2024 Asset Management Plan

Township of
Sables-Spanish Rivers

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

asset management, budgeting & GIS solutions

Key Statistics

Replacement cost of asset portfolio
$283 million

Replacement cost of infrastructure per household
$164,738(2021)

Percentage of assets in fair or better condition
81%

Percentage of assets with assessed condition data
85%

Annual capital infrastructure deficit
$2.9 million

Recommended timeframe for eliminating annual infrastructure deficit
20 Years

Target reinvestment rate
1.49%

Actual reinvestment rate
0.46%

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Executive Summary

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

Scope

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

The following asset categories are addressed in further sections:

The Township 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.

Findings

The overall replacement cost of the asset categories owned by Sables-Spanish Rivers totals $283 million. 81% of all assets analysed are in fair or better condition and assessed condition data was available for 84% of assets. For the remaining 16% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation.

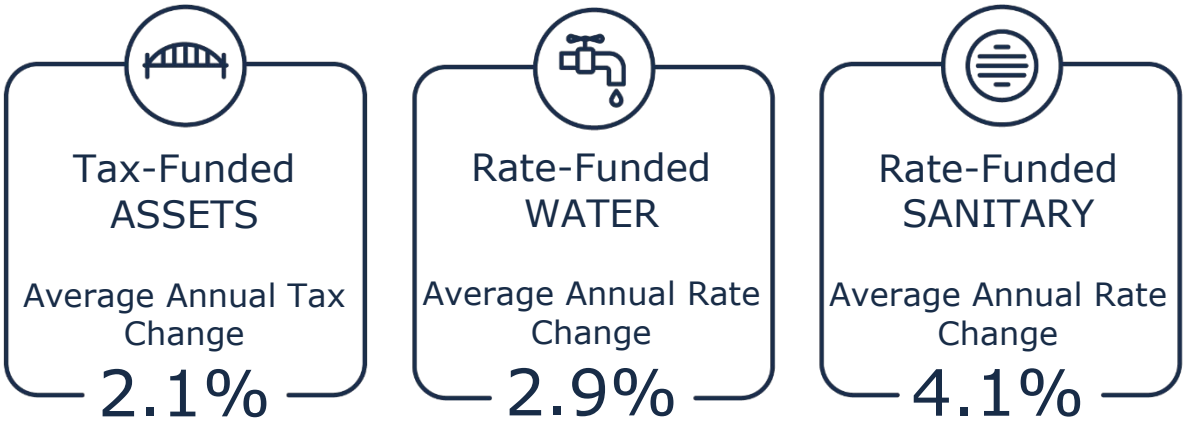
The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. By using a combination of proactive lifecycle strategies (roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Township's average annual capital requirement totals $4.2 million. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $1.3 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $2.9 million.

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

Recommendations

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



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

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

1 Introduction

1.1 Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio
- The Township's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management
- An asset management plan is a living document that should be updated regularly to inform long-term planning

1.2 Sables-Spanish Rivers Community Profile

Census Characteristic	Sables-Spanish Rivers	Ontario
Population 2021	3,237	14,223,942
Population Change 2016-2021	1.5	5.8
Total Private Dwellings	1,718	5,929,250
Population Density	4.0/km^2	15.9/km^2
Land Area	801.04 km^2	892,411.76 km^2

The Township of Sables-Spanish Rivers is located on the north shore of Georgian Bay in the Sudbury District of northern Ontario. The township was incorporated in 1998 by amalgamating the former towns of Walford, Massey, and Webbwood with the township of Spanish River and the unorganized geographic townships of May and Shakespeare.

Massey is located at the junction of the aux Sables and Spanish Rivers, close to the northern shore of Lake Huron. Chutes Provincial Park is one of its principal attractions. Massey is one of several sites that claim to be the home of broomball.

Walford is the westernmost community of the township located along Highway 17. Its economy was primarily based on logging and mining. The old Walford fire tower still stands north of the village on Tube Lake.

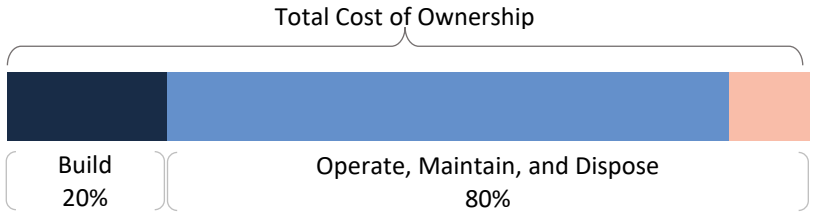
Webbwood is home of Canada's first female mayor, Barbara Hanley, in 1936.

A well-staffed medical clinic, volunteer fire department, two libraries, arena facility, two community halls, outdoor rinks, restaurants and farming history are but a few reasons why visitors to our community often become long-term residents

1.3 An Overview of Asset Management

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

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



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

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

1.3.1 Asset Management Policy

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

The Township adopted By-law No. 2019-31 "A By-law to Adopt an Asset Management Strategy Policy" in accordance with Ontario Regulation 588/17. The objective of the policy is to establish consistent standards and guidelines for management of the Township's assets by applying sound technical, social, and economic principles that consider present and future needs of users, and the service expected from the assets.

1.3.2 Asset Management Strategy

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

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.

1.3.3 Asset Management Plan

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

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

The AMP is a living document that should be updated regularly as additional asset and financial data becomes available.

1.4 Key Concepts in Asset Management

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

1.4.1 Lifecycle Management Strategies

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

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. There are several field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: maintenance, rehabilitation, and replacement.

The following table provides a description of each type of activity and the general difference in cost.

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

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

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

1.4.2 Risk Management Strategies

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

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

A high-level evaluation of asset risk and criticality was performed. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to prioritize maintenance, rehabilitation, and replacement strategies for critical assets.

1.4.3 Levels of Service

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

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

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories the province, through O. Reg. 588/17, has provided qualitative descriptions that are required. For non-core asset categories, the Township determined the qualitative descriptions. These descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

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

For core asset categories the province, through O. Reg. 588/17, has provided technical metrics that are required. For non-core asset categories, the Township determined the technical metrics that will be used. The metrics can be found in the Levels of Service subsection within each asset category.

Current and Proposed Levels of Service

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

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

1.5 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 period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012.

By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

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

1.5.1 Sables-Spanish Rivers Climate Profile

The Township of Sables-Spanish Rivers is in Northern Ontario in the district of Sudbury. The Township is expected to experience notable effects of climate change which include higher average annual temperatures, an increase in total annual precipitation, and an increase in the frequency and severity of extreme events. According to Climatedata.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – the Township of Sables-Spanish Rivers may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1981 and 2010 the annual average temperature was 4.7ºC
- Under a high emissions scenario, the annual average temperatures are projected to increase by 2 ºC by the year 2050 and by 5.7 ºC by the end of the century.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, Sables-Spanish Rivers is projected to experience an 7% increase in precipitation by the year 2050 and a 16% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

- It is expected that the frequency and severity of extreme weather events will change.

1.5.2 Integration Climate change and Asset Management

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

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.

1.6 Ontario Regulation 588/17

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

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				●

2 Scope and Methodology

2.1 Key Insights

- Sables-Spanish Rivers has 9 different asset categories and is divided between tax-funded and rate-funded categories
- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation
- Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life

2.2 Asset Categories

This asset management plan for the Township of Sable-Spanish Rivers is produced in compliance with Ontario Regulation 588/17. The July 2024 deadline under the regulation—the second of three AMPs—requires analysis of all municipal assets.

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

Asset Category	Source of Funding
Road Network	Tax Levy
Bridges & Culverts	
Stormwater Network	
Buildings	
Vehicles	
Machinery & Equipment	
Waste Management	
Water Network	User Rates
Sanitary Network	

2.3 Deriving Replacement Costs

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

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

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

2.4 Estimated Useful Life and Service Life Remaining

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

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

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

2.5 Reinvestment Rate

As assets age and deteriorate they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment rate is a measurement of available or required funding relative to the total replacement cost. By comparing the actual vs. target reinvestment rate the Township can determine the extent of any existing funding gap.

The reinvestment rate is calculated as follows:

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

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

2.6 Deriving Asset Condition

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

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the Township's asset portfolio. The table below outlines the condition rating system used 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.

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

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

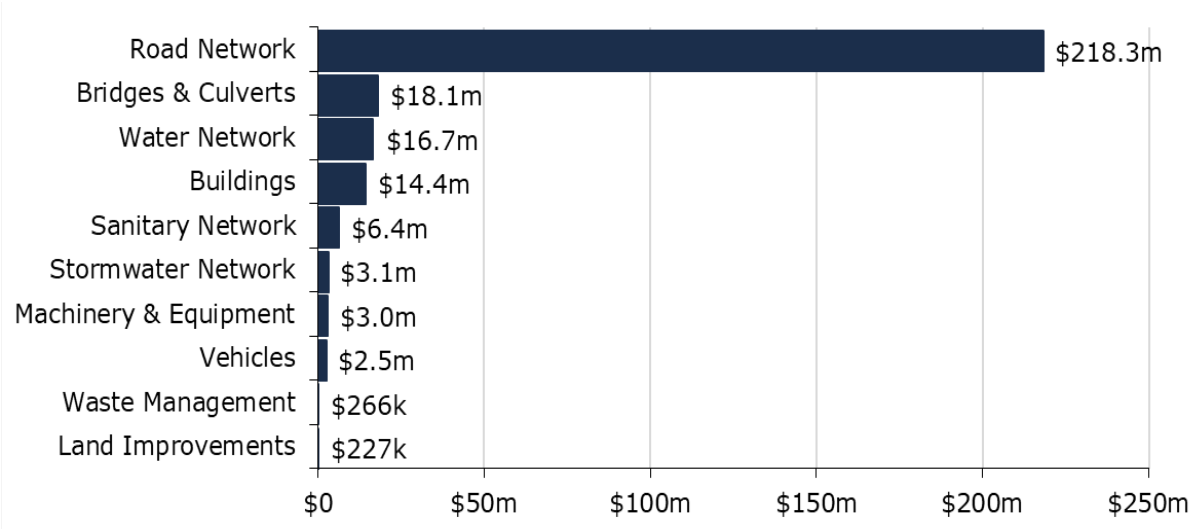
3 Portfolio Overview

3.1 Key Insights

- The total replacement cost of the Township's asset portfolio is $283 million
- The Township's target re-investment rate is 1.53%, and the actual re-investment rate is 0.46%, contributing to an expanding infrastructure deficit
- 81% of all assets are in fair or better condition
- 17% of assets are projected to require rehabilitation / replacement in the next 10 years
- Average annual capital requirements total $4.3 million per year across all assets

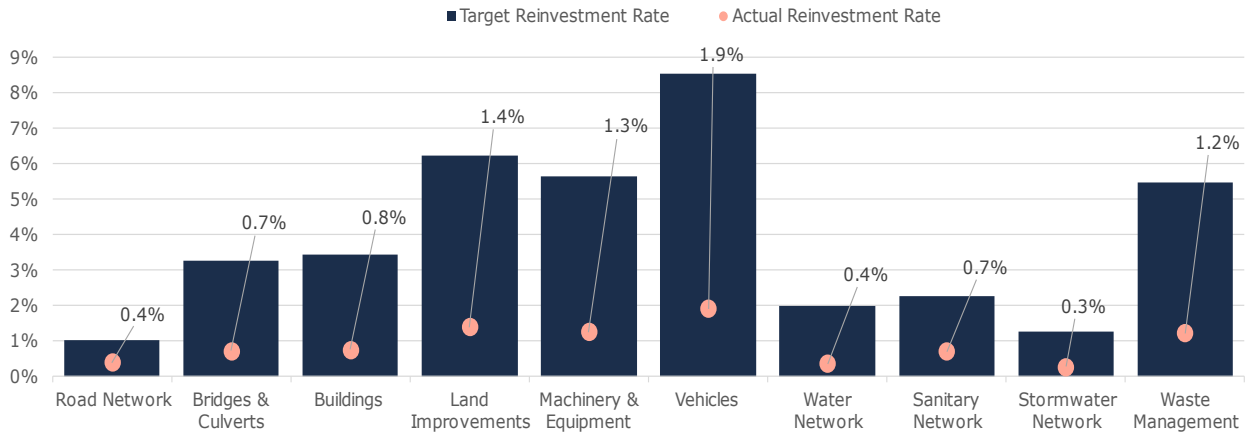
3.2 Total Replacement Cost of Asset Portfolio

The asset categories have a total replacement cost of $283 million based on inventory data from December 2023. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.



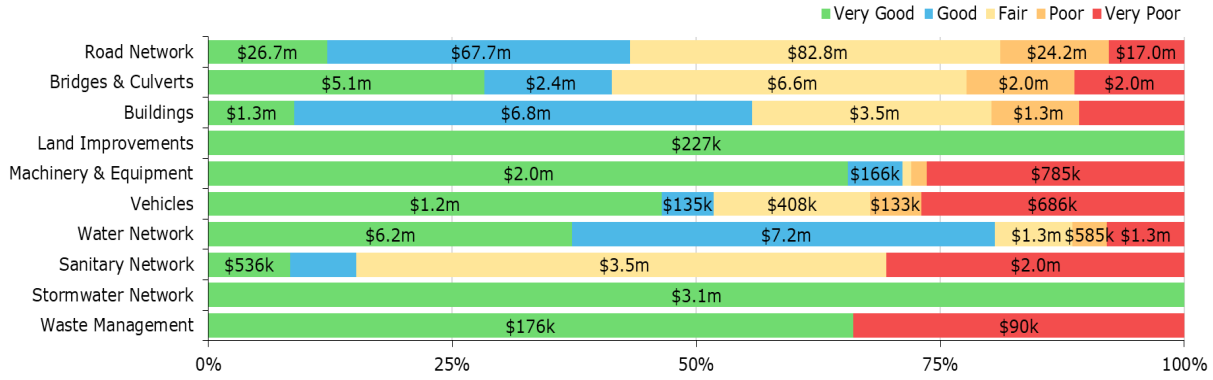
3.3 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Township should be allocating approximately $4.3 million annually, for a target reinvestment rate of 1.53%. Actual annual spending on infrastructure totals approximately $1.3 million, for an actual reinvestment rate of 0.46%.



3.4 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 88% of assets in Sables-Spanish Rivers are in fair or better condition. This estimate relies on both age-based and field condition data.



Assessed condition data is available for 85% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions.

The table below identifies the source of condition data.

Asset Category	% of Assets with Assessed Condition	Source of Condition Data
Road Network	96%	Staff Assessment
Bridges & Culverts	72%	2022 Kresin Engineering Corp
Buildings	85%	Staff Assessment
Land Improvements	27%	Staff Assessments
Sanitary Network	58%	Staff Assessments
All other Categories	0%	No Assessments

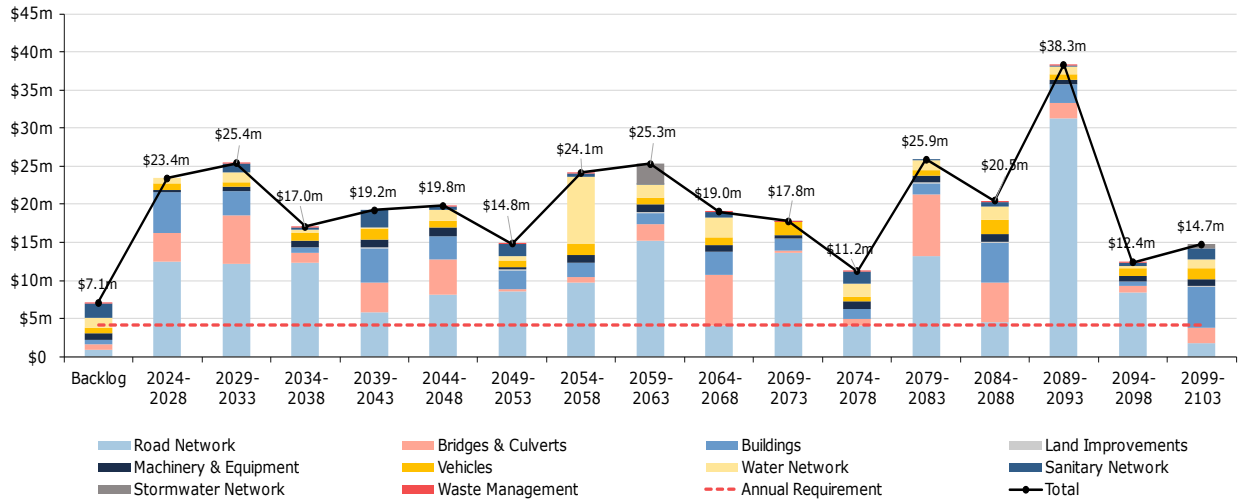
3.5 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 17% of the Township's assets will require rehabilitation / replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B.

3.6 Forecasted Capital Requirements

The development of a long-term capital forecast should include both asset rehabilitation and replacement requirements. With the development of asset-specific lifecycle strategies that include the timing and cost of future capital events, the Township can produce an accurate long-term capital forecast.

The following graph identifies capital requirements over the next 75 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements.



3.7 Risk & Criticality

The Township has noted key trends, challenges, and risks to service delivery that they are currently facing:

Capital Funding Strategies

Major capital rehabilitation and replacement projects are often entirely dependant on the availability of grant funding opportunities. When grants are not available, rehabilitation and replacement projects are often deferred.

Climate Change & Extreme Weather

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

Asset Data & Information

There is a lack of confidence in the available inventory data and condition data. Staff have been prioritizing data refinement efforts to increase the accuracy and reliability of asset data and information. Staff find it a continuous challenge to dedicate resources and time towards data collection and condition assessments to ensure that condition and asset attribute data is regularly reviewed and updated.

4 Road Network

4.1 Key Insights

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

The Township's roads and sidewalks are maintained by the roads department who is also responsible for winter snow clearing, ice control and snow removal operations of Township roads.

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

Replacement Cost	Condition	Financial Capacity	
$218,257,950	Good (62%)	Annual Requirement:	$2,214,319
		Funding Available:	$818,799
		Annual Deficit:	$1,395,520

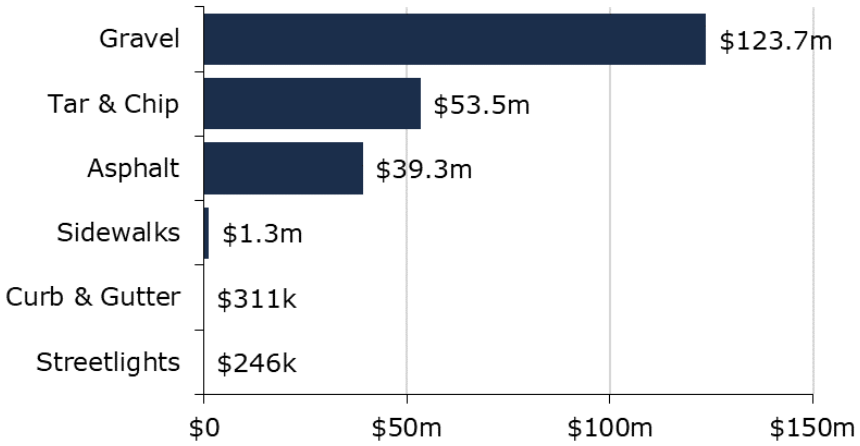
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	The road network service is accessible to the whole community in sufficient capacity (meets traffic demands) and is available under all weather conditions.
Quality	The road network is in good condition with minimal unplanned service interruptions and road closures.

