projections and better align system-generated forecasts with capital budgets.
3. Continuously review, refine, and calibrate lifecycle and risk strategies to better reflect actual practices and improve capital projections. In particular:
    a. the timing of various lifecycle events, the triggers for treatment, anticipated impacts of each treatment, and costs;
    b. the various attributes used to estimate the likelihood and consequence of asset failures, and their respective weightings.
4. Asset management planning is highly sensitive to replacement costs. Periodically update replacement costs based on recent projects, invoices, or estimates, as well as condition assessments, or any other technical reports and studies. Material and labour costs can fluctuate due to local, regional, and broader market trends, and substantially so during major world events. As a result, accurately estimating the replacement cost of like-for-like assets can be challenging. Ideally, several recent projects over multiple years should be used. Staff judgement and historical data can help attenuate extreme and temporary fluctuations in cost estimates and keep them realistic.

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

Risk and Levels of Service

6. Risk models and matrices can play an important role in identifying high-value assets, and developing an action plan which may include repair, rehabilitation, replacement, or further evaluation through condition assessments. As a result, project selection and the development of multi-year capital plans can become more strategic and objective. Initial models have been built into Citywide for all asset groups. These models reflect current data, which was limited. As the data evolves and new attribute information is obtained, these models should also be refined and updated.
7. Although Ontario Regulation 588/17 requires reporting on specific, prescribed KPIs for the Township's core assets, municipalities have discretion on the KPIs they select to track the performance of their non-core assets, such as buildings and vehicles. This information is required for the 2024 iteration of the AMP. The KPIs established in this AMP for non-core assets should be reviewed before the 2025 requirements and, as available, data on current performance should be centralized and tracked to support any calibration of service levels ahead of O. Reg's 2025 requirements on proposed levels of service.
8. Staff should monitor evolving local, regional, and environmental trends to identify factors that may shape the demand and delivery of infrastructure programs. These can include population growth, and the nature of population growth; climate change and extreme weather events; and economic conditions and the local tax base. This data can also be used to revise service level targets.

Appendix A: Infrastructure Report Card

The table below services as an infrastructure report card, providing the key data points from each asset category.

Table 50 - Core Infrastructure Report Card

Asset Category	Replacement Cost (millions)	Asset Condition	Financial Capacity	
Roads and Roadside	$51.7	Fair	Annual Requirement:	$1,283,304
			Funding Available:	$372,000
			Annual Deficit:	**$911,304**
Water	$10.0	Good	Annual Requirement:	$189,571
			Funding Available:	$113,000
			Annual Deficit:	**$76,571**
Buildings and Facilities	$4.6	Fair	Annual Requirement:	$92,692
			Funding Available:	$0
			Annual Deficit:	**$92,692**
Machinery and Equipment	$0.1	Poor	Annual Requirement:	$11,721
			Funding Available:	$2,000
			Annual Deficit:	**$9,721**
Vehicles	$2.4	Fair	Annual Requirement:	$131,943
			Funding Available:	$3,000
			Annual Deficit:	**$128,943**
Asset Portfolio	**$68.8**	**Fair**	Annual Requirement:	$1,709,231
			Funding Available:	$490,000
			Annual Deficit:	**$1,219,231**

Appendix B: O. Reg. 588/17 Compliance

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet for each of the 3 years.

Table 51 - Ontario Regulation 588/17 Compliance Snapshot

O. Reg. Requirement	2022 Compliance		2024 Compliance		2025 Compliance
	Core	Non-Core	Core	Non-Core	Core and Non-Core
1.0 Asset Inventory					
1.1 Asset Summary	Yes	N/A	Yes	Yes	No
1.2 Replacement Cost	Yes		Yes	Yes	No
1.3 Average Age	Yes		Yes	Yes	No
1.4 Condition	Yes		Yes	Yes	No
1.5 Condition Assessment Approach	Yes		Yes	Yes	No
2.0 Lifecycle Activities					
2.1 Identify Full Asset Lifecycle	Yes	N/A	Yes	Yes	No
2.2 Document Lifecycle Activities	Yes		Yes	Yes	No
2.3 Quantify Asset Risk	Yes		Yes	Yes	No
2.4 Lifecycle Cost Analysis	Yes		Yes	Yes	No
3.0 Growth					
3.1 Population and Economic assumptions	Yes	N/A	Yes	Yes	No
3.2 Document impact of growth on capital planning	N/A		Yes	Yes	No
4.0 Current Level of Service					
4.1 Define and document current LOS metrics	Yes	N/A	Yes	Yes	No
5.0 Proposed Level of Service					
5.1 Define Proposed LOS	N/A	N/A	N/A	N/A	No
5.2 Difference b/w Current and Proposed LOS					No
5.3 Required Lifecycle Activities and associated Risk					No
5.4 Achievability of Proposed LOS					No
5.5 Affordability of Proposed LOS					No
5.6 Lifecycle activities and risk associated with potential funding shortfall					No

Appendix C: 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

Appendix D: Township Asset Inventory

The table below is an overview of the asset inventory that has been used to develop this AMP. The Citywide asset manager module assigns a condition rating that is based on specific data fields and a risk rating that is based on the established risk frameworks.

Table 52 - Asset Inventory

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
3	Recreation	Buildings and Facilities	Cultural and Recreational	Community Centre	1976-12-31	50	4.9	1	Quantity	$1,047,379	2022-07-01	$20,948	61	12
4	Administration	Buildings and Facilities	Administrative	Municipal Office	1992-03-31	50	20.2	1	Quantity	$160,822	2022-07-01	$3,216	61	10
5	Public Works	Buildings and Facilities	Public Works	Nairn Garage	1980-12-31	50	8.9	1	Quantity	$306,800	2022-07-01	$6,136	61	12
6	Fire Department	Buildings and Facilities	Fire and Emergency	Nairn Fire Hall	1980-12-31	50	8.9	1	Quantity	$1,471,982	2022-07-01	$29,440	42	17
7	Fire Department	Buildings and Facilities	Fire and Emergency	Hyman Fire Hall	1999-12-31	50	27.9	1	Quantity	$750,000	2022-07-01	$15,000	42	15
8	Recreation	Buildings and Facilities	Cultural and Recreational	Rink Building	1999-12-31	50	27.9	1	Quantity	$203,154	2022-07-01	$4,063	61	11
9	Recreation	Buildings and Facilities	Cultural and Recreational	All-Sports Outdoor Arena	2008-02-12	50	36.1	1	Quantity	$309,471	2022-07-01	$6,189	61	10
10	Recreation	Buildings and Facilities	Cultural and Recreational	Baseball Pavilion	1983-12-31	40	1.9	1	Quantity	$60,172	2022-07-01	$1,504	24	17
11	Public Works	Buildings and Facilities	Public Works	Sand Shed	1980-12-31	45	3.9	1	Quantity	$20,425	2022-07-01	$454	23	13
481	No Department	Buildings and Facilities	Public Works	Landfill Asset	1975-12-31	40	-6.1	1	Quantity	$229,649	2022-07-01	$5,741	0	23
478	Public Works	Machinery and Equipment	Public Works	2002 John Deer 450 C Loader	2015-09-23	10	3.7	1	Quantity	$19,682	2022-05-01	$1,968	77	7
479	Public Works	Machinery and Equipment	Public Works	2001 John Deer Backhoe	2007-05-18	10	-4.7	1	Quantity	$75,790	2022-05-01	$7,579	0	19
480	Community Centre	Machinery and Equipment	Cultural and Recreational	Playground	2018-10-31	10	6.8	1	Quantity	$21,737	2022-05-01	$2,174	95	4
35	Public Works	Roads and Roadside	Asphalt Roads	Sand Bay Road	1950-12-31	25	-46.1	1,000	Length (m)	$2,296,000	2022-07-01	$91,840	76	10
36	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	13.5	Length (m)	$15,000	2022-07-01	$300	57	3
37	Public Works	Roads and Roadside	Street Signs	Sand Bay Road	1980-12-31	17	-24.1	7	Quantity	$3,310	2022-06-01	$195	0	7
38	Public Works	Roads and Roadside	Streetlights	Sand Bay Road	1991-12-31	10	-5.1	1	Quantity	$6,194	2022-05-01	$619	0	8
41	Public Works	Roads and Roadside	Surface Treated Roads	Sand Bay Road	1950-12-31	20	-51.1	500	Length (m)	$784,000	2022-07-01	$39,200	62	12
42	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
43	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
44	Public Works	Roads and Roadside	Street Signs	Sand Bay Road	1980-12-31	17	-5.1	2	Quantity	$3,310	2022-06-01	$195	0	7
47	Public Works	Roads and Roadside	Surface Treated Roads	Sand Bay Road	1950-12-31	20	-51.1	1,700	Length (m)	$2,665,600	2022-07-01	$133,280	26	24
48	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
49	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
50	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
51	Public Works	Roads and Roadside	Street Signs	Sand Bay Road	1980-12-31	17	-24.1	5	Quantity	$3,971	2022-06-01	$234	0	7
54	Public Works	Roads and Roadside	Surface Treated Roads	Sand Bay Road	1950-12-31	20	-51.1	5,900	Length (m)	$9,251,200	2022-07-01	$462,560	47	19
55	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
56	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	9	Length (m)	$15,000	2022-07-01	$300	57	3
57	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	9	Length (m)	$15,000	2022-07-01	$300	57	3
58	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	9	Length (m)	$15,000	2022-07-01	$300	57	3
59	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
63	Public Works	Roads and Roadside	Surface Treated Roads	Sand Bay Road	1950-12-31	20	-51.1	4,900	Length (m)	$7,683,200	2022-07-01	$384,160	77	10
64	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
65	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
66	Public Works	Roads and Roadside	Culverts	Sand Bay Road	1980-12-31	50	8.9	8.5	Length (m)	$15,000	2022-07-01	$300	57	3
67	Public Works	Roads and Roadside	Street Signs	Sand Bay Road	1980-12-31	17	-24.1	7	Quantity	$4,633	2022-06-01	$273	0	7
70	Public Works	Roads and Roadside	Surface Treated Roads	Sand Bay Road/Dumont Rd	1950-12-31	20	-51.1	500	Length (m)	$784,000	2022-07-01	$39,200	62	11
71	Public Works	Roads and Roadside	Culverts	Sand Bay Road/Dumont Rd	1980-12-31	50	8.9	10	Length (m)	$15,000	2022-07-01	$300	57	3
72	Public Works	Roads and Roadside	Culverts	Sand Bay Road/Dumont Rd	1980-12-31	50	8.9	10	Length (m)	$15,000	2022-07-01	$300	57	3
73	Public Works	Roads and Roadside	Street Signs	Sand Bay Road/Dumont Rd	1980-12-31	17	-24.1	7	Quantity	$4,633	2022-06-01	$273	0	7
76	Public Works	Roads and Roadside	Surface Treated Roads	Birch Street	1950-12-31	20	-51.1	800	Length (m)	$1,254,400	2022-07-01	$62,720	92	4
77	Public Works	Roads and Roadside	Culverts	Birch Street	1980-12-31	50	8.9	13.5	Length (m)	$15,000	2022-07-01	$300	57	3
78	Public Works	Roads and Roadside	Street Signs	Birch Street	1980-12-31	20	-21.1	4	Quantity	$2,648	2022-06-01	$132	0	7
79	Public Works	Roads and Roadside	Streetlights	Birch Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
80	Public Works	Roads and Roadside	Streetlights	Birch Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
83	Public Works	Roads and Roadside	Asphalt Roads	Old Nairn Road	1950-12-31	25	-46.1	2,000	Length (m)	$4,592,000	2022-07-01	$183,680	91	6
84	Public Works	Roads and Roadside	Street Signs	Old Nairn Road	1980-12-31	17	-24.1	12	Quantity	$7,943	2022-06-01	$467	0	7