4.2 Asset Inventory & Costs

The table below includes the quantity and total replacement cost of each asset segment in the Township's road inventory.

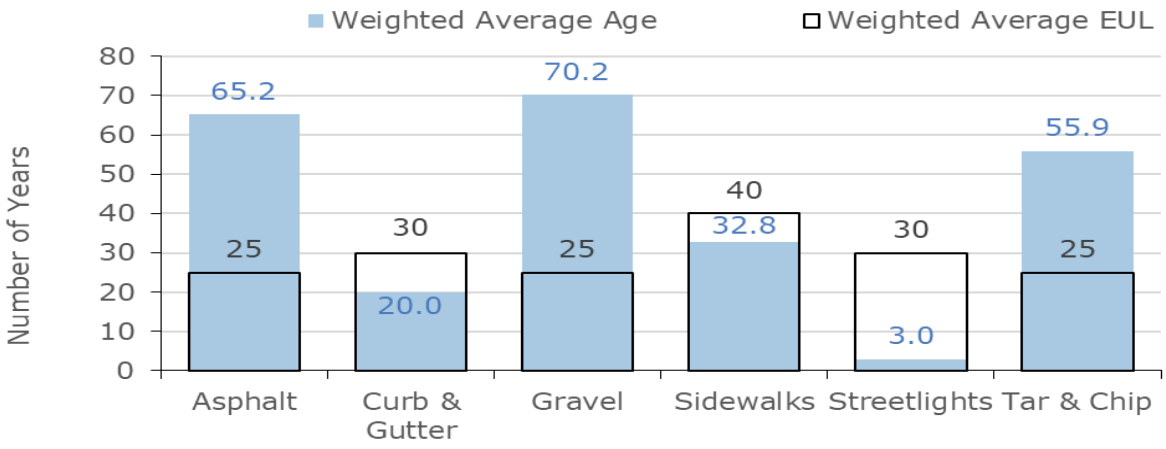
Asset Segment	Quantity	Replacement Cost
Asphalt	28,180m	$39,273,065
Curb & Gutter	2,437m	$310,817
Gravel	174,730m	$123,708,840
Sidewalks	7,221m	$1,255,435
Streetlights	333	$245,775
Tar & Chip	56,940m	$53,464,018
Total		**$218,257,950**



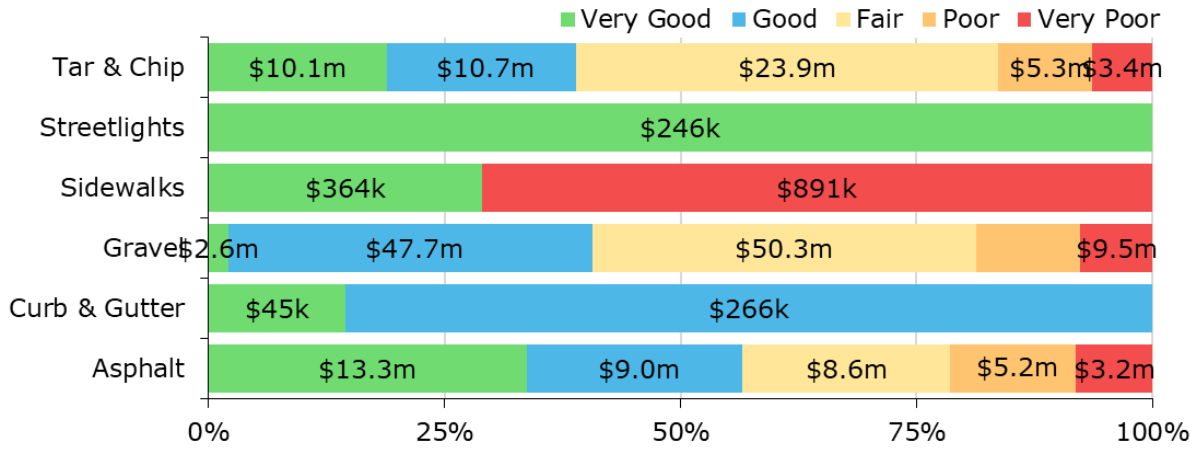
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

4.3 Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment. It is all weighted by replacement cost.



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



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

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

4.3.1 Current Approach to Condition Assessment

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

- The roads are assessed by staff internally to set priorities based on the current state

The rating criteria is used to determine the current condition of road segments and forecast future capital requirements is:

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

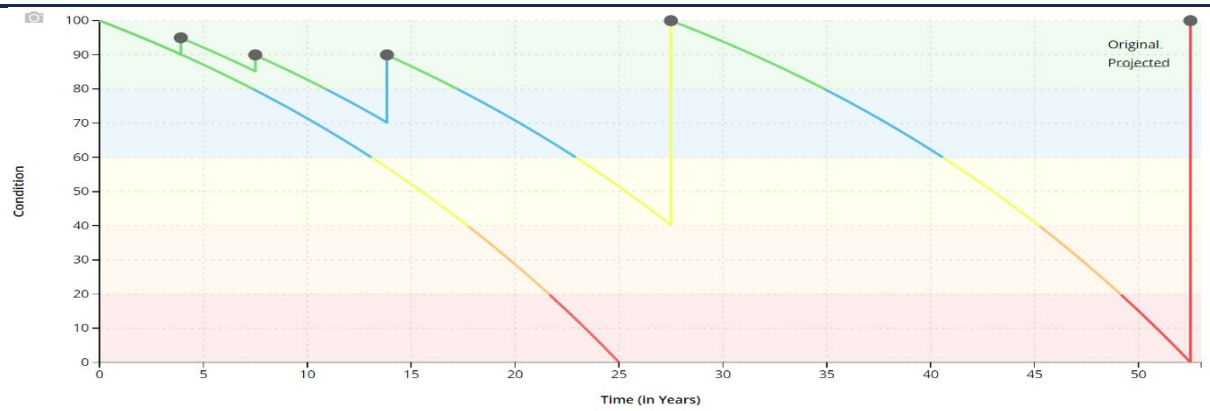
4.4 Lifecycle Management Strategy

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

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of Township owned roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

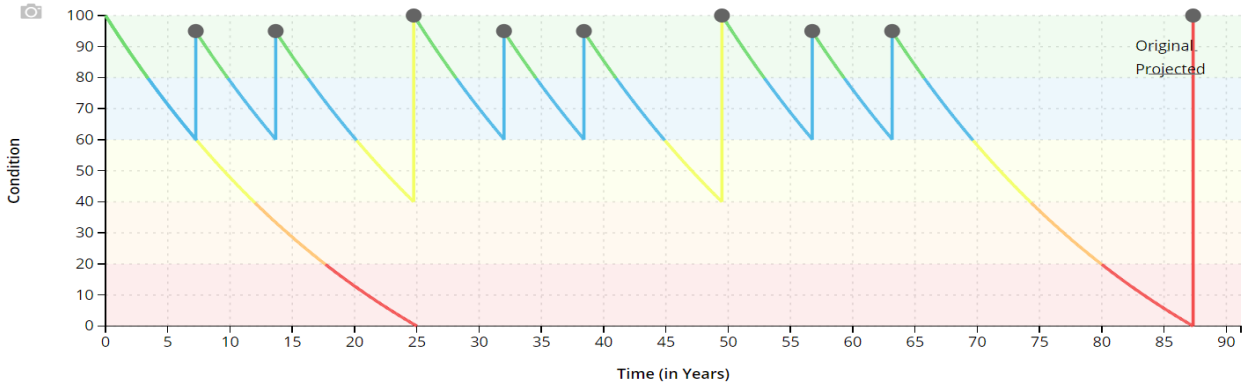
Asphalt Roads

Event Name	Event Class	Event Trigger
Crack Sealing x2	Maintenance	90 and 85 condition
Single Surface Overlay	Rehabilitation	70 to 75 condition
Asphalt Resurface (full depth)	Rehabilitation	40 to 45 condition
Full Reconstruction	Replacement	0 to 20 condition



Tar & Chip Roads

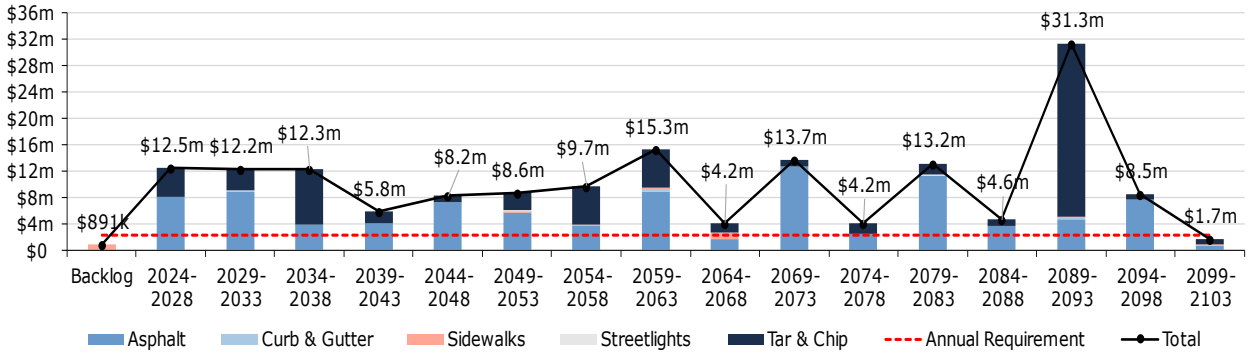
Event Name	Event Class	Event Trigger
Single Surface Treatment (SST)	Rehabilitation	60 condition
Double Surface Treatment (DST)	Rehabilitation	40 condtion
Full Reconstruction	Replacement	0 – 20 condition



The Township has developed a gravel road program that adds 50mm of gravel and shouldering every 5 years which is not captured as a capital expense. When the condition of the road reaches 20 to 40 condition the Township will do a capital rehabilitation of adding 150mm of gravel, to not have to fully replace the road section, however the Township has included the full reconstruction cost in the asset replacement value however, it is not in the annual requirement calculations.

4.4.1 Forecasted Capital Requirements

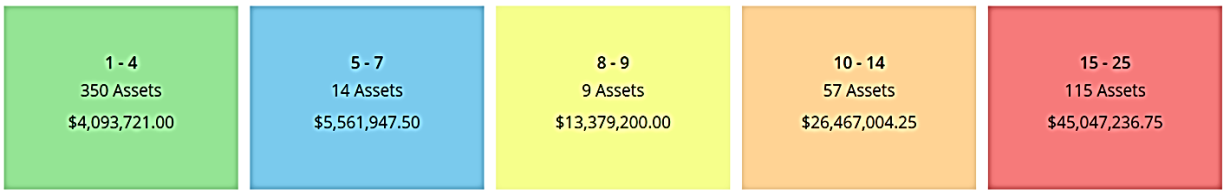
Based on the lifecycle strategies identified previously for roads, and assuming the end-of-life replacement of all other assets in this category, the following graph forecasts capital requirements for the road network. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirement. For the road network the annual capital requirement is $2.2 million



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

4.5 Risk & Criticality

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

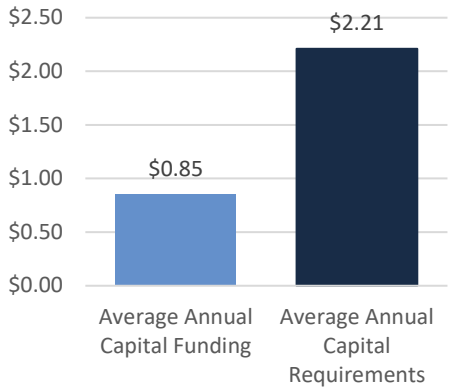
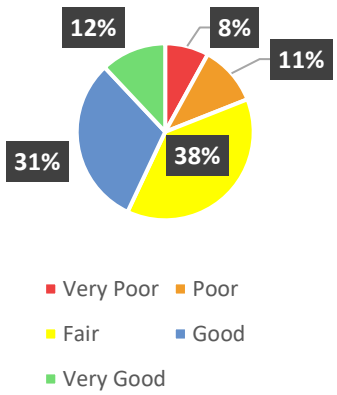
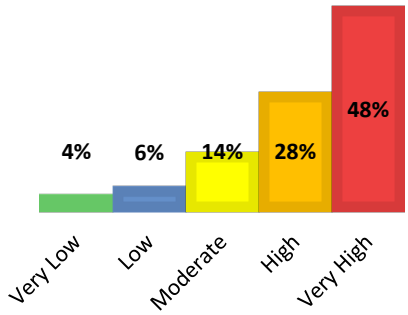


This is a high-level model developed by Township staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

4.6 Levels of Service

The following tables identify the Township's current level of service for the roads.

Cost (millions)	Performance (Average Condition)	Risk
		

These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected.

4.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	The Township staff provide surface condition with a rating as follows: 0 – 20 Very Poor 20 – 40 Poor 40 – 60 Fair 60 – 80 Good 80 – 100 Very Good

4.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0.003 (Imperial Street only)
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	0
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	0.4
Quality	Average pavement condition index for paved roads in the municipality	Asphalt = 65 Tar & Chip = 56.8
	Average surface condition for unpaved roads in the municipality (e.g. excellent, good, fair, poor)	Fair
Reliability	Average Condition	62%
	Average Risk	14.25 (High)

5 Bridges & Culverts

5.1 Key Insights

Bridges and culverts represent a critical portion of the transportation services provided to the community. The roads department is responsible for the maintenance of all bridges and culverts located across municipal roads. The state of the infrastructure for bridges and culverts is summarized in the following table.

Replacement Cost	Condition	Financial Capacity	
$18,112,319	Good (63%)	Annual Requirement:	$590,578
		Funding Available:	$128,357
		Annual Deficit:	$462,221

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

Service Attribute	Level of Service Statement
Scope	Bridges and culverts are accessible to the whole community in sufficient capacity (meets traffic demands) and are available under all weather conditions.
Quality	The bridges and culverts are in good condition with minimal unplanned service interruptions and closures.

5.2 Asset Inventory & Costs

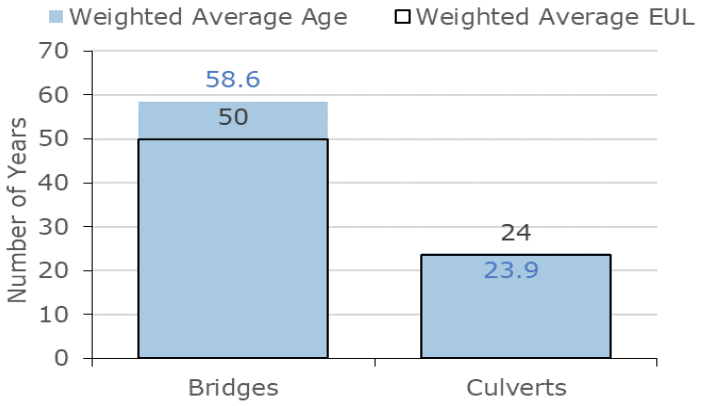
The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township's bridges and culverts inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Bridges	5	$9,450,000	$189,000
Culverts	21	$8,662,319	$401,578
Total		**$18,112,319**	**$590,578**

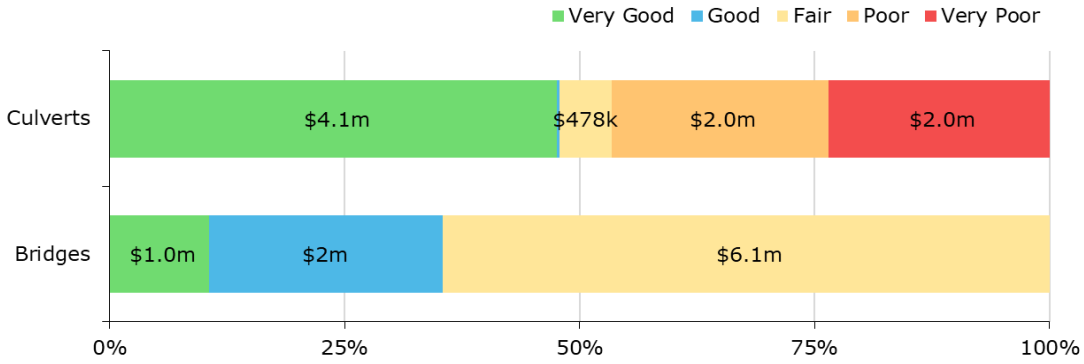
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

5.3 Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted value based on replacement cost.



Each asset's Estimated Useful Life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.
The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.



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

5.3.1 Current Approach to Condition Assessment

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

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 meters are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM)

5.4 Lifecycle Management Strategy

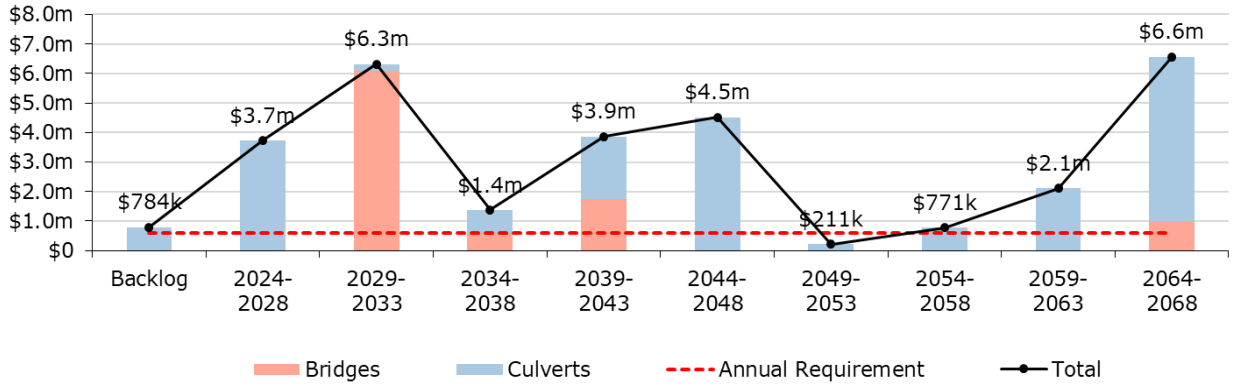
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2022 by Kresin Engineering Corporation

5.4.1 Forecasted Capital Requirements

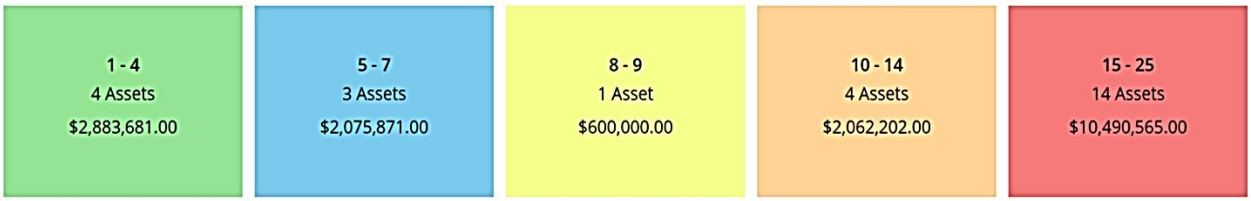
The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements. For Bridges and culverts the average annual capital requirement is $591k.