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
85	Public Works	Roads and Roadside	Streetlights	Old Nairn Road	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
88	Public Works	Roads and Roadside	Asphalt Roads	Day Street	1950-12-31	25	-46.1	600	Length (m)	$1,377,600	2022-07-01	$55,104	91	6
89	Public Works	Roads and Roadside	Culverts	Day Street	1980-12-31	50	8.9	10	Length (m)	$15,000	2022-07-01	$300	57	3
90	Public Works	Roads and Roadside	Street Signs	Day Street	1980-12-31	20	-21.1	1	Quantity	$662	2022-06-01	$33	0	7
93	Public Works	Roads and Roadside	Asphalt Roads	Minto St & McIntyre St	1950-12-31	25	-46.1	1,000	Length (m)	$2,296,000	2022-07-01	$91,840	91	6
94	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
95	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
96	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
97	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
98	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
99	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
100	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
101	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
102	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
103	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
104	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
105	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
106	Public Works	Roads and Roadside	Culverts	Minto St & McIntyre St	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
107	Public Works	Roads and Roadside	Street Signs	Minto St & McIntyre St	1980-12-31	20	-21.1	13	Quantity	$8,605	2022-06-01	$430	0	7
108	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
109	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
110	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
111	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
112	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
113	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
114	Public Works	Roads and Roadside	Streetlights	Minto St & McIntyre St	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
117	Public Works	Roads and Roadside	Asphalt Roads	Minto Street	1950-12-31	25	-46.1	600	Length (m)	$1,377,600	2022-07-01	$55,104	76	10
118	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
119	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
120	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
121	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
122	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
123	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
124	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
125	Public Works	Roads and Roadside	Culverts	Minto Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
126	Public Works	Roads and Roadside	Street Signs	Minto Street	1980-12-31	20	-21.1	16	Quantity	$10,590	2022-06-01	$530	0	7
127	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
128	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
129	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
130	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
131	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
132	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
133	Public Works	Roads and Roadside	Streetlights	Minto Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
136	Public Works	Roads and Roadside	Asphalt Roads	Ferry Lane	1950-12-31	25	-46.1	400	Length (m)	$918,400	2022-07-01	$36,736	27	18
137	Public Works	Roads and Roadside	Culverts	Ferry Lane	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
138	Public Works	Roads and Roadside	Culverts	Ferry Lane	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
139	Public Works	Roads and Roadside	Street Signs	Ferry Lane	1980-12-31	20	-21.1	11	Quantity	$7,281	2022-06-01	$364	0	7
140	Public Works	Roads and Roadside	Streetlights	Ferry Lane	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
141	Public Works	Roads and Roadside	Streetlights	Ferry Lane	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
142	Public Works	Roads and Roadside	Streetlights	Ferry Lane	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
145	Public Works	Roads and Roadside	Asphalt Roads	Chown Street	1950-12-31	25	-46.1	300	Length (m)	$688,800	2022-07-01	$27,552	76	8
146	Public Works	Roads and Roadside	Culverts	Chown Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
147	Public Works	Roads and Roadside	Street Signs	Chown Street	1980-12-31	20	-21.1	2	Quantity	$1,324	2022-06-01	$66	0	7
148	Public Works	Roads and Roadside	Streetlights	Chown Street	1991-12-31	20	-5.1	1	Quantity	$4,955	2022-05-01	$248	0	8
149	Public Works	Roads and Roadside	Streetlights	Chown Street	1991-12-31	20	-5.1	1	Quantity	$4,955	2022-05-01	$248	0	8
152	Public Works	Roads and Roadside	Asphalt Roads	Spencer Lane North	1950-12-31	25	-46.1	200	Length (m)	$459,200	2022-07-01	$18,368	61	9

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
153	Public Works	Roads and Roadside	Culverts	Spencer Lane North	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
154	Public Works	Roads and Roadside	Culverts	Spencer Lane North	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
155	Public Works	Roads and Roadside	Culverts	Spencer Lane North	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
156	Public Works	Roads and Roadside	Street Signs	Spencer Lane North	1980-12-31	20	-21.1	3	Quantity	$1,986	2022-06-01	$99	0	7
157	Public Works	Roads and Roadside	Streetlights	Spencer Lane North	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
158	Public Works	Roads and Roadside	Streetlights	Spencer Lane North	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
161	Public Works	Roads and Roadside	Asphalt Roads	Front Street	1950-12-31	25	-46.1	200	Length (m)	$459,200	2022-07-01	$18,368	61	9
162	Public Works	Roads and Roadside	Street Signs	Front Street	1980-12-31	20	-21.1	14	Quantity	$9,267	2022-06-01	$463	0	7
163	Public Works	Roads and Roadside	Streetlights	Front Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
164	Public Works	Roads and Roadside	Streetlights	Front Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
165	Public Works	Roads and Roadside	Streetlights	Front Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
166	Public Works	Roads and Roadside	Streetlights	Front Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
167	Public Works	Roads and Roadside	Streetlights	Front Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
170	Public Works	Roads and Roadside	Asphalt Roads	McDonald Street	1950-12-31	25	-46.1	400	Length (m)	$918,400	2022-07-01	$36,736	27	20
171	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
172	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
173	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
174	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
175	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
176	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
177	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
178	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
179	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
180	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
181	Public Works	Roads and Roadside	Culverts	McDonald Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
182	Public Works	Roads and Roadside	Street Signs	McDonald Street	1980-12-31	20	-21.1	11	Quantity	$7,281	2022-06-01	$364	0	7
183	Public Works	Roads and Roadside	Streetlights	McDonald Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
184	Public Works	Roads and Roadside	Streetlights	McDonald Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
185	Public Works	Roads and Roadside	Streetlights	McDonald Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
186	Public Works	Roads and Roadside	Streetlights	McDonald Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
187	Public Works	Roads and Roadside	Streetlights	McDonald Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
188	Public Works	Roads and Roadside	Streetlights	McDonald Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
192	Public Works	Roads and Roadside	Surface Treated Roads	Nelson Street	1950-12-31	25	-46.1	200	Length (m)	$313,600	2022-07-01	$15,680	92	3
193	Public Works	Roads and Roadside	Culverts	Nelson Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
194	Public Works	Roads and Roadside	Culverts	Nelson Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
195	Public Works	Roads and Roadside	Culverts	Nelson Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
196	Public Works	Roads and Roadside	Culverts	Nelson Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
197	Public Works	Roads and Roadside	Culverts	Nelson Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
198	Public Works	Roads and Roadside	Culverts	Nelson Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
200	Public Works	Roads and Roadside	Streetlights	Nelson Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
201	Public Works	Roads and Roadside	Streetlights	Nelson Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
204	Public Works	Roads and Roadside	Asphalt Roads	Hall Street	1950-12-31	25	-46.1	200	Length (m)	$459,200	2022-07-01	$18,368	46	11
205	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
206	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
207	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
208	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
209	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
210	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
211	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
212	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
213	Public Works	Roads and Roadside	Culverts	Hall Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
214	Public Works	Roads and Roadside	Street Signs	Hall Street	1980-12-31	20	-21.1	2	Quantity	$1,324	2022-06-01	$66	0	7
215	Public Works	Roads and Roadside	Streetlights	Hall Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
216	Public Works	Roads and Roadside	Streetlights	Hall Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
217	Public Works	Roads and Roadside	Streetlights	Hall Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
218	Public Works	Roads and Roadside	Streetlights	Hall Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
221	Public Works	Roads and Roadside	Asphalt Roads	Taylor Street	1950-12-31	25	-46.1	200	Length (m)	$459,200	2022-07-01	$18,368	61	9
222	Public Works	Roads and Roadside	Culverts	Taylor Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
223	Public Works	Roads and Roadside	Culverts	Taylor Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
224	Public Works	Roads and Roadside	Culverts	Taylor Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
225	Public Works	Roads and Roadside	Culverts	Taylor Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
226	Public Works	Roads and Roadside	Culverts	Taylor Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
227	Public Works	Roads and Roadside	Street Signs	Taylor Street	1980-12-31	20	-21.1	2	Quantity	$1,324	2022-06-01	$66	0	7
228	Public Works	Roads and Roadside	Streetlights	Taylor Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
229	Public Works	Roads and Roadside	Streetlights	Taylor Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
230	Public Works	Roads and Roadside	Streetlights	Taylor Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
233	Public Works	Roads and Roadside	Asphalt Roads	Stanley Street	1950-12-31	25	-46.1	200	Length (m)	$459,200	2022-07-01	$18,368	61	9
234	Public Works	Roads and Roadside	Culverts	Stanley Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
235	Public Works	Roads and Roadside	Culverts	Stanley Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
236	Public Works	Roads and Roadside	Culverts	Stanley Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
237	Public Works	Roads and Roadside	Culverts	Stanley Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
238	Public Works	Roads and Roadside	Culverts	Stanley Street	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
239	Public Works	Roads and Roadside	Street Signs	Stanley Street	1980-12-31	20	-21.1	1	Quantity	$662	2022-06-01	$33	0	7
240	Public Works	Roads and Roadside	Streetlights	Stanley Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
241	Public Works	Roads and Roadside	Streetlights	Stanley Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
244	Public Works	Roads and Roadside	Asphalt Roads	Spencer Lane South	1950-12-31	25	-46.1	300	Length (m)	$688,800	2022-07-01	$27,552	27	18
245	Public Works	Roads and Roadside	Culverts	Spencer Lane South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
246	Public Works	Roads and Roadside	Culverts	Spencer Lane South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
247	Public Works	Roads and Roadside	Culverts	Spencer Lane South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
248	Public Works	Roads and Roadside	Culverts	Spencer Lane South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
249	Public Works	Roads and Roadside	Culverts	Spencer Lane South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
250	Public Works	Roads and Roadside	Culverts	Spencer Lane South	1980-12-31	50	8.9	15	Length (m)	$15,000	2022-07-01	$300	57	3
251	Public Works	Roads and Roadside	Street Signs	Spencer Lane South	1980-12-31	20	-21.1	3	Quantity	$1,986	2022-06-01	$99	0	7
252	Public Works	Roads and Roadside	Streetlights	Spencer Lane South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
255	Public Works	Roads and Roadside	Asphalt Roads	Edward Street South	1950-12-31	25	-46.1	300	Length (m)	$688,800	2022-07-01	$27,552	61	12
256	Public Works	Roads and Roadside	Culverts	Edward Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
257	Public Works	Roads and Roadside	Culverts	Edward Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
258	Public Works	Roads and Roadside	Culverts	Edward Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
259	Public Works	Roads and Roadside	Culverts	Edward Street South	1980-12-31	50	8.9	15	Length (m)	$15,000	2022-07-01	$300	57	3
260	Public Works	Roads and Roadside	Street Signs	Edward Street South	1980-12-31	20	-21.1	5	Quantity	$3,310	2022-06-01	$166	0	7
261	Public Works	Roads and Roadside	Streetlights	Edward Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
262	Public Works	Roads and Roadside	Streetlights	Edward Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
263	Public Works	Roads and Roadside	Streetlights	Edward Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
266	Public Works	Roads and Roadside	Asphalt Roads	Taylor Street South	1950-12-31	25	-46.1	300	Length (m)	$688,800	2022-07-01	$27,552	46	16
267	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	15	Length (m)	$15,000	2022-07-01	$300	57	3
268	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
269	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
270	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
271	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
272	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
273	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
274	Public Works	Roads and Roadside	Culverts	Taylor Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
275	Public Works	Roads and Roadside	Street Signs	Taylor Street South	1980-12-31	20	-21.1	6	Quantity	$3,971	2022-06-01	$199	0	7
276	Public Works	Roads and Roadside	Streetlights	Taylor Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
277	Public Works	Roads and Roadside	Streetlights	Taylor Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
278	Public Works	Roads and Roadside	Streetlights	Taylor Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
281	Public Works	Roads and Roadside	Asphalt Roads	Smith Street South	1950-12-31	25	-46.1	300	Length (m)	$688,800	2022-07-01	$27,552	91	5
282	Public Works	Roads and Roadside	Culverts	Smith Street South	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
283	Public Works	Roads and Roadside	Culverts	Smith Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
284	Public Works	Roads and Roadside	Culverts	Smith Street South	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
285	Public Works	Roads and Roadside	Culverts	Smith Street South	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
286	Public Works	Roads and Roadside	Street Signs	Smith Street South	1980-12-31	20	-21.1	5	Quantity	$3,310	2022-06-01	$166	0	7