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

5.5 Risk & Criticality

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

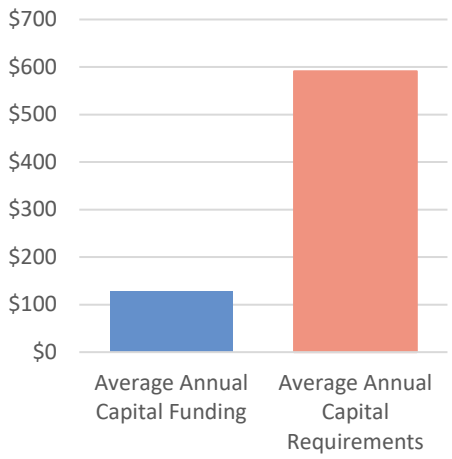
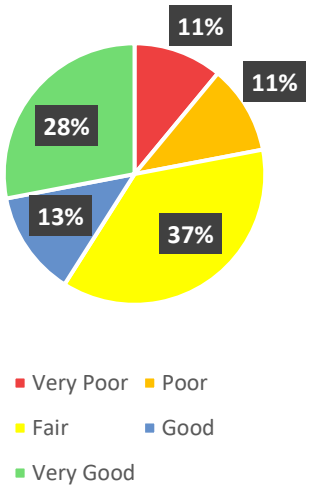
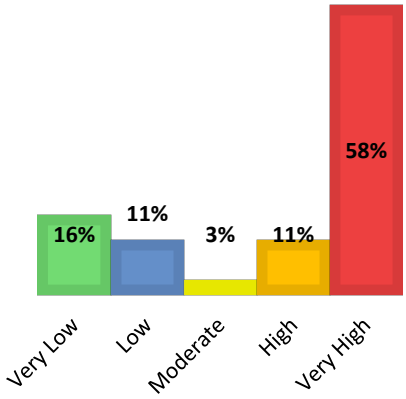


This is a high-level model developed by Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

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

5.6 Levels of Service

The following tables identify the Township's current level of service for bridges and culverts.

Cost ($ thousands)	Performance (Average Condition)	Risk
		

The metrics included below are the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected.

5.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of the municipal transportation network. One of the Town's structures have loading restriction.
Quality	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	See Appendix C

5.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of bridges in the Township with loading or dimensional restrictions	20% (1/5)
Quality	Average bridge condition index value for bridges	72
	Average bridge condition index value for structural culverts	46
Reliability	Average Condition	63%
	Average Risk	13.61 (High)

6 Stormwater Network

6.1 Key Insights

The Township is responsible for owning and maintaining a storm system in the community of Webbwood which is generally made up of storm mains, catch basins, and manholes.

Staff are working towards improving the accuracy and reliability of their stormwater network inventory to assist with long-term asset management planning as well as assessing the system for capacity and resiliency.

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

Replacement Cost	Condition	Financial Capacity	
$3.1 million	Very Good (88%)	Annual Requirement:	$39,318
		Funding Available:	$8,536
		Annual Deficit:	$30,782

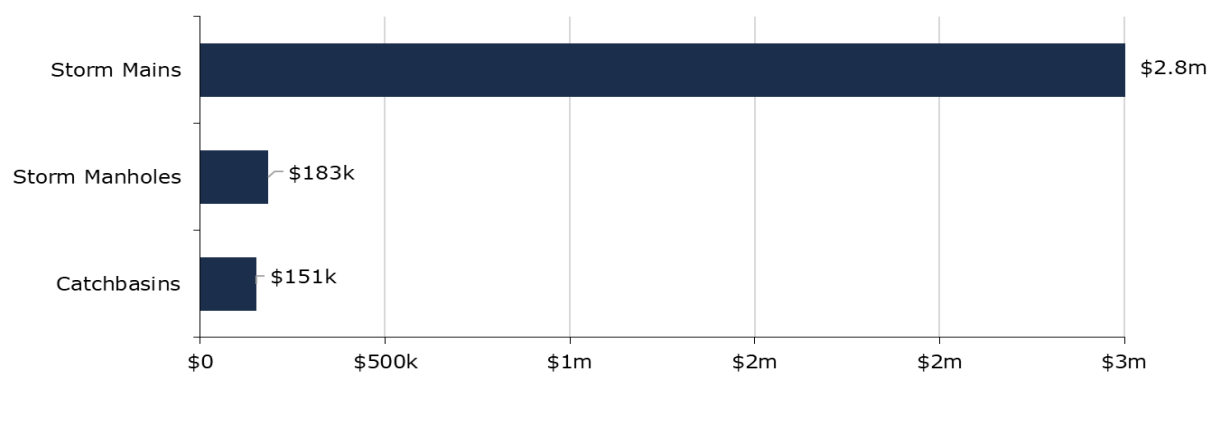
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	The storm water network service reliable and adequately sized to protect the community from flooding
Quality	The stormwater network is in good condition with minimal flooding events.

6.2 Asset Inventory & Costs

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

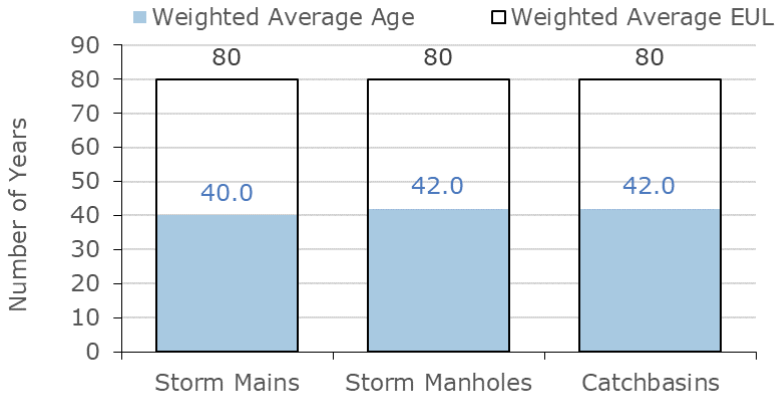
Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Storm Mains	2,762m	$2,811,164	$35,140
Storm Manholes	20	$183,200	$2,290
Catchbasins	31	$151,094	$1,889
Total		**$3,145,458**	**$39,318**



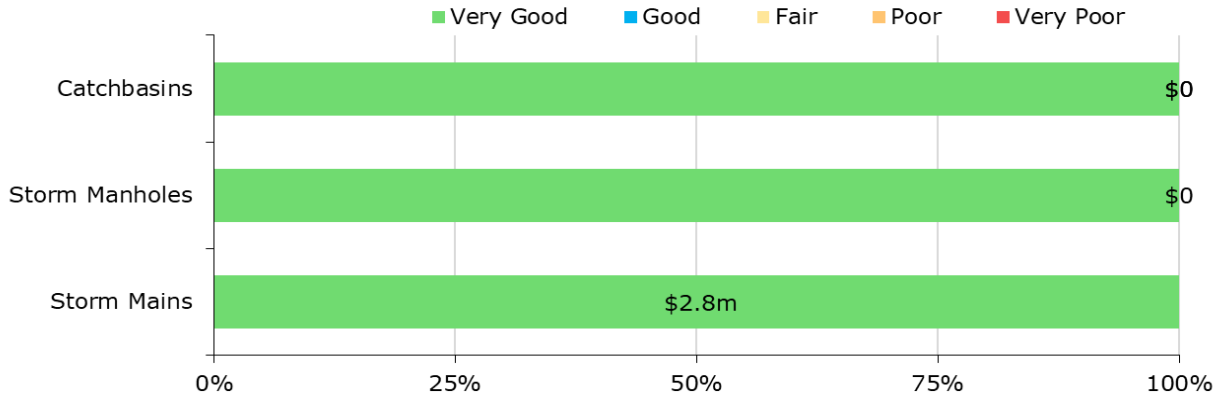
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

6.3 Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



The average condition for each asset segment on a very good to very poor for the storm network in the Township all segments are in very good condition.



To ensure that the Township's stormwater network continues to provide an acceptable level of service, the Township should monitor the average condition of all assets.

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

6.3.1 Current Approach to Condition Assessment

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

- Assets currently only get assessed if in line with a road project or an issue has occurred.
- As the Township refines the available asset inventory for the stormwater network a regular assessment cycle should be established

The following rating criteria is used to determine the current condition of water network assets and forecast future capital requirements:

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

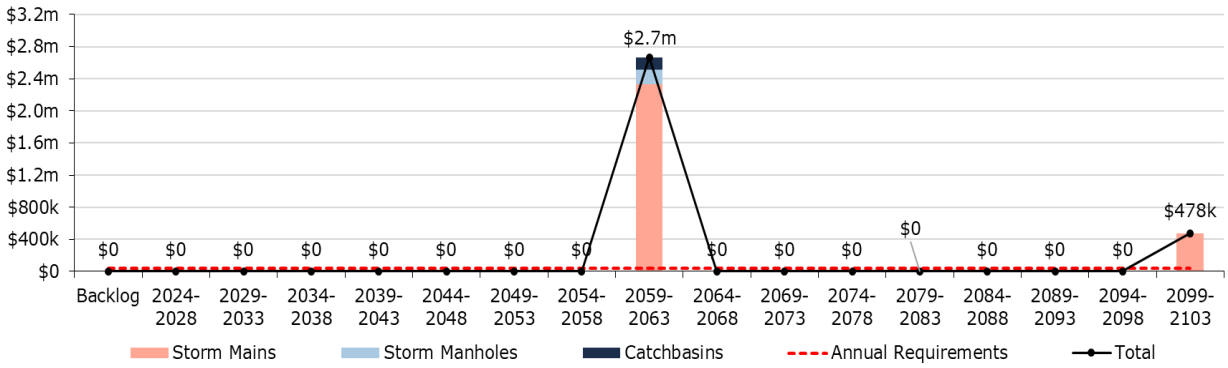
6.4 Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Primary activities include catch basin cleaning and storm main flushing, occurred in 2019
Replacement	Without the availability of up-to-date condition assessment information replacement activities are purely reactive in nature

6.4.1 Forecasted Capital Requirements

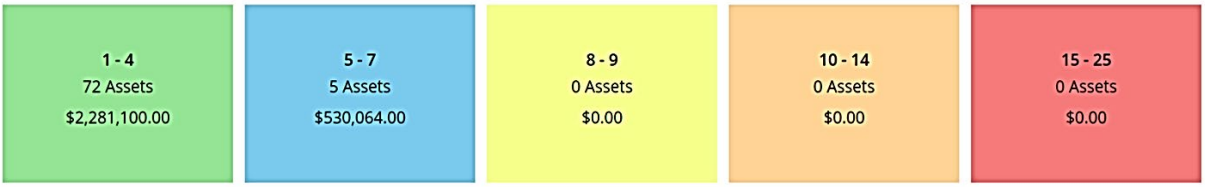
The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs for the storm system. The projection used looks all the out to the year 2103 as it ensures that every asset has gone through one full iteration of replacement. The forecasted annual capital requirement for the storm network is $39k.



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

6.5 Risk & Criticality

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

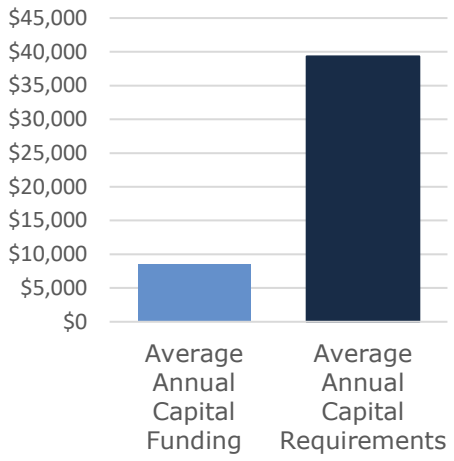
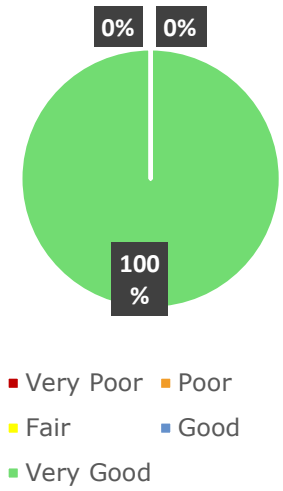
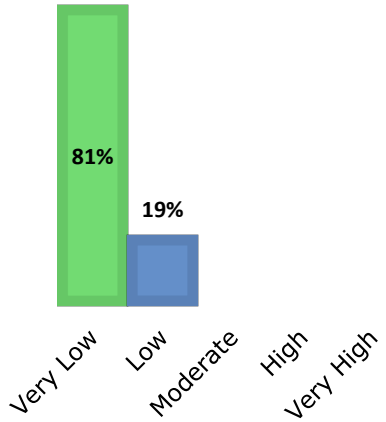


This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

6.6 Levels of Service

The following tables identify the Township's current level of service for the stormwater network.

Cost	Performance (Average Condition)	Risk
		

The metrics included below are the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected.

6.6.1 Community Levels of Service

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

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

6.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS[1]
Scope	% Properties in municipality resilient to a 100-year storm	TBD
	% The municipal stormwater management system is resilient to a 5-year storm	TBD
Reliability	Average Condition	88
	Average Risk	3.38 (Very Low)

[1] Currently the Township is unsure of the design standards that were used for the design of the storm system; however, they are working with the Ministry of the Environment, Climate and Parks on the consolidated environmental compliance approval as well as an engineering firm to determine more detailed information on the system.

7 Buildings

7.1 Key Insights

The Township of Sables-Spanish Rivers owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- administrative offices
- fire stations
- a medical clinic
- public works garages and storage sheds
- an arena, rinks, and community centres

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

Replacement Cost	Condition	Financial Capacity	
$8.68 million	Good (75%)	Annual Requirement:	$345,800
		Funding Available:	$150,770
		Annual Deficit:	$195,030

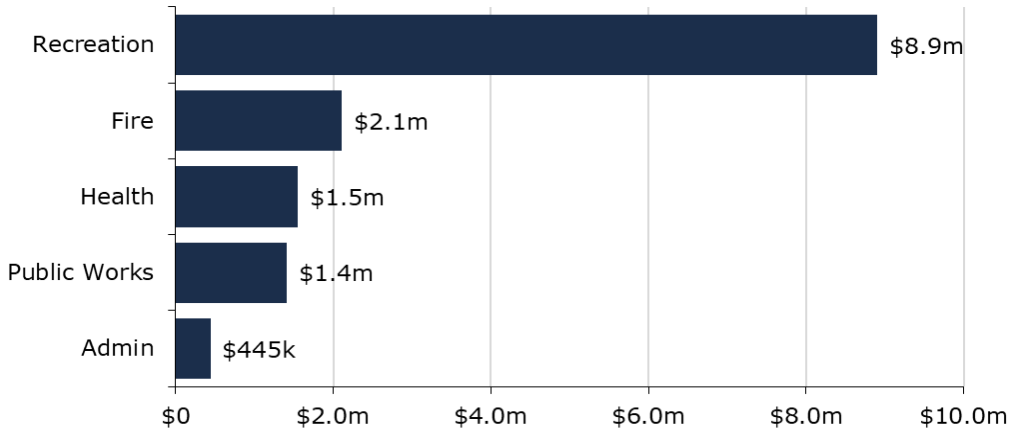
The following core values and level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	To provide safe, clean buildings with an accessible user experience.
Quality	The buildings are in good condition

7.2 Asset Inventory & Costs

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

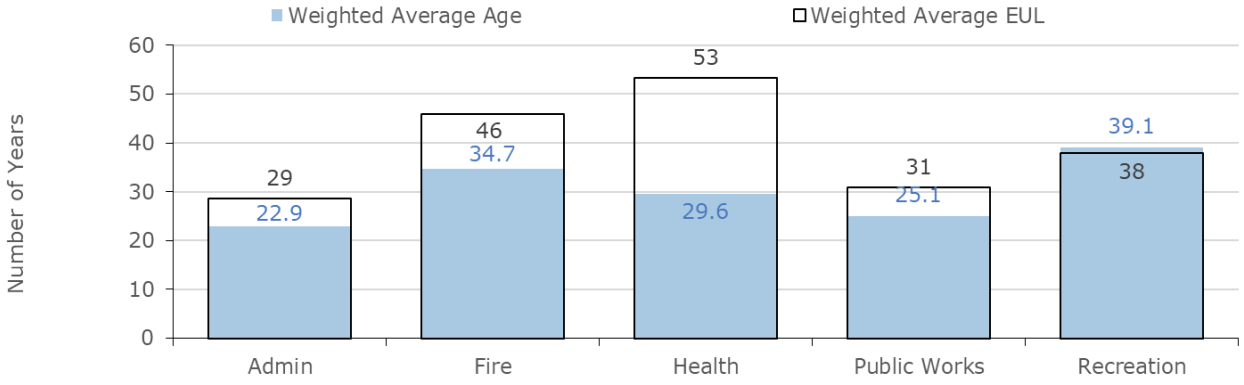
Asset Segment	Quantity (Assets)	Replacement Cost	Annual Capital Requirement
Admin	47	$444,782	$18,651
Fire	31	$2,109,667	$59,030
Health	24	$1,543,100	$39,509
Public Works	29	$1,413,107	$51,799
Recreation	117	$8,903,067	$325,047
Total		**$14,413,723**	**$494,036**



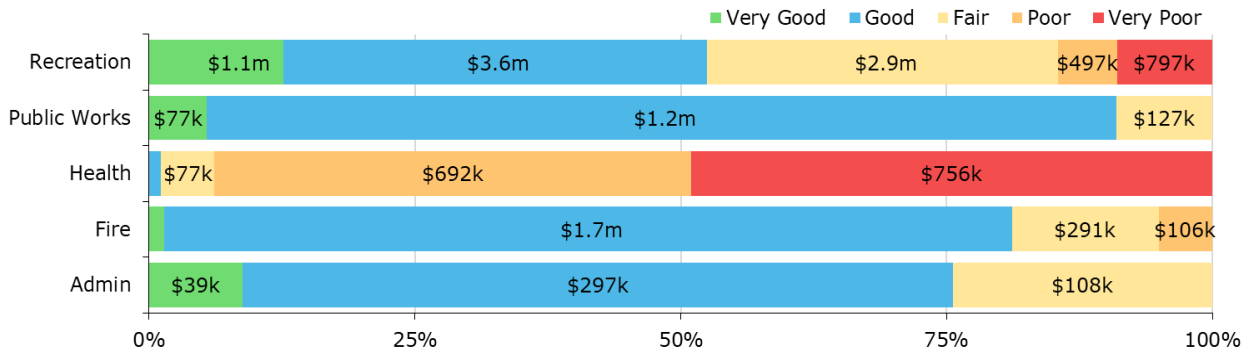
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

7.3 Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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



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

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

7.3.1 Current Approach to Condition Assessment

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

- Staff performing regular health and safety assessments identify deficiencies and repairs.
- Critical mechanical systems are assessed annually.