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
287	Public Works	Roads and Roadside	Streetlights	Smith Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
288	Public Works	Roads and Roadside	Streetlights	Smith Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
289	Public Works	Roads and Roadside	Streetlights	Smith Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
290	Public Works	Roads and Roadside	Streetlights	Smith Street South	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
293	Public Works	Roads and Roadside	Asphalt Roads	Smith Lane	1950-12-31	75	3.9	300	Length (m)	$688,800	2022-07-01	$27,552	45	14
294	Public Works	Roads and Roadside	Culverts	Smith Lane	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
295	Public Works	Roads and Roadside	Culverts	Smith Lane	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
296	Public Works	Roads and Roadside	Culverts	Smith Lane	1980-12-31	50	8.9	6.5	Length (m)	$15,000	2022-07-01	$300	57	3
297	Public Works	Roads and Roadside	Culverts	Smith Lane	1980-12-31	50	8.9	12	Length (m)	$15,000	2022-07-01	$300	57	3
298	Public Works	Roads and Roadside	Street Signs	Smith Lane	1980-12-31	20	-21.1	1	Quantity	$662	2022-06-01	$33	0	7
301	Public Works	Roads and Roadside	Asphalt Roads	McCharles Street	1950-12-31	25	-46.1	400	Length (m)	$918,400	2022-07-01	$36,736	91	5
302	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	7.5	Length (m)	$15,000	2022-07-01	$300	0	5
303	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
304	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
305	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	10	Length (m)	$15,000	2022-07-01	$300	0	5
306	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	10	Length (m)	$15,000	2022-07-01	$300	0	5
307	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	47	Length (m)	$15,000	2022-07-01	$300	0	5
308	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
309	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
310	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
311	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
312	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
313	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
314	Public Works	Roads and Roadside	Culverts	McCharles Street	1950-12-31	50	-21.1	6.5	Length (m)	$15,000	2022-07-01	$300	0	5
315	Public Works	Roads and Roadside	Street Signs	McCharles Street	1980-12-31	20	-21.1	2	Quantity	$1,324	2022-06-01	$66	0	7
316	Public Works	Roads and Roadside	Streetlights	McCharles Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
317	Public Works	Roads and Roadside	Streetlights	McCharles Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
318	Public Works	Roads and Roadside	Streetlights	McCharles Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
319	Public Works	Roads and Roadside	Streetlights	McCharles Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
320	Public Works	Roads and Roadside	Streetlights	McCharles Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
323	Public Works	Roads and Roadside	Asphalt Roads	Chown Street (Gay Lane)	1950-12-31	25	-46.1	100	Length (m)	$229,600	2022-07-01	$9,184	76	6
324	Public Works	Roads and Roadside	Culverts	Chown Street (Gay Lane)	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
325	Public Works	Roads and Roadside	Street Signs	Chown Street (Gay Lane)	1980-12-31	20	-21.1	2	Quantity	$1,324	2022-06-01	$66	0	7
326	Public Works	Roads and Roadside	Streetlights	Chown Street (Gay Lane)	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
327	Public Works	Roads and Roadside	Streetlights	Chown Street (Gay Lane)	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
330	Public Works	Roads and Roadside	Gravel Roads	Laneway	1950-12-31	75	3.9	300	Length (m)	$400,200	2022-07-01	$20,010	76	6
331	Public Works	Roads and Roadside	Culverts	Laneway	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
334	Public Works	Roads and Roadside	Asphalt Roads	Edward Street	1950-12-31	25	-46.1	100	Length (m)	$229,600	2022-07-01	$9,184	0	14
335	Public Works	Roads and Roadside	Culverts	Edward Street	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
336	Public Works	Roads and Roadside	Street Signs	Edward Street	1980-12-31	20	-21.1	5	Quantity	$3,310	2022-06-01	$166	0	7
339	Public Works	Roads and Roadside	Asphalt Roads	Spanish Lane	1950-12-31	25	-46.1	100	Length (m)	$229,600	2022-07-01	$9,184	27	14
342	Public Works	Roads and Roadside	Asphalt Roads	Ketchabaw Road	1950-12-31	25	-46.1	500	Length (m)	$1,148,000	2022-07-01	$45,920	61	13
343	Public Works	Roads and Roadside	Street Signs	Ketchabaw Road	1980-12-31	20	-21.1	5	Quantity	$3,310	2022-06-01	$166	0	7
346	Public Works	Roads and Roadside	Gravel Roads	Sand Bay Road (Hyman)	1950-12-31	75	3.9	400	Length (m)	$533,600	2022-07-01	$26,680	61	12
347	Public Works	Roads and Roadside	Culverts	Sand Bay Road (Hyman)	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
348	Public Works	Roads and Roadside	Street Signs	Sand Bay Road (Hyman)	1980-12-31	20	-21.1	3	Quantity	$1,986	2022-06-01	$99	0	7
351	Public Works	Roads and Roadside	Gravel Roads	Baker Drive	1950-12-31	75	3.9	600	Length (m)	$800,400	2022-07-01	$40,020	76	8
352	Public Works	Roads and Roadside	Culverts	Baker Drive	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
353	Public Works	Roads and Roadside	Street Signs	Baker Drive	1980-12-31	20	-21.1	3	Quantity	$1,986	2022-06-01	$99	0	7
356	Public Works	Roads and Roadside	Gravel Roads	Coal Dock Road	1950-12-31	75	3.9	700	Length (m)	$933,800	2022-07-01	$46,690	76	8
357	Public Works	Roads and Roadside	Culverts	Coal Dock Road	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
358	Public Works	Roads and Roadside	Street Signs	Coal Dock Road	1980-12-31	20	-21.1	6	Quantity	$3,971	2022-06-01	$199	0	7
361	Public Works	Roads and Roadside	Gravel Roads	Belle Bay Crescent	1950-12-31	75	3.9	700	Length (m)	$933,800	2022-07-01	$46,690	76	8
362	Public Works	Roads and Roadside	Culverts	Belle Bay Crescent	1980-12-31	50	8.9	1	Quantity	$15,000	2022-07-01	$300	57	3
363	Public Works	Roads and Roadside	Street Signs	Belle Bay Crescent	1980-12-31	20	-21.1	3	Quantity	$1,986	2022-06-01	$99	0	7
364	Public Works	Roads and Roadside	Streetlights	Smith Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
365	Public Works	Roads and Roadside	Streetlights	Smith Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
366	Public Works	Roads and Roadside	Streetlights	Smith Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
367	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
368	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
369	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
370	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
371	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
372	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
373	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
374	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
375	Public Works	Roads and Roadside	Streetlights	McIntrye Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
376	Public Works	Roads and Roadside	Streetlights	Highway 17	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
377	Public Works	Roads and Roadside	Streetlights	Highway 17	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
378	Public Works	Roads and Roadside	Streetlights	Highway 17	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
379	Public Works	Roads and Roadside	Streetlights	Davis Street	1991-12-31	10	-5.1	1	Quantity	$4,955	2022-05-01	$496	0	8
380	Fire	Vehicles	Fire and Emergency	2000 Freightliner MCV	2000-01-31	20	-2.0	1	Quantity	$650,000	2022-07-01	$32,500	44	17
381	Fire	Vehicles	Fire and Emergency	2005 International CC 4300	2016-10-27	20	14.8	1	Quantity	$500,000	2022-07-01	$25,000	72	10
382	Fire	Vehicles	Fire and Emergency	2018 Freightliner MaxiMetal	2019-03-29	20	17.2	1	Quantity	$650,000	2022-07-01	$32,500	91	5
383	Public Works	Vehicles	Public Works	2012 Ford F350 Pickup Crew Cab	2012-02-10	9	-0.9	1	Quantity	$63,027	2022-07-01	$7,003	70	10
384	Public Works	Vehicles	Public Works	2015 Western Star	2014-09-02	15	7.7	1	Quantity	$221,903	2022-07-01	$14,794	69	10
385	Public Works	Vehicles	Public Works	2001 John Deer Backhoe	2015-07-01	15	8.5	1	Quantity	$151,101	2022-07-01	$10,073	51	14
482	Public Works	Vehicles	Public Works	John Deere - 310SG	2007-01-01	15	0.0	1	Quantity	$151,101	2022-07-01	$10,073	51	16
12	Water	Water	Water Treatment Plant	Water Treatment Plant	1995-08-09	50	23.6	1	Quantity	$1,185,012	2022-05-01	$23,700	61	11
13	Water	Water	Water Treatment Plant	Water Treatment Plant	1995-08-09	20	-6.4	1	Quantity	$10,167	2022-05-01	$508	0	13
14	Water	Water	Water Treatment Plant	Water Treatment Plant	1995-08-09	20	-6.4	1	Quantity	$265,626	2022-05-01	$13,281	0	17
15	Water	Water	Water Treatment Plant	Water Treatment Plant	1995-08-09	20	-6.4	1	Quantity	$20,333	2022-05-01	$1,017	0	13
16	Water	Water	Water Treatment Plant	Water Treatment Plant	1995-08-09	25	-1.4	1	Quantity	$138,116	2022-05-01	$5,525	0	17
17	Water	Water	Water Treatment Plant	Water Treatment Plant	1995-08-09	25	-1.4	1	Quantity	$1,080,519	2022-05-01	$43,221	0	25

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
387	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$12,991	2022-05-01	$260	85	3
388	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
391	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
392	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$13,913	2022-05-01	$186	94	1
394	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$4,921	2022-05-01	$98	85	2
395	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
396	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$20,547	2022-05-01	$274	94	2
398	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$1,771	2022-05-01	$35	85	2
399	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
400	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$7,663	2022-05-01	$102	94	1
402	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$5,452	2022-05-01	$109	85	2
403	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
404	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$25,917	2022-05-01	$346	94	2
406	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
407	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$6,105	2022-05-01	$81	94	1
409	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$11,159	2022-05-01	$223	85	3
410	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
411	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$49,315	2022-05-01	$658	94	2
413	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$9,209	2022-05-01	$184	85	2
414	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
415	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$8,560	2022-05-01	$114	94	1
416	Nairn Centre Water	Water	Crossing	Highway Crossing	1995-08-09	50	23.6	1	Quantity	$67,661	2022-05-01	$902	85	3
417	Nairn Centre Water	Water	Crossing	Railway Crossing	1995-08-09	50	23.6	1	Quantity	$43,053	2022-05-01	$574	85	3
419	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$6,299	2022-05-01	$126	85	2
420	Nairn Centre Water	Water	Crossing	CPR crossing	1995-08-09	50	23.6	1	Quantity	$36,206	2022-05-01	$483	85	3
422	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$26,273	2022-05-01	$525	85	3
423	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2