The following rating criteria is used to determine the current condition of building assets and forecast future capital requirements:

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

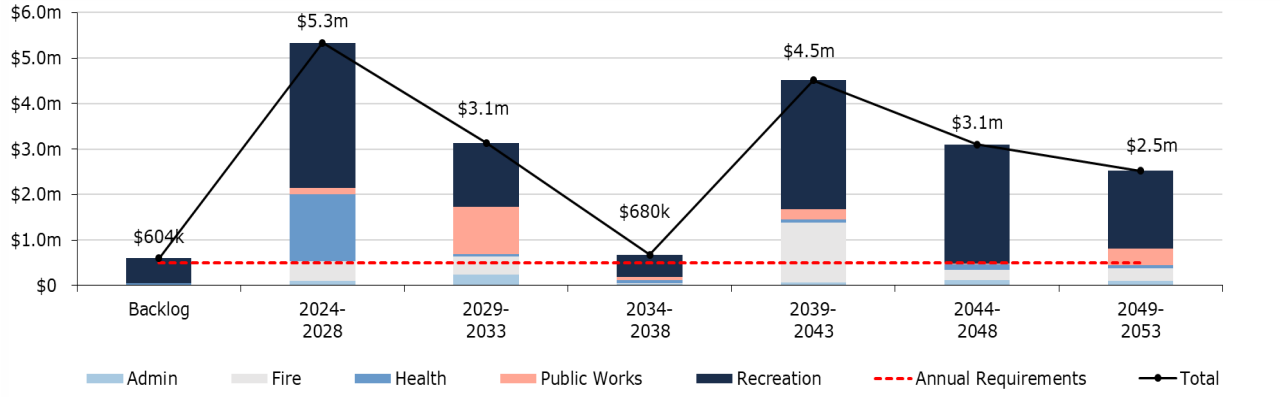
7.4 Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Municipal buildings are subject to regular inspections to identify health & safety requirements
	Maintenance of buildings is dealt with on a case-by-case basis
Replacement	Assessments are completed strategically as buildings approach their end-of-life to determine whether replacement or rehabilitation is appropriate

7.4.1 Forecasted Capital Requirements

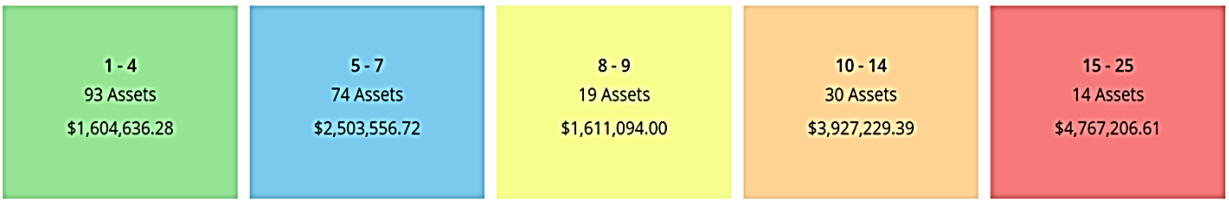
The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 30 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average capital requirements at $494,036.



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

7.5 Risk & Criticality

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

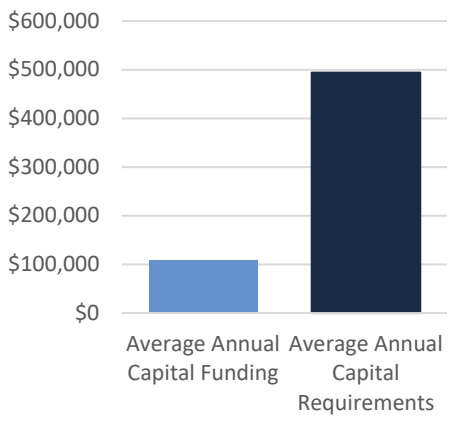
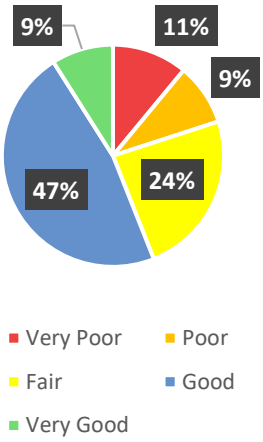
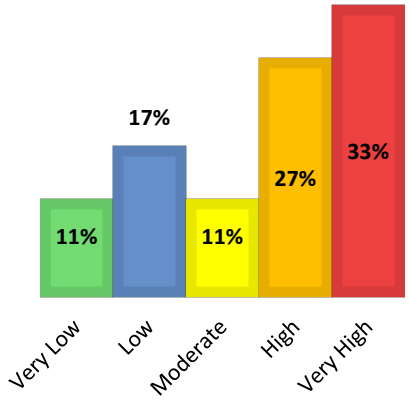


This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

7.6 Levels of Service

The following tables identify the Township's current level of service for the building assets.

Cost	Performance (Average Condition)	Risk
		

The metrics included below are the technical and community level of service metrics that the Township has selected.

7.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	A description of the facilities provided within municipal buildings	The facilities provided by municipal buildings are: • administrative offices • fire stations • a medical clinic • public works garages & storage sheds • an arena, rinks, and community centres

7.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Reliability	Average Risk	12.32 (High)
	Average Condition	56

8 Waste Management

8.1 Key Insights

The Township of Sables-Spanish Rivers owns and maintains two landfills that provide key services to the community. These include:

- Cameron Falls Landfill
- Webbwood Landfill (currently being closed) / Transfer Station
- May Waste Disposal Site

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

Replacement Cost	Condition	Financial Capacity	
$266,196	Good (61%)	Annual Requirement:	$14,534
		Funding Available:	$3,155
		Annual Deficit:	$11,378

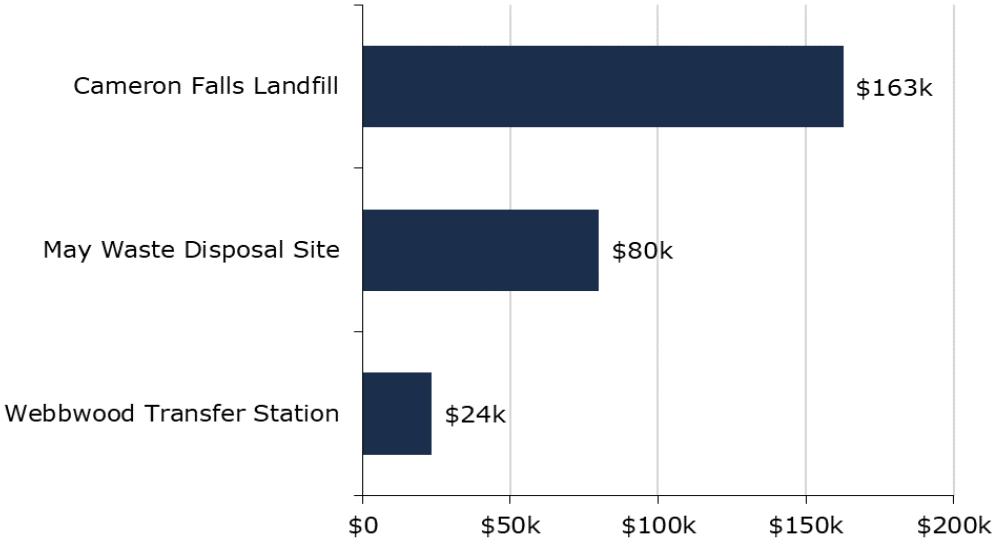
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	To provide sustainable waste management services to residents
Quality	The capacity of the landfills continues to be accessible to the community

8.2 Asset Inventory & Costs

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

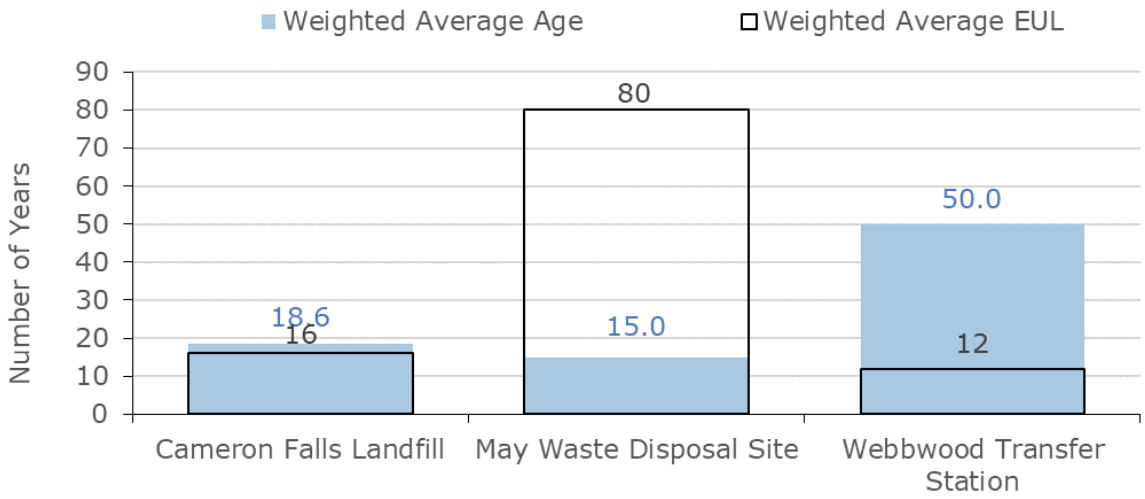
Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Cameron Falls Landfill	1	$162,625	$11,396
May Waste Disposal Site	1	$80,000	$1,000
Webbwood Transfer Station	1	$23,571	$2,138



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

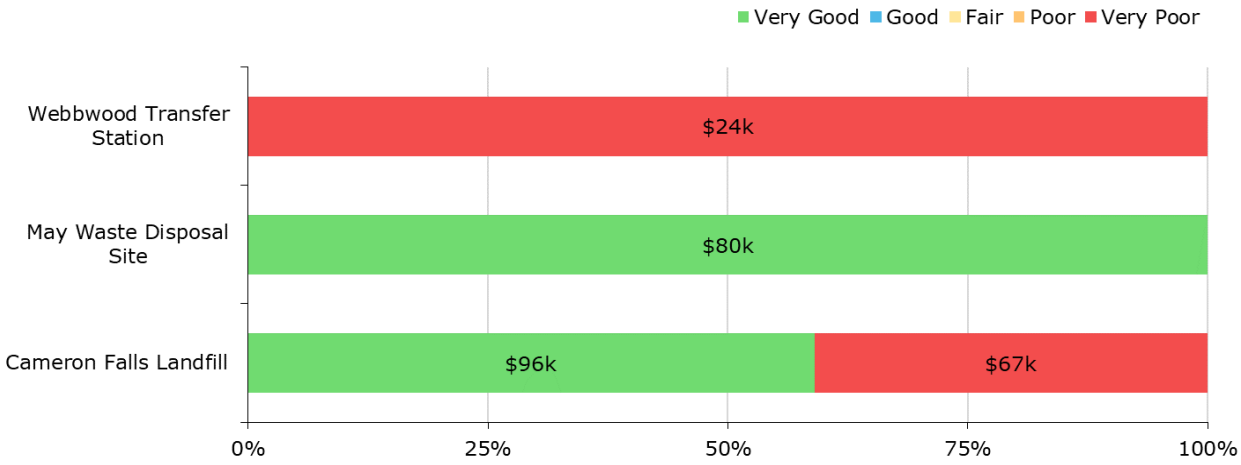
8.3 Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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

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



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

8.3.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The Township's current approach is to conduct annual or biennial engineering assessments.

The following rating criteria is used to determine the current condition of waste management assets and forecast future capital requirements:

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

8.4 Lifecycle Management Strategy

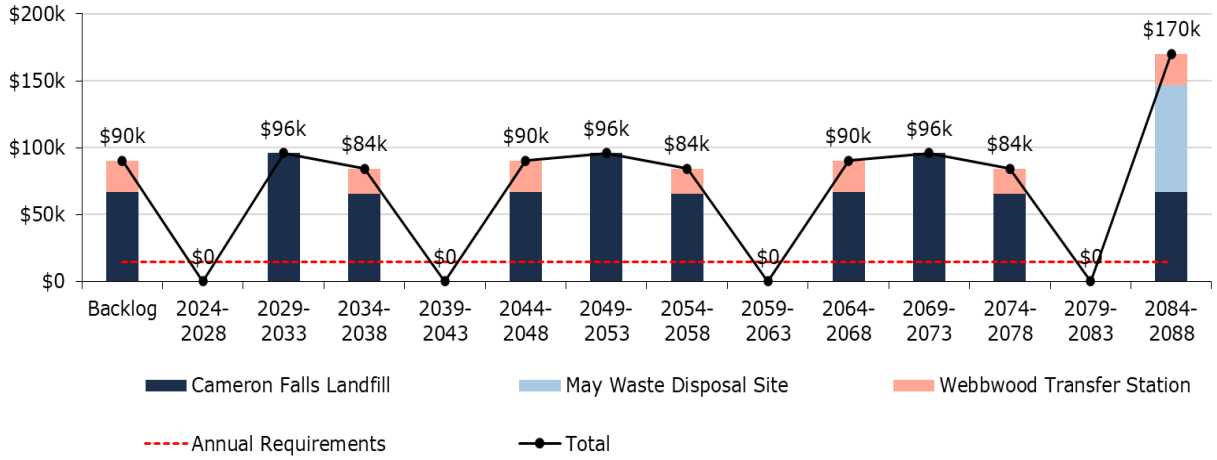
To ensure that Township assets are performing as expected and meeting the needs of residents, it is important to establish a lifecycle management strategy to

proactively manage asset deterioration. The following table outlines the Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation & Replacement	Assessments are completed as required by legislation and the engineers' recommendations determine the activities.

8.4.1 Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 20 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements which are $14,534.



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

8.5 Risk & Criticality

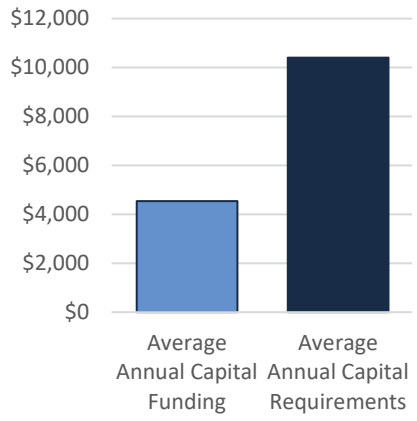
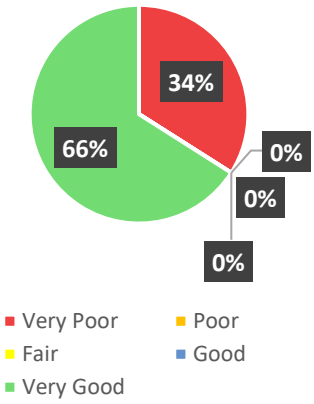
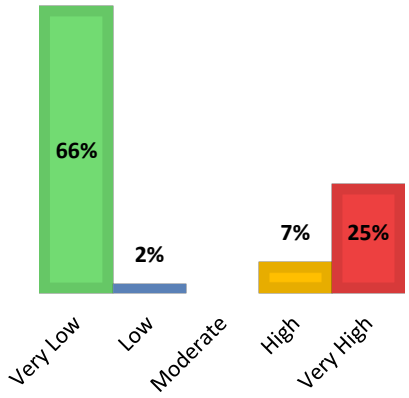
The risk breakdown provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2023 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

8.6 Levels of Service

The following tables identify the Township's current level of service for the waste management assets.

Cost	Performance (Average Condition)	Risk
		

The metrics included below are the technical and community level of service metrics that the Township has selected.

8.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	A description of the facilities provided within waste management services	The facilities that provide by waste management services are: • Cameron Falls Landfill • Webbwood Landfill (currently closing) / Transfer station • May Waste Disposal Site

8.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Reliability	Average Risk	8.38 (Moderate)
	Average Condition	61

9 Vehicles

9.1 Key Insights

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

- tandem axle trucks for winter control activities
- fire rescue vehicles to provide emergency services
- waste collection vehicles to provide environmental services
- pick-up trucks to support the maintenance of all departments

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

Replacement Cost	Condition	Financial Capacity	
$2.54 million	Fair (56%)	Annual Requirement:	$217,574
		Funding Available:	$47,236
		Annual Deficit:	$170,338

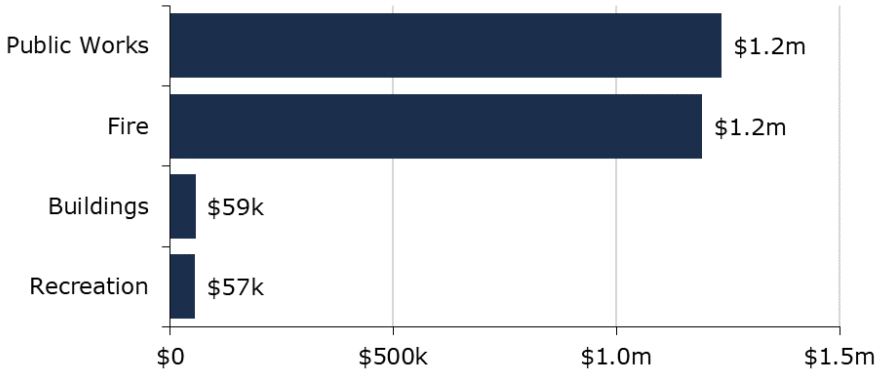
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	The vehicles service has planned maintenance activities to minimize vehicle downtime.
Quality	The vehicles are in fair condition with minimal unplanned service interruptions

9.2 Asset Inventory & Costs

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

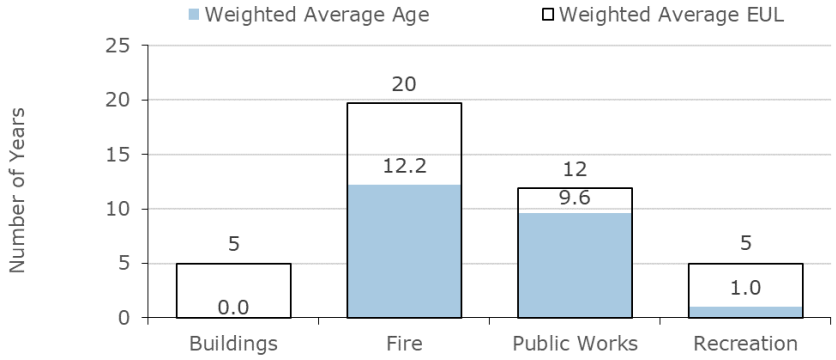
Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Buildings	1	$58,541	$11,708
Fire	9	$1,192,246	$63,896
Public Works	12	$1,234,081	$130,504
Recreation	1	$57,330	$11,466
Total		**$2,542,198**	**$217,574**



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

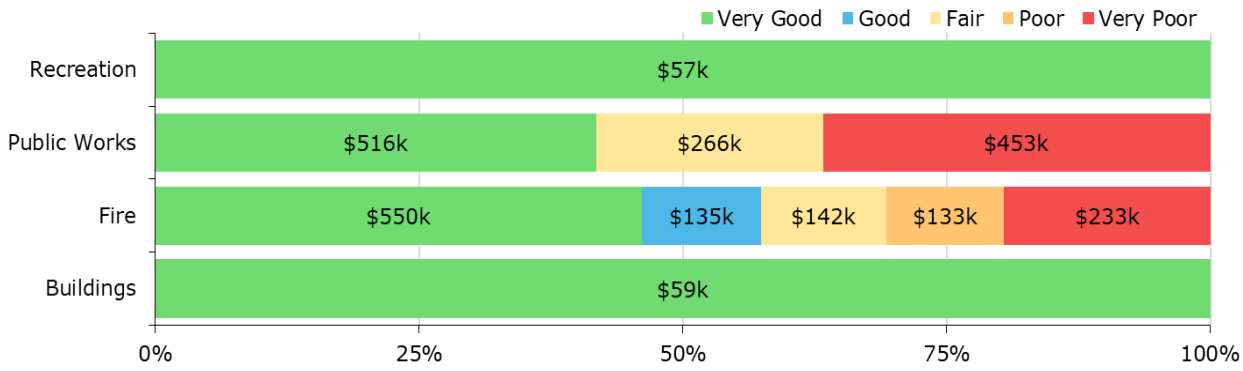
9.3 Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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

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



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

9.3.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation

The following rating criteria is used to determine the current condition of vehicle assets and forecast future capital requirements:

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

9.4 Lifecycle Management Strategy

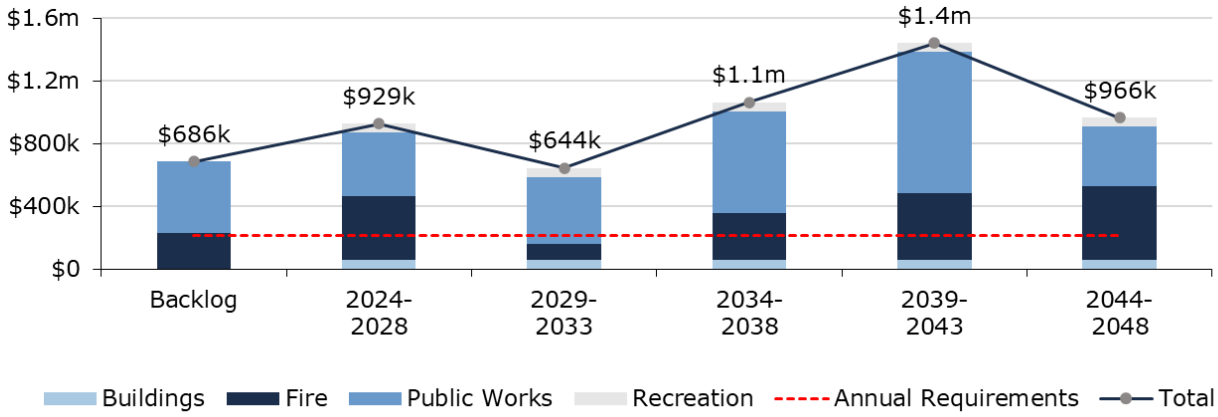
The condition or performance of assets will deteriorate over time, to ensure vehicles are performing as expected, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Township's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Visual inspections completed and documented daily
	Every 4-7000km includes an inspection and oil changed
Replacement	Vehicle replacements are based on age, usage and annual repair costs are all considered when determining appropriate treatment options

9.4.1 Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

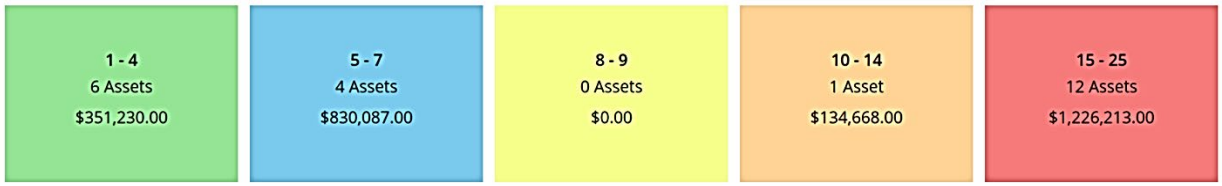
The following graph identifies capital requirements over the next 25 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $218k.



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

9.5 Risk & Criticality

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

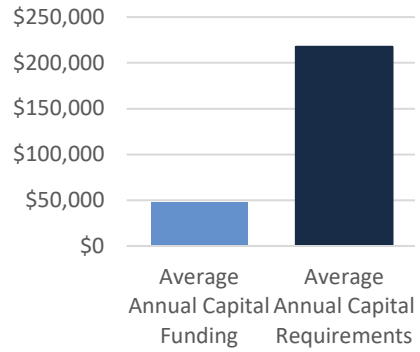
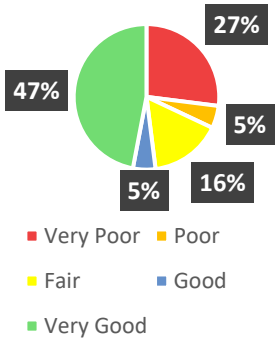
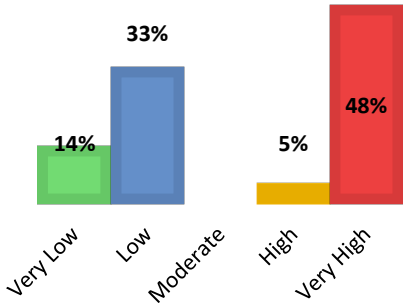


This is a high-level model developed by the Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

9.6 Levels of Service

The following tables identify the Township's current level of service for the vehicle assets.

Cost	Performance (Average Condition)	Risk
		

The metrics included below are the technical and community level of service metrics that the Township has selected.

9.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	A description of the types of vehicles	Municipal vehicles are used to support several service areas, including: • tandem axle trucks for winter control activities • fire rescue vehicles to provide emergency services • waste collection vehicles to provide environmental services • pick-up trucks to support the maintenance of all departments

9.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Reliability	Average Risk	13.97 (High)
	Average Condition	56

10 Machinery & Equipment

10.1 Key Insights

To maintain the quality stewardship of Sable-Spanish River's infrastructure and support the delivery of services, Township staff own and employ various types of machinery and equipment. This includes:

- Computer hardware, software, and phone systems to support all Township services
- Landscaping equipment to maintain public parks
- Fire equipment to support the delivery of emergency services
- Plows and sand hoppers to provide winter control activities
- Park equipment to enable the provision of recreational services

The state of the infrastructure for the machinery and equipment is summarized in the following table.

Replacement Cost	Condition	Financial Capacity	
$2.98 million	Good (67%)	Annual Requirement:	$167,685
		Funding Available:	$36,405
		Annual Deficit:	$131,280

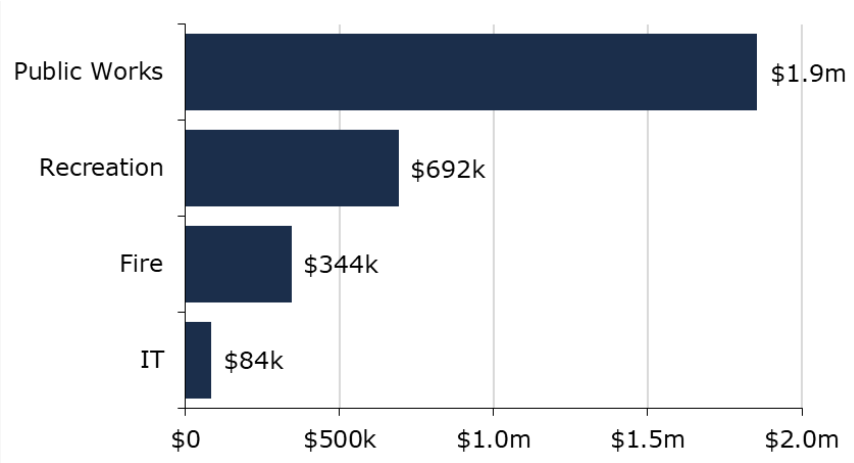
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	The machinery and equipment service provides suitable material for staff to perform their duties effectively
Quality	The machinery and equipment are in good condition with minimal unplanned service interruptions.

10.2 Asset Inventory & Costs

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

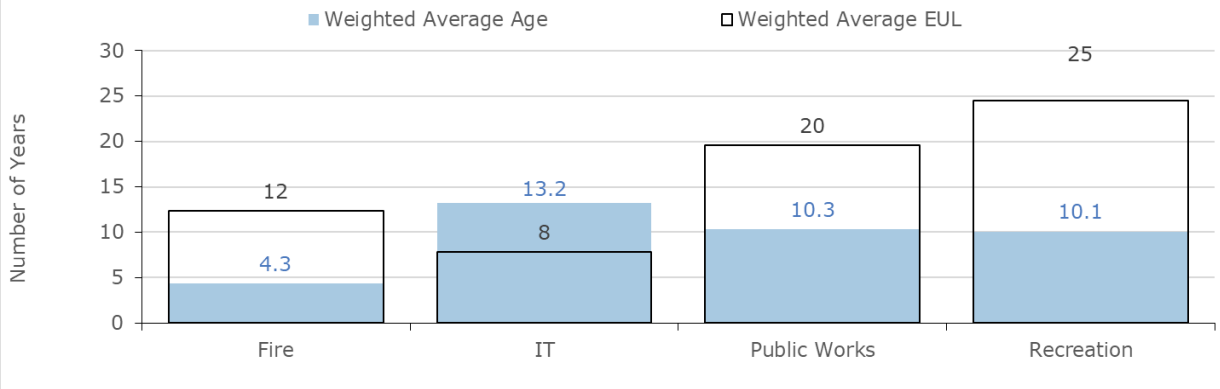
Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Fire	162	$343,875	$28,997
IT	9	$84,133	$12,071
Public Works	14	$1,855,219	$95,930
Recreation	231	$692,019	$30,686
Total		**$2,975,246**	**$167,685**



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

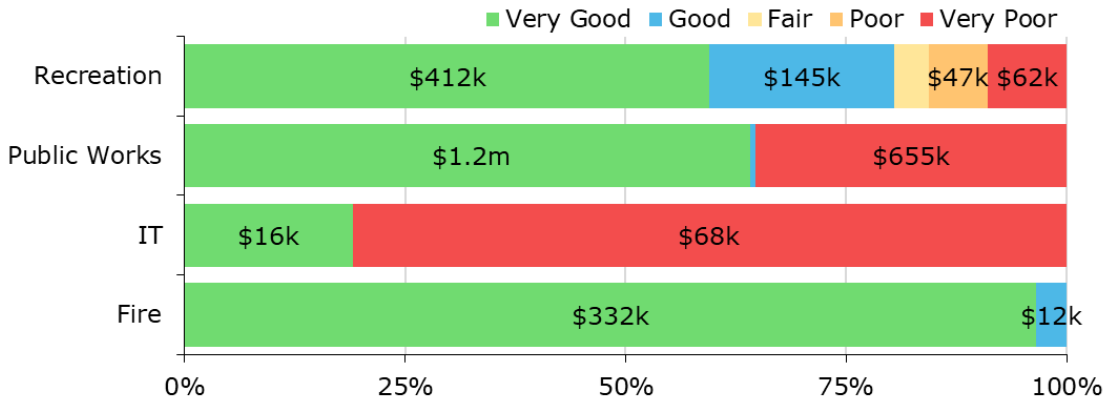
10.3 Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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

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



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

10.3.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of machinery and equipment to ensure they are in state of adequate repair
- The broad range of types of equipment included in this category, there are some types with very established assessments (i.e. Fire Equipment) but also many don't have any assessment procedures

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

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

10.4 Lifecycle Management Strategy

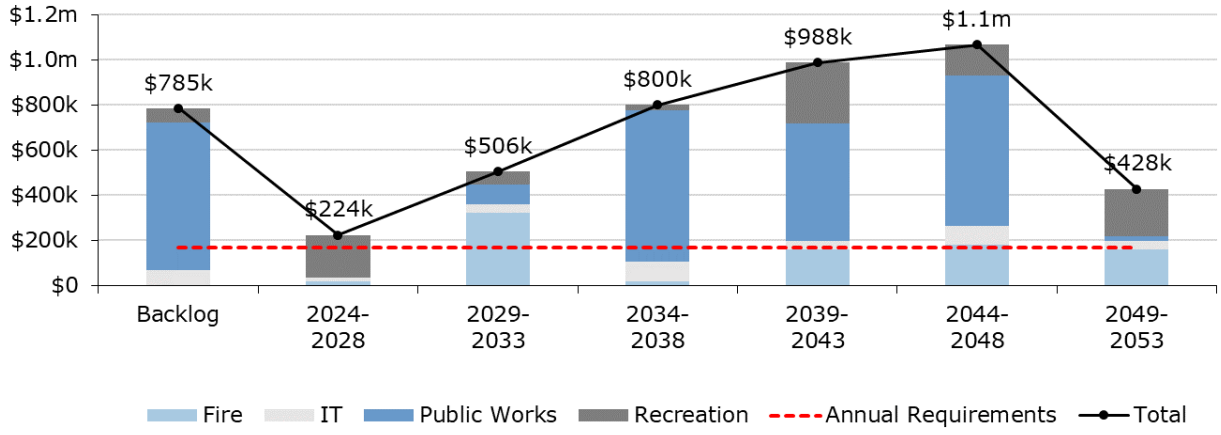
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Maintenance program varies by department
	Fire Protection Services equipment is subject to a much more rigorous inspection and maintenance program compared to most other departments
	Machinery and equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff
Replacement	The replacement of machinery and equipment depends on deficiencies identified

10.4.1 Forecasted Capital Requirements

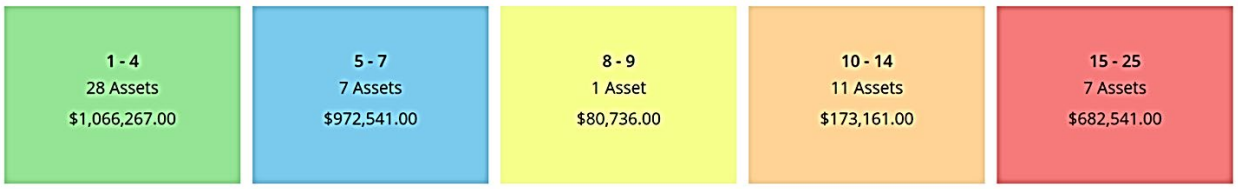
The following graph identifies capital requirements over the next 30 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $128,550.



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

10.5 Risk & Criticality

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



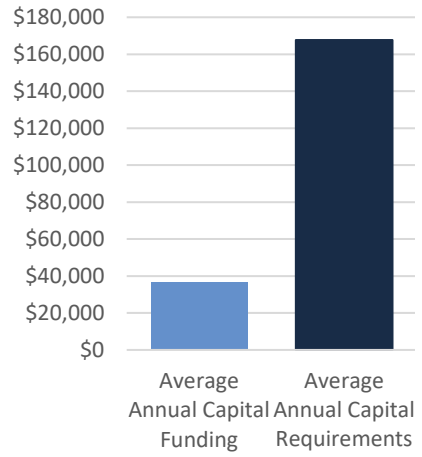
This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

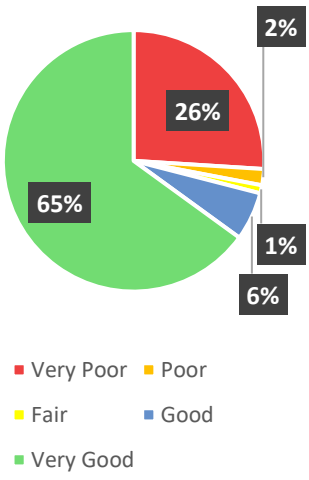
The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

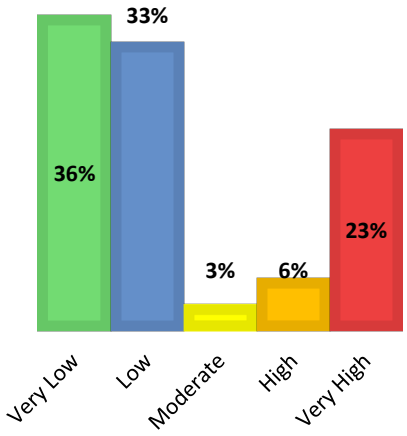
10.6 Levels of Service

The following tables identify the Township's current level of service for the machinery and equipment assets.

Cost	Performance (Average Condition)	Risk







The metrics included below are the technical and community level of service metrics that the Township has selected.

10.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	A description of the different types of machinery and equipment	Township staff own and employ various types of machinery and equipment, this includes: • Computer hardware, software, and phone systems to support all Township services • Landscaping equipment to maintain public parks • Fire equipment to support the delivery of emergency services • Plows and sand hoppers to provide winter control activities • Park equipment to enable the provision of recreational services

10.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Reliability	Average Risk	9.04 (Moderate)
	Average Condition	67%

11 Land Improvements

11.1 Key Insights

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

- Fencing
- Parking lots and guard rails
- Outdoor rink

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

Replacement Cost	Condition	Financial Capacity	
$0.23 million	Very Good (97%)	Annual Requirement:	$14,163
		Funding Available:	$3,075
		Annual Deficit:	$11,088

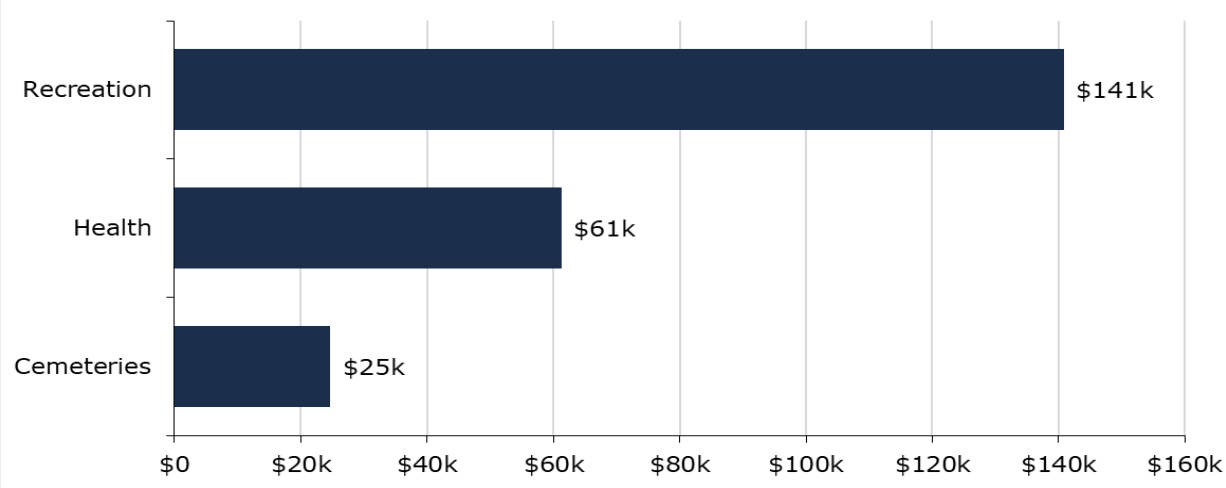
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	The land improvement assets provide suitable security, parking and outdoor rink services.
Quality	The land improvements are in good condition.