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424	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$6,260	2022-05-01	$83	94	1
426	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
427	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$10,776	2022-05-01	$144	94	1
429	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
430	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$10,330	2022-05-01	$138	94	1
432	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$4,604	2022-05-01	$92	85	2
433	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
434	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$11,716	2022-05-01	$156	94	1
435	Nairn Centre Water	Water	Crossing	Highway Crossing	1995-08-09	50	23.6	1	Quantity	$66,915	2022-05-01	$892	85	3
437	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
438	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$17,067	2022-05-01	$228	94	2
440	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
441	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$10,264	2022-05-01	$137	94	1
443	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$5,845	2022-05-01	$117	85	2
444	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
445	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$20,871	2022-05-01	$278	94	2
447	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
448	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$4,044	2022-05-01	$54	94	1
449	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$9,549	2022-05-01	$127	94	1
450	Nairn Centre Water	Water	Crossing	Highway Crossing	1995-08-09	50	23.6	1	Quantity	$15,317	2022-05-01	$204	85	3
452	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$1,771	2022-05-01	$35	85	2
454	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$1,771	2022-05-01	$35	85	2
455	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
456	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$3,194	2022-05-01	$43	94	1
458	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$4,073	2022-05-01	$81	85	2
459	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2

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460	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$11,261	2022-05-01	$150	94	1
462	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$2,302	2022-05-01	$46	85	2
463	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
464	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$24,953	2022-05-01	$333	94	2
466	Nairn Centre Water	Water	Valves	Valves	1995-08-09	50	23.6	1	Quantity	$14,523	2022-05-01	$290	85	3
467	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
468	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$16,564	2022-05-01	$221	94	2
470	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
471	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$7,178	2022-05-01	$96	94	1
473	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
474	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$18,544	2022-05-01	$247	94	2
476	Nairn Centre Water	Water	Hydrants	Hydrants	1995-08-09	50	23.6	1	Quantity	$10,000	2022-07-01	$200	85	2
477	Nairn Centre Water	Water	Service Connections	Service Connect pipes/appurtenances & misc.	1995-08-09	75	48.6	1	Quantity	$1,814	2022-05-01	$24	94	1
483	No Department	Water	Mains	Mcintryre St	1996-07-01	80	54.5	14	Length (m)	$15,260	2022-07-01	$203	95	3
484	No Department	Water	Mains	Mcintryre St & Gay Lane	1996-07-01	80	54.5	217	Length (m)	$236,530	2022-07-01	$3,154	95	4
485	No Department	Water	Mains	Cpr Crossing	1996-07-01	80	54.5	38	Length (m)	$41,420	2022-07-01	$552	95	3
486	No Department	Water	Mains	Front St	1996-07-01	80	54.5	136	Length (m)	$148,240	2022-07-01	$1,977	95	4
487	No Department	Water	Mains	Smith St	1996-07-01	80	54.5	208	Length (m)	$226,720	2022-07-01	$3,023	95	4
488	No Department	Water	Mains	Smith St	1996-07-01	80	54.5	24	Length (m)	$26,160	2022-07-01	$349	95	3
489	No Department	Water	Mains	McDonald St	1996-07-01	80	54.5	87	Length (m)	$94,830	2022-07-01	$1,264	95	4
490	No Department	Water	Mains	Ferry Lane	1996-07-01	80	54.5	25.5	Length (m)	$27,795	2022-07-01	$371	95	3
491	No Department	Water	Mains	Mcintryre St & Gay Lane	1996-07-01	80	54.5	75	Length (m)	$81,750	2022-07-01	$1,090	95	4
492	No Department	Water	Mains	Spencer Lane	1996-07-01	80	54.5	204	Length (m)	$222,360	2022-07-01	$2,965	95	4
493	No Department	Water	Mains	Spencer Lane	1996-07-01	80	54.5	24	Length (m)	$26,160	2022-07-01	$349	95	3
494	No Department	Water	Mains	Front St	1996-07-01	80	54.5	281	Length (m)	$306,290	2022-07-01	$4,084	95	4
495	No Department	Water	Mains	Smith St	1996-07-01	80	54.5	187	Length (m)	$203,830	2022-07-01	$2,718	95	4
496	No Department	Water	Mains	Spencer Lane	1996-07-01	80	54.5	100	Length (m)	$109,000	2022-07-01	$1,453	95	4