11.2 Asset Inventory & Costs

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

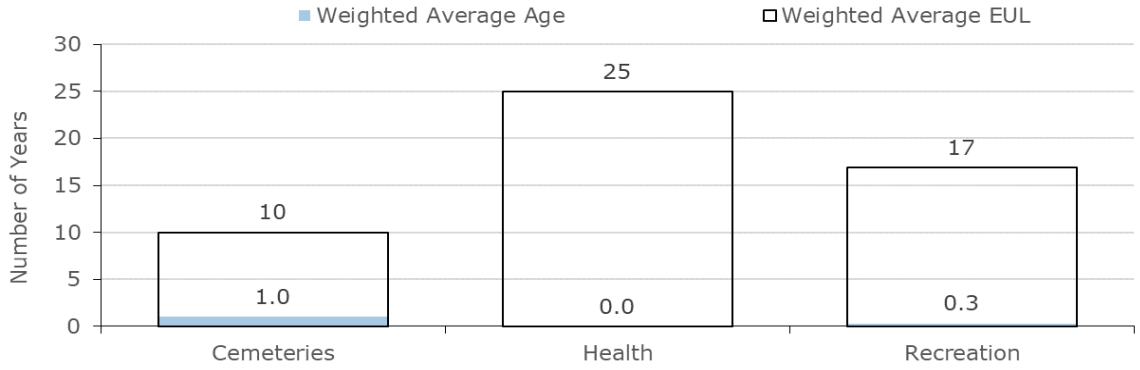
Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Cemeteries	671ft	$24,686	$2,469
Health	1	$61,244	$2,450
Recreation	603ft	$140,941	$9,245
Total		**$2,975,246**	**$167,685**



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

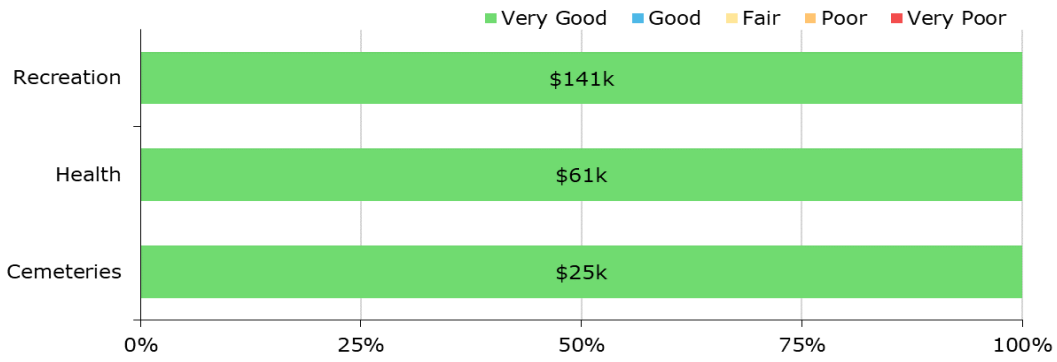
11.3 Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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

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



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

11.3.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of land improvements to ensure they are in state of adequate repair

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

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

11.4 Lifecycle Management Strategy

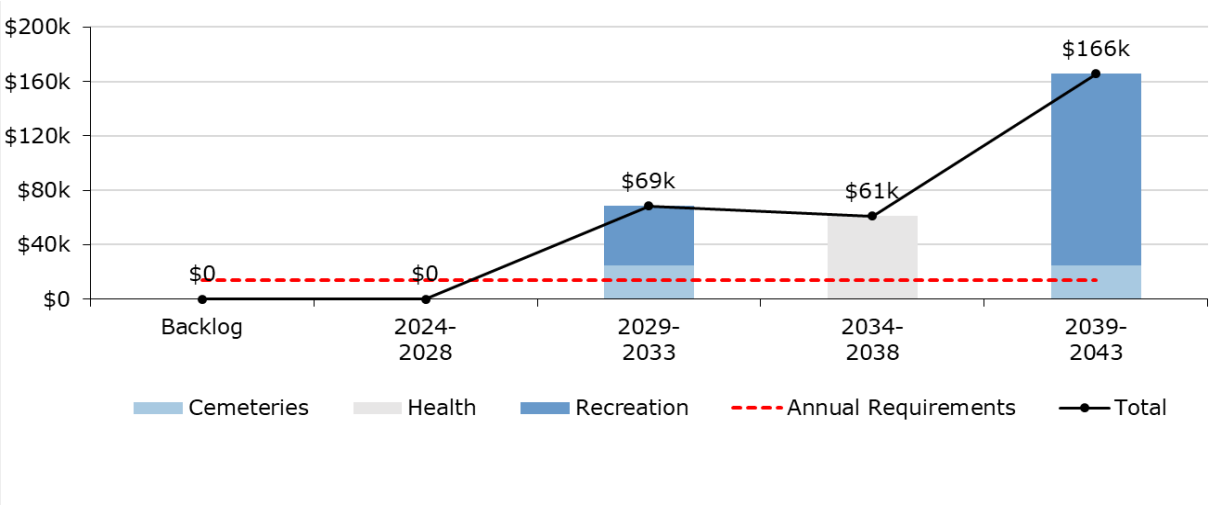
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Maintenance program varies by department
Replacement	The replacement of land improvements depends on deficiencies identified

11.4.1 Forecasted Capital Requirements

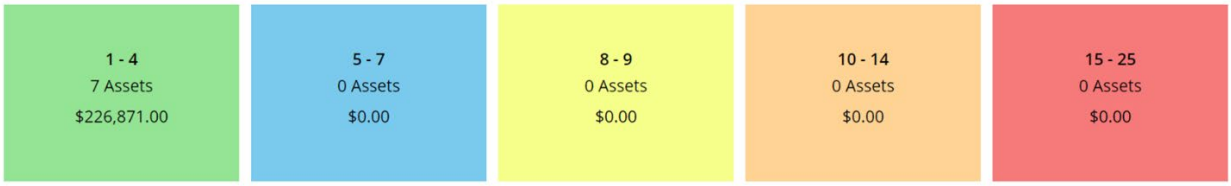
The following graph identifies capital requirements over the next 20 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $14k.



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

11.5 Risk & Criticality

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



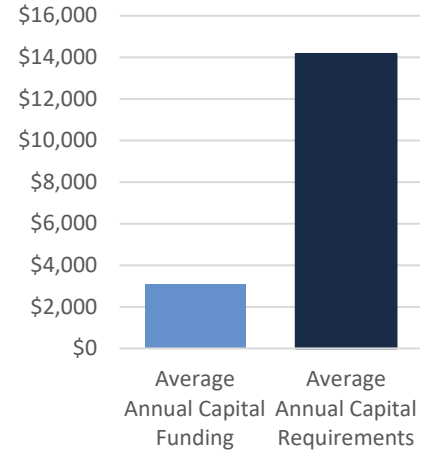
This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

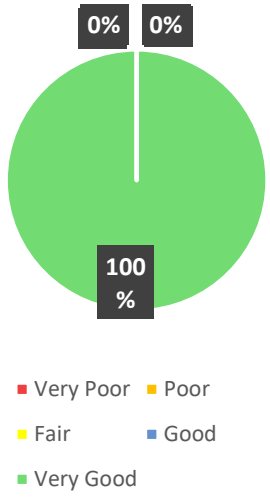
The identification of critical assets allows the Township to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

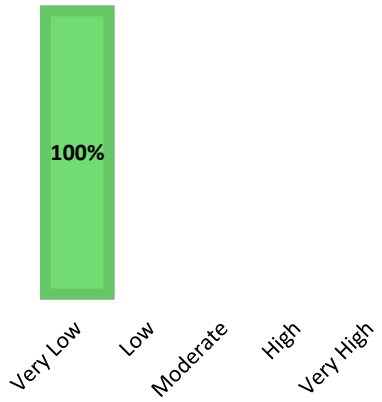
11.6 Levels of Service

The following tables identify the Township's current level of service for the land improvement assets.

Cost	Performance (Average Condition)	Risk







The metrics included below are the technical and community level of service metrics that the Township has selected.

11.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	A description of the different types of land improvements	Township staff owns various types of land improvements, this includes: • Cemetery fencing • Parking lots • Parking guard rails • Outdoor rink

11.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Reliability	Average Risk	3.49 (Very Low)
	Average Condition	97

12 Water Network

12.1 Key Insights

The water services provided by the Township are overseen by the Ontario Clean Water Agency (OCWA). The public works department works with OCWA to ensure the responsible management for the following:

- Water Treatment Plant
- Distribution System
- Fire Supply Line in Webbwood
- 3 Small Water Systems
- Water Storage Tank

The state of the infrastructure for the water network is summarized in the following table:

Replacement Cost	Condition	Financial Capacity	
$16.7 million	Good (75%)	Annual Requirement:	$329,228
		Funding Available:	$71,000
		Annual Deficit:	$258,228

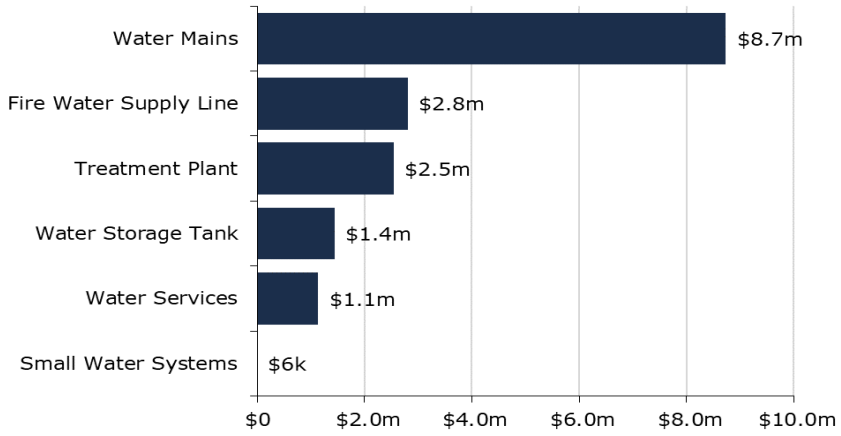
The following level of service statements are a key driving force behind the Township's asset management planning:

Service Attribute	Level of Service Statement
Scope	Municipal water is accessible to the community in sufficient capacity (does not exceed maximum use) in Massey. The Webbwood fire flow system is accessible in sufficient capacity.
Quality	The water network is in good condition with minimal unplanned service interruptions due to main breaks and boil water advisories.

12.2 Asset Inventory & Costs

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

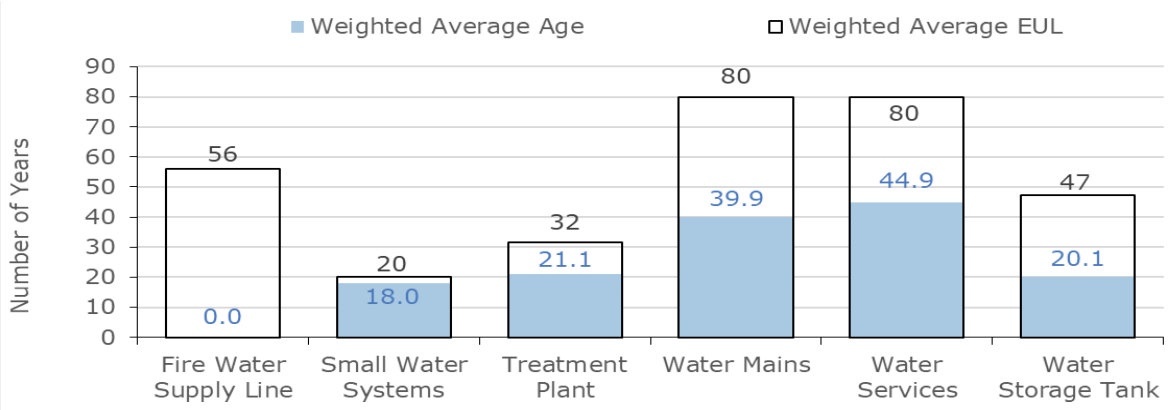
Asset Segment	Quantity (Component)	Replacement Cost	Annual Capital Requirement
Fire Water Supply Line	3,800m	$2,804,734	$50,511
Small Water Systems	3	$6,248	$364
Treatment Plant	35	$2,546,979	$116,422
Water Mains	13,195m	$8,733,382	$109,167
Water Services	1,611m	$1,135,983	$14,200
Water Storage Tank	6	$1,446,360	$38,564
Total		**$16,673,686**	**$329,228**



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

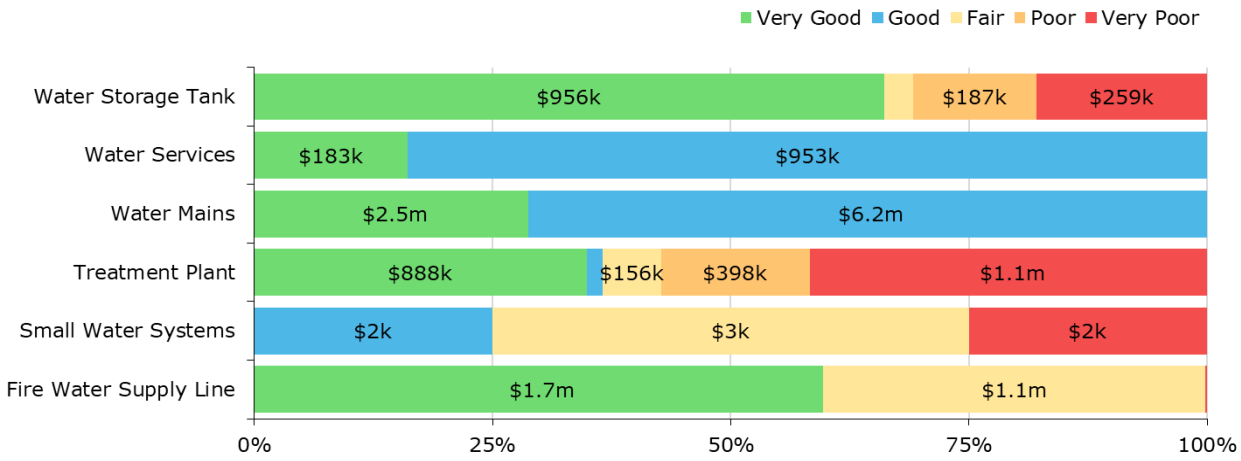
12.3 Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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

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



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

12.3.1 Current Approach to Condition Assessment

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

- For watermains staff rely on the age, material, and break history to estimate the condition of water mains
- The only formal condition assessment programs in place is for hydrants.

The following rating criteria is used to determine the current condition of water network assets and forecast future capital requirements:

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

12.4 Lifecycle Management Strategy

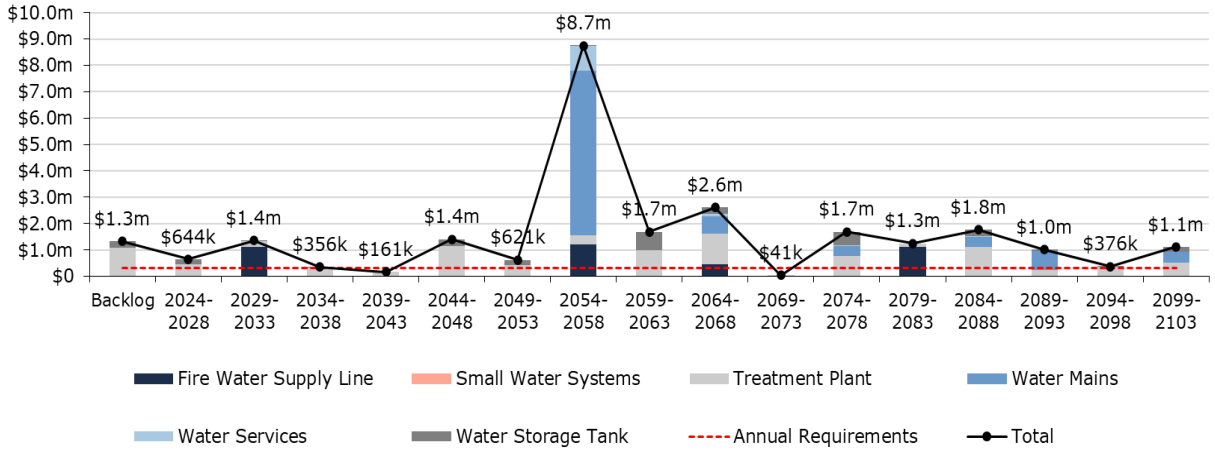
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Main flushing is completed on 100% of the network annually
	Watermain swabbing was completed over 2 years (2020/2021)
Replacement	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
	Replacement activities are identified based on an analysis of the main break rate as well as any issues identified during regular maintenance activities

12.4.1 Forecasted Capital Requirements

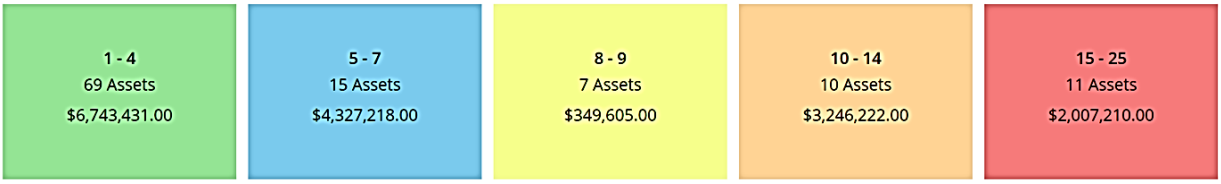
The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $329,228.



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

12.5 Risk & Criticality

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

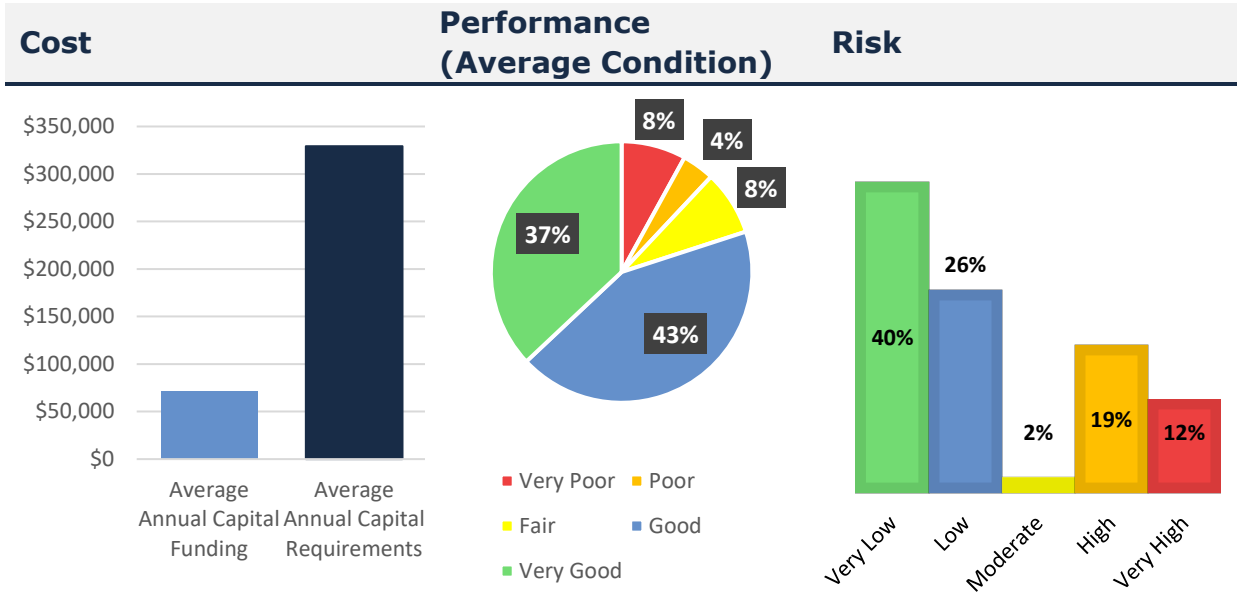


This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

12.6 Levels of Service

The following tables identify the Township's current level of service for water network.



These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Town has selected.

12.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	See Appendix C
	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	See Appendix C
Reliability	Description of boil water advisories and service interruptions	In 2021 1 watermain break fixed in 1 day had a boil water advisory for 4 days affecting 8 customers

12.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of properties connected to the municipal water system	17%
	% of properties where fire flow is available	31%
Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0.008
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0.002
	Average Condition	75
	Average Risk	8.57 (moderate)

13 Sanitary Network

13.1 Key Insights

The Sanitary Network provided by the Township are overseen by the public works department with OCWA (Ontario Clean Water Agency). The department is responsible for the following:

- A lagoon
- A wastewater pumping station
- Sanitary collection system

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

Replacement Cost	Condition	Financial Capacity	
$6.4 million	Fair (40%)	Annual Requirement:	$144,775
		Funding Available:	$45,000
		Annual Deficit:	$99,775

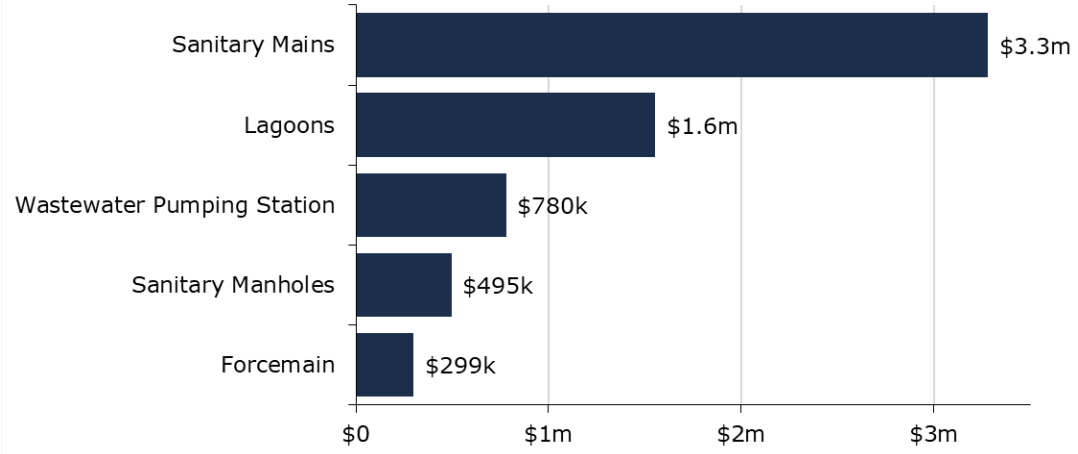
The following level of service statements are a key driving force behind the Township's asset management planning.

Service Attribute	Level of Service Statement
Scope	The sanitary network is accessible to the community in sufficient capacity.
Quality	The sewer network is in good condition with minimal unplanned service interruptions due to backups and effluent violations.

13.2 Asset Inventory & Costs

The table below includes the quantity, replacement cost and annual capital requirement for each asset segment in the Township's sanitary network inventory.

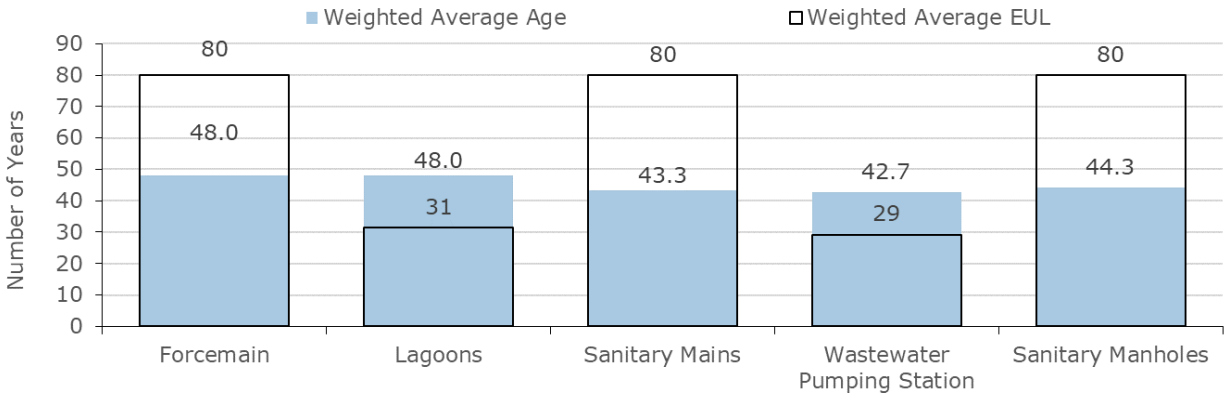
Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Forcemain	868m	$299,106	$3,739
Lagoons	5	$1,553,401	$60,210
Sanitary Mains	4,343m	$3,278,987	$40,987
Wastewater Pumping Station	12	$779,771	$33,650
Sanitary Manholes	61	$495,137	$6,189
Total		**$6,406,402**	**$144,775**



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

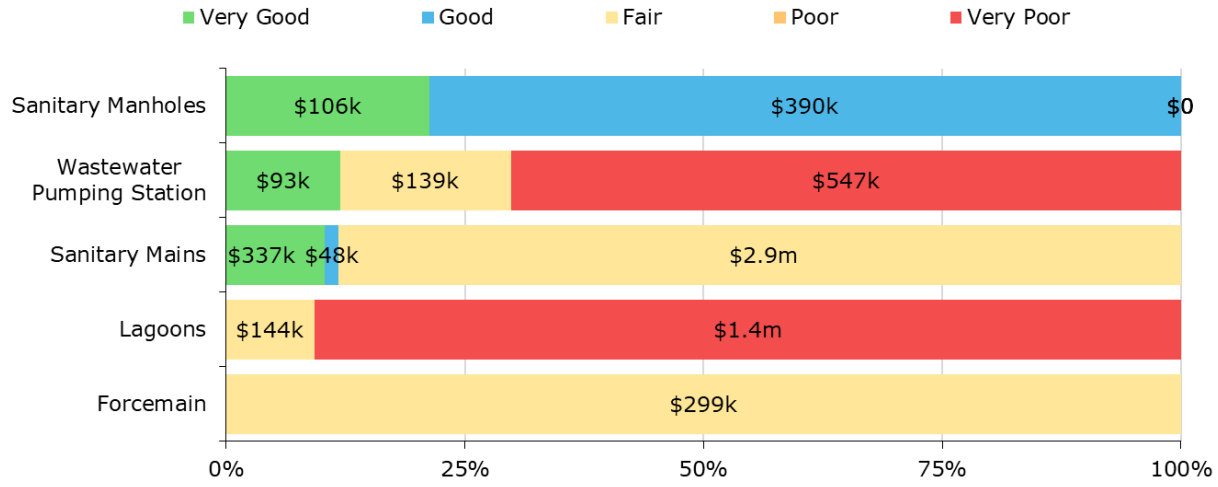
13.3 Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.



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

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



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

13.3.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The Township's current approach is to have OCWA manages all condition assessments and make recommendations.

The following rating criteria is used to determine the current condition of sanitary network assets and forecast future capital requirements:

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

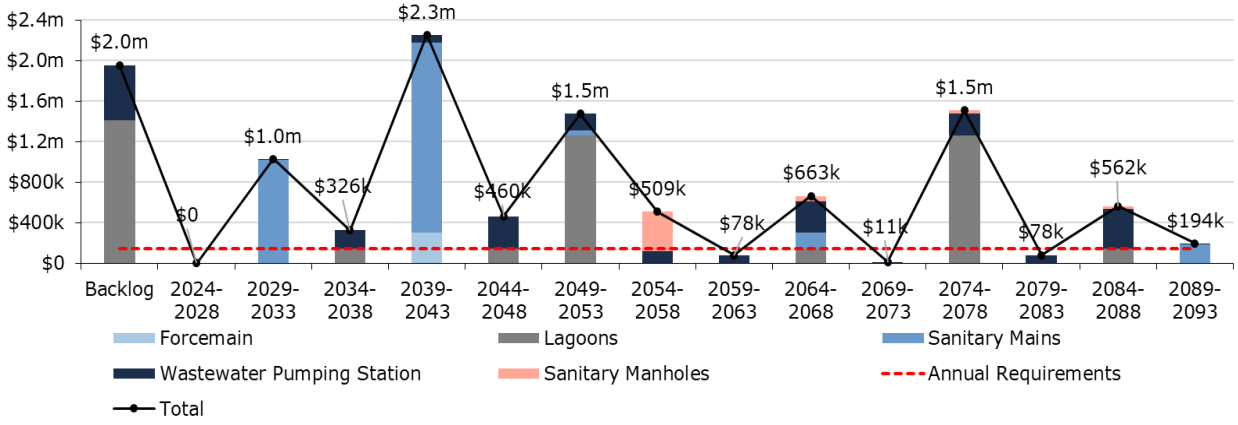
13.4 Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance	Main flushing is completed on 100% of the network
Replacement	In the absence of mid-lifecycle rehabilitative events, assets are simply maintained with the goal of full replacement once it reaches its end-of-life.

13.4.1 Forecasted Capital Requirements

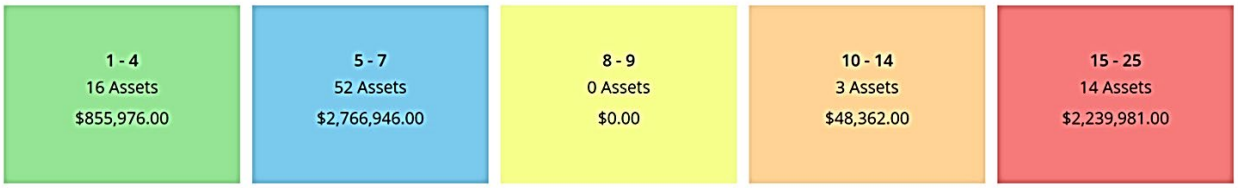
The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 75 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $145k.



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

13.5 Risk & Criticality

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

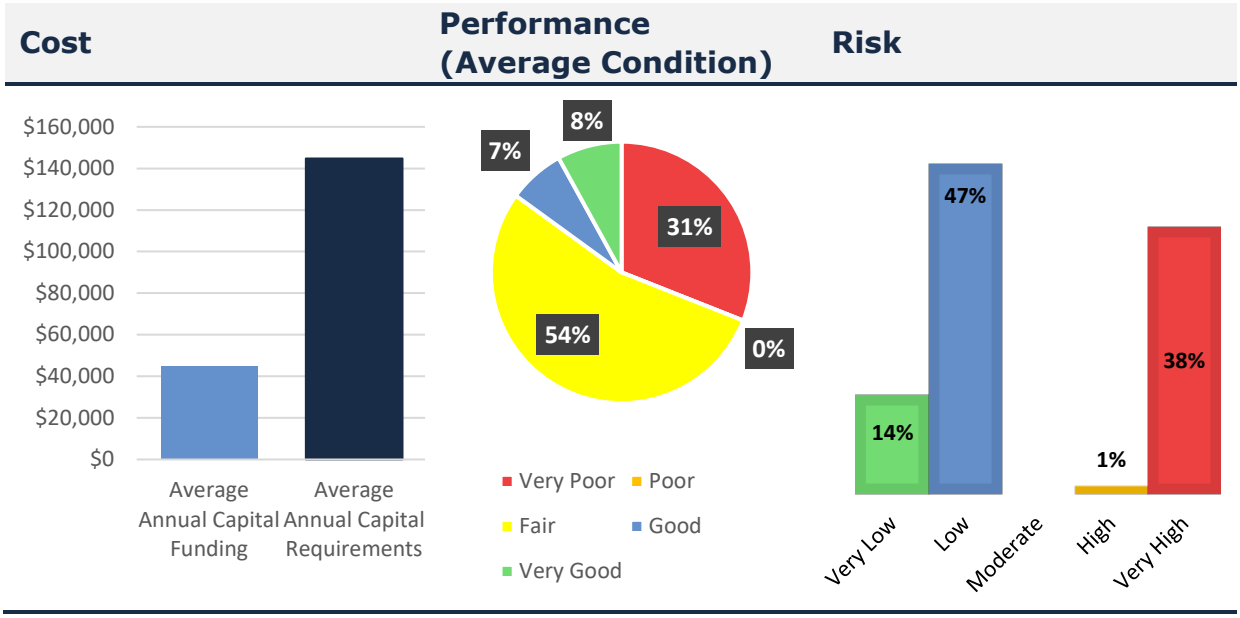


This is a high-level model developed by Township staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

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

13.6 Levels of Service

The following tables identify the Township's current level of service for the sanitary network.



These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17.

13.6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system	See Appendix C
Reliability	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	The Township does not own any combined sewers
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	The Township does not own any combined sewers
	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g. weeping tiles). In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its designed capacity.
	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration	The Township follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers.
	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.

13.6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of properties connected to the municipal wastewater system	6%
Reliability	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	0
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0
	Average Condition	43%
	Average Risk	11.11 (High)

14 Impacts of Growth

14.1 Key Insights

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

14.2 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, as well as the upgrade or dispose of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

14.2.1 Sables-Spanish Rivers Official Plan (2020)

The Township recently adopted a new Official Plan to ensure conformance with the provincial and upper tier documents, and address matters of local planning interest. The Official Plan is a planning document for the purpose of guiding the future development of the Township of Sables-Spanish Rivers.

The population has remained relatively stable over the last thirty-five years within the Sables-Spanish Rivers Planning Area e.g., 3,350 (1981) to 3,214 (2016) to 3,237(2021). The Official Plan provides for a potential population of 3,900 by the end of the Planning Period in 2045 recognizing that growth will be largely driven by in-migration associated with retirement and/or economic development initiatives.

Future growth in the municipality will occur through significant opportunities for settlement in the three designated urban areas (Massey, Webbwood, Walford), through the attraction of waterfront residential development and through limited development in the rural area. The settlement pattern, while permitting these opportunities, will not compromise the conservation of the natural resource base, the protection of the natural environment nor the ability of the municipality to deliver and maintain cost-effective infrastructure and public services.

14.3 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.

Planning for forecasted population growth may require the expansion of existing infrastructure and services. As growth-related assets are constructed or acquired, they should be integrated into the Township's asset management program.

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.

15 Financial Strategy

15.1 Key Insights

- The Township is committing approximately $1.3 million towards capital projects per year from sustainable revenue sources
- Given the annual capital requirement of $4.2 million, there is currently a funding gap of $2.9 million annually
- For tax-funded assets, we recommend increasing tax revenues by 2.1% each year for the next 20 years to achieve a sustainable level of funding and reallocating available debt payments to capital funding
- For the water network, we recommend increasing rate revenues by 2.9% annually for the next 20 years to achieve a sustainable level of funding
- For the sanitary network, we recommend increasing rate revenues by 4.1% annually for the next 20 years to achieve a sustainable level of funding

15.2 Financial Strategy Overview

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Township of Sables-Spanish Rivers to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

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

1. The financial requirements for:
    a. Existing assets
    b. Existing service levels
    c. Requirements of contemplated changes in service levels (none identified for this plan)
    d. Requirements of anticipated growth (none identified for this plan)
2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Reserves
    d. Debt

3. Use of non-traditional sources of municipal funds:
    a. Reallocated budgets
    b. Partnerships
    c. Procurement methods
4. Use of Senior Government Funds:
    a. Canada Community Building Fund (CCBF)
    b. Annual grants

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

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

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

15.3 Annual Requirements & Capital Funding

15.3.1 Annual Requirements

The annual requirements represent the amount the Township should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability. In total, the Township allocation is approximately $1.3 million annually.

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

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

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

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	$3,759,422	$2,214,319	$1,545,104

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of approximately $1.55 million for the road network. This represents an overall reduction of the annual requirements by 41%. As the lifecycle strategy scenario represents the lowest cost option available to the Township, we have used this annual requirement in the development of the financial strategy.

15.3.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $1.3 million towards capital projects per year from sustainable revenue sources. Given the annual capital requirement of $4.2 million, there is currently a funding gap of $2.9 million annually.

15.4 Funding Objective

A scenario has been developed that would enable Sables-Spanish Rivers to achieve full funding within 1 to 20 years for the following assets:

1. **Tax Funded Assets:** Road Network, Bridges & Culverts, Stormwater Network, Buildings, Land Improvements, Waste Management, Machinery & Equipment, & Vehicles
2. **Rate Funded Assets:** Water Network, & Sanitary Network

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

15.5 Financial Profile: Tax Funded Assets

15.5.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Taxes	CCBF	OCIF	Total	
Road Network	$2.2m	$457k	$204k	$158k	$819k	$1.4m
Bridges & Culverts	$591k	$128k			$128k	$462k
Buildings	$494k	$107k			$151k	$343k
Land Improvements	$14k	$3k			$3k	$11k
Machinery & Equipment	$168k	$36k			$36k	$131k
Vehicles	$218k	$47k			$47k	$170k
Stormwater Network	$39k	$9k			$9k	$31k
Waste Management	$15k	$3k			$3k	$11k
	$3.8m	**$834k**	**$204k**	**$158k**	**$1.2m**	**$2.6m**

The average annual investment requirement for tax funded assets is $3.8 million. Annual revenue allocated to these assets for capital purposes is $1.2 million leaving an annual deficit of $2.6 million. Put differently, these infrastructure categories are currently funded at 31% of their long-term requirements.

15.5.2 Full Funding Requirements

In 2024, Township of Sables-Spanish Rivers will have an annual tax revenue of 4,959,039. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Road Network	28.1%
Bridges & Culverts	9.3%
Buildings	6.9%
Land Improvements	0.2%
Machinery & Equipment	2.6%
Vehicles	3.4%
Stormwater Network	0.6%
Waste Management	0.2%
	51.5%

The table below presents several options:

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	$2,555,874	$2,555,874	$2,555,874	$2,555,874
Tax Increase Required	51.5%	51.5%	51.5%	51.5%
Annually	8.7%	4.2%	2.8%	2.1%

15.6 Financial Profile: Rate Funded Assets

15.6.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Taxes	CCBF	OCIF	Total Available	
Water Network	$329k	$60k			$60k	$269k
Sanitary Network	$145k	$45k			$45k	$100k
	$474k	$105k	$0		$105k	$369k

The average annual investment requirement for the above categories is $474 thousand. Annual revenue currently allocated to these assets for capital purposes is $116 thousand leaving an annual deficit of $369 thousand. Put differently, these infrastructure categories are currently funded at 22.2% of their long-term requirements.

15.6.2 Full Funding Requirements

In 2024, Township of Sables-Spanish Rivers has annual water network and sanitary network revenues of $350k & $80.7k respectively. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following rate changes over time:

Asset Category	Tax Change Required for Full Funding
Water Network	76.9%
Sanitary Network	123.6%
	85.7%

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

Water Network				
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	$269k	$269k	$269k	$269k
Rate Revenue Increase Required	76.9%	76.9%	76.9%	76.9%
Annually	**12.1%**	**5.9%**	**3.9%**	**2.9%**

Sanitary Network				
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	$100k	$100k	$100k	$100k
Rate Revenue Increase Required	123.6%	123.6%	123.6%	123.6%
Annually	**17.5%**	**8.4%**	**5.5%**	**4.1%**

15.7 Use of Debt

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a $1M project financed at 3.0% over 15 years would result in a 26% premium or $260,000 of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

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

Sustainable funding models that include debt need to incorporate the risk of rising interest rates. A change in 15-year rates from 3% to 6% would change the premium from 26% to 54%. Such a change would have a significant impact on a financial plan.

The revenue options outlined in this plan allows Sables-Spanish Rivers to fully fund its long-term infrastructure requirements without further use of debt.

15.8 Use of Reserves

15.8.1 Available Reserves

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

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

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

- breadth of services provided
- age and condition of infrastructure
- use and level of debt
- economic conditions and outlook
- 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 Sables-Spanish Rivers' 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.

16 Recommendations

16.1 Financial Strategies

1. Review feasibility of adopting a full-funding scenario that achieve 100% of average annual requirements for the asset categories analyzed. This involves:
    - For tax-funded assets, the Township has a 2.1% increase to capital funding for 20 years.
    - For the Sanitary Network, we recommend increasing rate revenues by 4.1% annually for the next 20 years to achieve a sustainable level of funding.
    - For the Water Network, we recommend increasing rate revenues by 2.9% annually for the next 20 years to achieve a sustainable level of funding.
2. Continued allocation of OCIF and CCBF funding as previously outlined
3. Using risk frameworks and staff judgement to prioritize projects, particularly to aid in elimination of existing infrastructure backlogs

16.2 Asset Data

1. Continuously review, refine, and calibrate lifecycle and risk profiles to better reflect actual practices and improve capital projections. In particular:
    - the timing of various lifecycle events, the triggers for treatment, anticipated impacts of each treatment, and costs
    - the various attributes used to estimate the likelihood and consequence of asset failures, and their respective weightings
2. Asset management planning is highly sensitive to replacement costs. Periodically update replacement costs based on recent projects, invoices, or estimates, as well as condition assessments, or any other technical reports and studies.
3. An asset's established serviceable life can have dramatic impacts on all projections and analyses, including condition, long-range forecasting, and financial recommendations. Periodically reviewing and updating these values to better reflect in-field performance and staff judgement is recommended.