Asset ID	Department	Category	Segment	Name	In-Service Date	Estimated Useful Life (Years)	Service Life Remaining (Years)	Adjusted Quantity	Unit of Measure	Replacement Cost	Replacement Cost Date	Annual Requirement	Projected Condition	Risk Rating
497	No Department	Water	Mains	McCharles	1996-07-01	80	54.5	403	Length (m)	$439,270	2022-07-01	$5,857	95	4
498	No Department	Water	Mains	Minto St	1996-07-01	80	54.5	186	Length (m)	$202,740	2022-07-01	$2,703	95	4
499	No Department	Water	Mains	McDonald St	1996-07-01	80	54.5	24	Length (m)	$26,160	2022-07-01	$349	95	3
500	No Department	Water	Mains	Ferry Lane	1996-07-01	80	54.5	375	Length (m)	$408,750	2022-07-01	$5,450	95	3
501	No Department	Water	Mains	Minto St	1996-07-01	80	54.5	145	Length (m)	$158,050	2022-07-01	$2,107	95	3
502	No Department	Water	Mains	Mcintryre St	1996-07-01	80	54.5	383	Length (m)	$417,470	2022-07-01	$5,566	95	3
503	No Department	Water	Mains	Mcintryre St	1996-07-01	80	54.5	28	Length (m)	$30,520	2022-07-01	$407	95	2
504	No Department	Water	Mains	Minto St	1996-07-01	80	54.5	20	Length (m)	$21,800	2022-07-01	$291	95	2
505	No Department	Water	Mains	Chown St	1996-07-01	80	54.5	101	Length (m)	$110,090	2022-07-01	$1,468	95	3
506	No Department	Water	Mains	Minto St	1996-07-01	80	54.5	61	Length (m)	$66,490	2022-07-01	$887	95	2
507	No Department	Water	Mains	Spencer Lane	1996-07-01	80	54.5	121	Length (m)	$131,890	2022-07-01	$1,759	95	3
508	No Department	Water	Mains	Front St	1996-07-01	80	54.5	60	Length (m)	$65,400	2022-07-01	$872	95	2
509	No Department	Water	Mains	Stanley St	1996-07-01	80	54.5	175	Length (m)	$190,750	2022-07-01	$2,543	95	3
510	No Department	Water	Mains	Taylor St N	1996-07-01	80	54.5	180	Length (m)	$196,200	2022-07-01	$2,616	95	3
511	No Department	Water	Mains	Hall St	1996-07-01	80	54.5	181	Length (m)	$197,290	2022-07-01	$2,631	95	3
512	No Department	Water	Mains	Nelson St	1996-07-01	80	54.5	99	Length (m)	$107,910	2022-07-01	$1,439	95	3
513	No Department	Water	Mains	McDonald St	1996-07-01	80	54.5	359	Length (m)	$391,310	2022-07-01	$5,217	95	3
514	No Department	Water	Mains	Front St	1996-07-01	80	54.5	139	Length (m)	$151,510	2022-07-01	$2,020	95	3
515	No Department	Water	Mains	Hwy 17	1996-07-01	80	54.5	104	Length (m)	$113,360	2022-07-01	$1,511	95	3
516	No Department	Water	Mains	Hwy 17	1996-07-01	80	54.5	97	Length (m)	$105,730	2022-07-01	$1,410	95	3
517	No Department	Water	Mains	Spencer Lane	1996-07-01	80	54.5	110	Length (m)	$119,900	2022-07-01	$1,599	95	3
518	No Department	Water	Mains	McCharles	1996-07-01	80	54.5	21	Length (m)	$22,890	2022-07-01	$305	95	2
519	No Department	Water	Mains	Edward St	1996-07-01	80	54.5	253	Length (m)	$275,770	2022-07-01	$3,677	95	3
520	No Department	Water	Mains	Taylor St N	1996-07-01	80	54.5	292	Length (m)	$318,280	2022-07-01	$4,244	95	3
521	No Department	Water	Mains	Smith St	1996-07-01	80	54.5	142	Length (m)	$154,780	2022-07-01	$2,064	95	3
522	No Department	Water	Mains	McDonald St	1996-07-01	80	54.5	184	Length (m)	$200,560	2022-07-01	$2,674	95	3