16.3 Risk and Levels of Service

1. Risk models can play an important role in identifying critical assets, and developing an action plan. As the data evolves and new attribute information is obtained, these models should also be refined and updated.
2. Available, data on current performance should be centralized and tracked to support any calibration of service levels ahead of O. Reg. 588's 2025 requirements on proposed levels of service.

Appendix A: Infrastructure Report Card

Asset Category	Replacement Cost	Asset Condition	Financial Capacity	
Road Network	$218,257,950	Good (62%)	Annual Requirement:	$2,214,8319
			Funding Available:	$818,799
			Annual Deficit:	$1,395,520
Bridges & Culverts	$18,112,319	Good (63%)	Annual Requirement:	$590,578
			Funding Available:	$128,217
			Annual Deficit:	$462,361
Stormwater Network	$3,145,458	Very Good (88%)	Annual Requirement:	$39,318
			Funding Available:	$8,536
			Annual Deficit:	$30,782
Buildings	$14,413,723	Fair (56%)	Annual Requirement:	$494,036
			Funding Available:	$107,258
			Annual Deficit:	$386,779
Land Improvements	$226,871	Very Good (97%)	Annual Requirement:	$14,163
			Funding Available:	$3,075
			Annual Deficit:	$11,088
Vehicles	$2,542,198	Fair (56%)	Annual Requirement:	$217,574
			Funding Available:	$47,236
			Annual Deficit:	$170,338
Machinery & Equipment	$2,975,246	Good (67%)	Annual Requirement:	$167,685
			Funding Available:	$36,405
			Annual Deficit:	$131,280
Water Network	$16,673,686	Good (75%)	Annual Requirement:	$329,228
			Funding Available:	$60,000
			Annual Deficit:	$269,228
Sanitary Network	$6,406,402	Fair (43%)	Annual Requirement:	$144,775
			Funding Available:	$45,000
			Annual Deficit:	$99,775
Waste Management	$266,196	Good (61%)	Annual Requirement:	$14,534
			Funding Available:	$3,155
			Annual Deficit:	$11,379
Overall	$282,753,853	Good (62%)	Annual Requirement:	$4,226,210
			Funding Available:	$1,301,333
			Annual Deficit:	$2,924,877

Appendix B: 10-Year Capital Requirements

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

Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Road Network	$3.6m	$0	$4.4m	$4.5m	$0	$364k	$8.0m	$3.6m	$234k	$0
Bridges & Culverts	$3.2m	$99k	$0	$478k	$0	$0	$0	$25k	$0	$6.3m
Buildings	$891k	$167k	$3.4m	$676k	$237k	$1.1m	$32k	$836k	$1.2m	$0
Land Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$69k	$0
Machinery & Equipment	$47k	$0	$37k	$6k	$134k	$118k	$31k	$89k	$198k	$71k
Vehicles	$133k	$408k	$0	$195k	$193k	$233k	$199k	$0	$154k	$59k
Water Network	$601k	$14k	$18k	$0	$11k	$208k	$1.2m	$5k	$0	$0
Sanitary Network	$0	$0	$0	$0	$0	$0	$0	$11k	$0	$1.0m
Storm Water Network	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Waste Management	$0	$0	$0	$0	$0	$0	$0	$0	$0	$96k
Total	**$8.5m**	**$688k**	**$7.9m**	**$5.8m**	**$576k**	**$2.0m**	**$9.5m**	**$4.5m**	**$1.9m**	**$7.5m**

Road Network

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Asphalt	$2.4m	$0	$3.2m	$2.5m	$0	$20k	$5.2m	$3.6m	$12k	$0
Curb & Gutter	$0	$0	$0	$0	$0	$0	$266k	$0	$0	$0
Sidewalks	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Streetlights	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tar & Chip	$1.2m	$0	$1.2m	$2.0	$0	$344k	$2.5m	$0	$221k	$0
Total	**$3.6m**	**$0**	**$4.4m**	**$4.5m**	**$0**	**$364k**	**$8.0m**	**$3.6m**	**$234k**	**$0**

Bridges & Culverts

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Culverts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6.1m
Bridges	$3.2m	$99k	$0	$478k	$0	$0	$0	$25k	$0	$186k
Total:	**$3.2m**	**$99k**	**$0**	**$478k**	**$0**	**$0**	**$0**	**$25k**	**$0**	**$6.3m**

Stormwater Network

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Catchbasins	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Storm Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Storm Manholes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Buildings

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Admin	$0	$28k	$80k	$0	$0	$104k	$19k	$83k	$33k	$0
Fire	$46k	$26k	$231k	$65k	$58k	$205k	$0	$66k	$122k	$0
Health	$822k	$61k	$598k	$0	$0	$18k	$0	$42k	$0	$0
Public Works	$0	$26k	$4k	$75k	$21k	$299k	$0	$23k	$715k	$0
Recreation	$24k	$26k	$2.5m	$536k	$157k	$442k	$13k	$623k	$331k	$0
Total:	**$891k**	**$167k**	**$3.4m**	**$676k**	**$237k**	**$1.1m**	**$32k**	**$836k**	**$1.2m**	**$0**

Land Improvements

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Cemeteries	$0	$0	$0	$0	$0	$0	$0	$0	$25k	$0
Health	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Recreation	$0	$0	$0	$0	$0	$0	$0	$0	$44k	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$69k**	**$0**

Waste Management

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Cameron Falls Landfill	$0	$0	$0	$0	$0	$0	$0	$0	$0	$96k
May Waste Disposal Site	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Webbwood Transfer Station	$0	$0	$0	$0	$0	$0	$0	$0	$44k	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$96k**

Machinery & Equipment

Segment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Fire	$0	$0	$0	$0	$20k	$97k	$0	$0	$191k	$35k
IT	$0	$0	$10k	$6k	$0	$21k	$0	$10k	$6k	$0
Public Works	$0	$0	$0	$0	$0	$0	$0	$79k	$0	$9k
Recreation	$47k	$0	$27k	$0	$114k	$0	$31k	$0	$0	$27k
Total:	**$47k**	**$0**	**$37k**	**$6k**	**$134k**	**$118k**	**$31k**	**$89k**	**$198k**	**$71k**

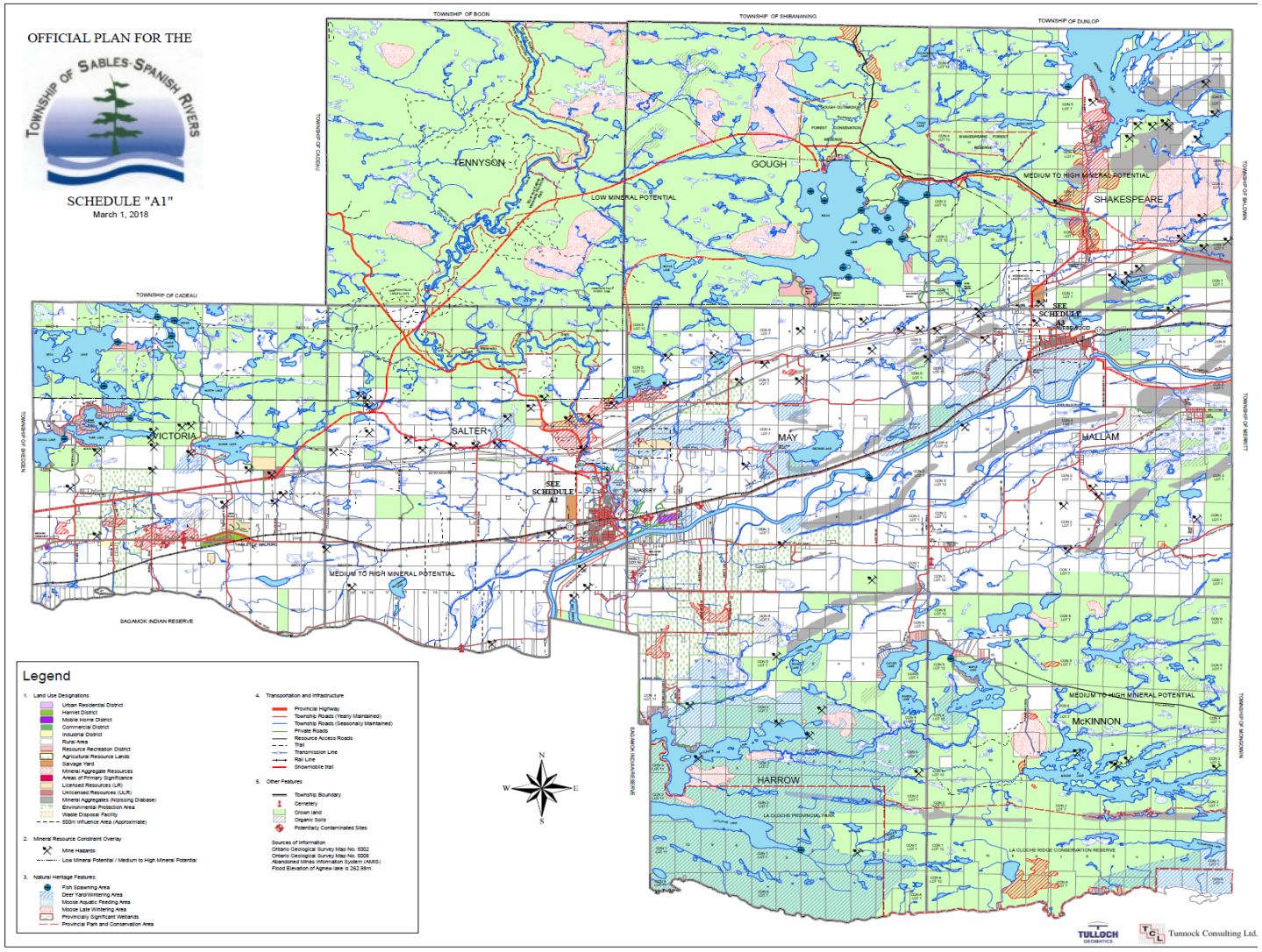
Vehicles										
Segment	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Buildings	$0	$0	$0	$0	$59k	$0	$0	$0	$0	$59k
Fire	$133k	$142k	$0	$0	$135k	$0	$101k	$0	$0	$0
Public Works	$0	$266k	$0	$138k	$0	$233k	$97k	$0	$96k	$0
Recreation	$0	$0	$0	$57k	$0	$0	$0	$0	$57k	$0
Total:	**$133k**	**$408k**	**$0**	**$195k**	**$193k**	**$233k**	**$199k**	**$0**	**$154k**	**$59k**

Water Network										
Segment	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Fire Water Supply Line	$0	$0	$0	$0	$0	$0	$1.1m	$0	$0	$0
Small Water Systems	$0	$3k	$0	$0	$0	$0	$0	$0	$0	$0
Treatment Plant	$414k	$11k	$18k	$0	$11k	$164k	$29k	$5k	$0	$0
Water Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water Storage Tank	$187k	$0	$0	$0	$0	$43k	$0	$0	$0	$0
Total:	**$601k**	**$14k**	**$18k**	**$0**	**$11k**	**$208k**	**$1.2m**	**$5k**	**$0**	**$0**

Sanitary Network										
Segment	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Forcemain	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Lagoons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sanitary Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1.0m
Wastewater Pumping Station	$0	$0	$0	$0	$0	$0	$0	$11k	$0	$0
Sanitary Manholes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$11k**	**$0**	**$1.0m**

Appendix C: Level of Service Maps

Road Network Map



Images of Bridge in Good Condition

MUNICIPAL BRIDGE APPRAISAL

BRIDGE PHOTOGRAPHS 2020 Biennial Inspection

Structure: Township of Sables-Spanish Rivers Structure #: 6

Photo Description: Soffit.

Photo Description: Typical guiderail and deck condition. Note sand/gravel accumulation.

Images of Culvert in Fair Condition

MUNICIPAL CULVERT APPRAISAL

CULVERT PHOTOGRAPHS 2020 Biennial Inspection

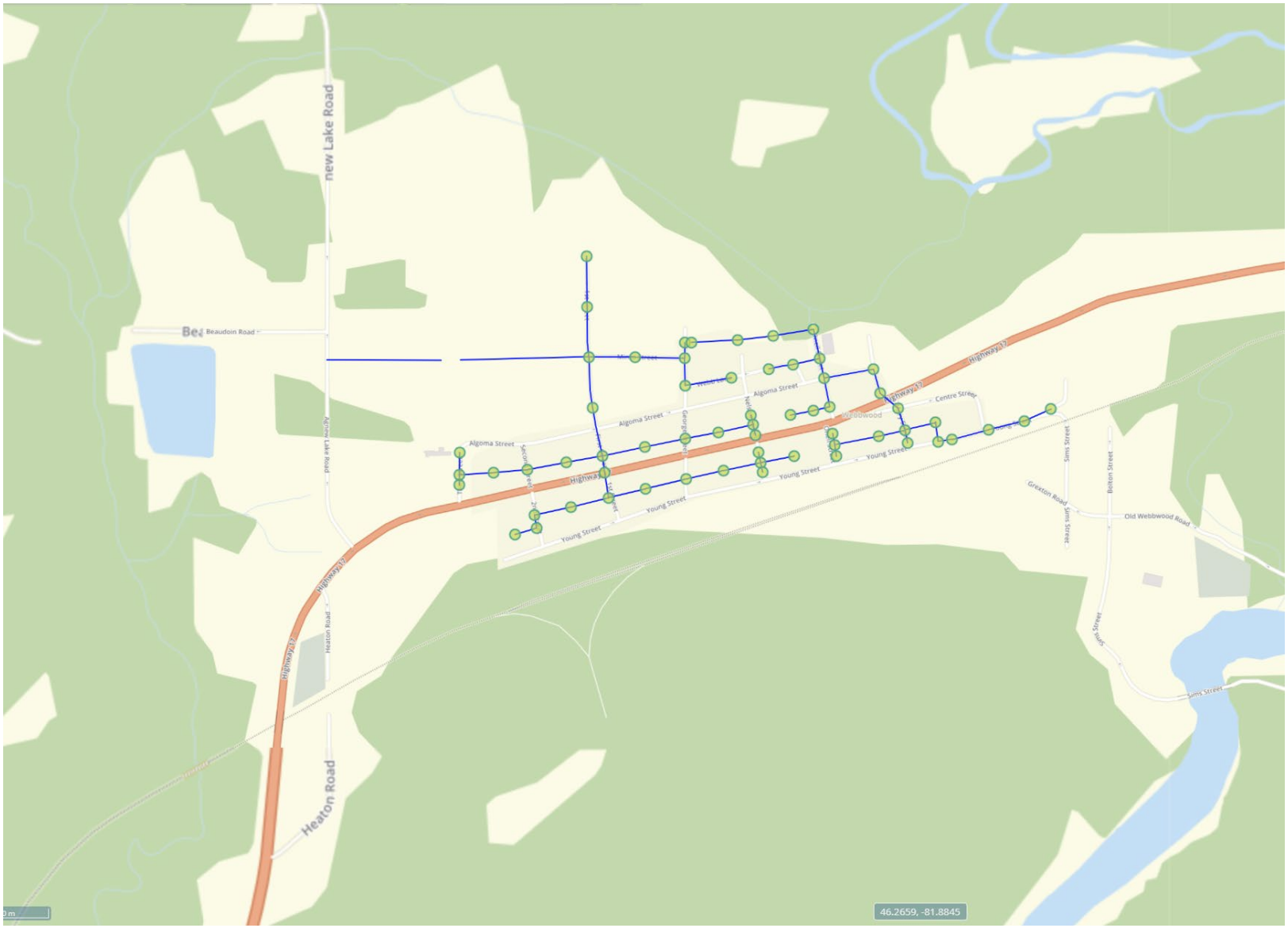
Structure: Township of Sables-Spanish Rivers Structure #: 2

Photo Description: View through culvert.

Photo Description: Detail at cutoff wall. Typical condition of metal components.

Stormwater Network Map

Webbwood Sanitary Network Map



Massey Water Network Map

Appendix D: Risk Rating Criteria

General Risk Definitions

Risk	Integrating a risk management framework into your asset management program requires the translation of risk potential into a quantifiable format. This will allow you to compare and analyze individual assets across your entire asset portfolio. Asset risk is typically defined using the following formula: Risk = Probability of Failure (POF) x Consequence of Failure (COF)
Probability of Failure (POF)	The probability of failure relates to the likelihood that an asset will fail at a given time. The current physical condition and service life remaining are two commonly used risk parameters in determining this likelihood.
POF - Structural	The likelihood of asset failure due to aspects of an asset such as load carrying capacity, condition or breaks
POF - Functional	The likelihood of asset failure due to its performance
POF - Range	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
Consequences of Failure (COF)	The consequence of failure describes the overall effect that an asset's failure will have on an organization's asset management goals. Consequences of failure can range from non-eventful to impactful: a small diameter water main break in a subdivision may cause several rate payers to be without water service for a short time. However, a larger trunk water main may break outside a hospital, leading to significantly higher consequences.
COF - Economic	The monetary consequences of asset failure for the organization and its customers
COF - Social	The consequences of asset failure on the social dimensions of the community
COF - Environmental	The consequence of asset failure on an asset's surrounding environment
COF - Operational	The consequence of asset failure on the Town's day-to-day operations
COF - Health & safety	The consequence of asset failure on the health and well-being of the community
COF - Strategic	The consequence of asset failure on strategic planning
COF - Range	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe

Framework

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
General / Corporate		COF	Economic	100%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
		POF	Structural	60%	Age Based Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Bridges & Culverts	Bridges	COF	Economic	100%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
	Culverts	COF	Economic	50%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	50%	Surface Type	50%	Gravel Tar & Chip Asphalt	2 - Minor 3 - Moderate 4 - Major
					Diameter	50%	<3m >3M and equal to	2 - Minor 4 - Major
		POF	Structural	60%	Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Road Network	Roads	COF	Economic	50%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	50%	Surface Type	100%	Gravel Surface Treatment Asphalt	2 - Minor 3 - Moderate 4 - Major
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Stormwater Network	Catchbasin / Manholes	COF	Economic	70%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	30%	Surface Type	100%	Gravel Tar & Chip Asphalt	2 – Minor 3 – Moderate 4 – Major
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Stormwater Network Continued	Storm Mains	COF	Economic	50%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	50%	Surface Type	50%	Gravel Tar & Chip Asphalt	2 – Minor 3 – Moderate 4 – Major
					Diameter	50%	200 250 375 & 400 >450 & < 700 >700	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Sanitary Network	Sanitary Mains	COF	Economic	50%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	50%	Surface Type	50%	Gravel Tar & Chip Asphalt	2 – Minor 3 – Moderate 4 – Major
					Diameter	50%	200 250 375 & 400 >450 & < 700 >700	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Sanitary Network Continued	Rest of the System	COF	Economic	70%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	30%	System Segments	100%	Manholes Lagoon, Mains & Forcemains Pumping Stations	2 - Minor 4 - Major 5 - Severe
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Water Network	Water Mains / Water Services	COF	Economic	70%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	30%	Diameter	50%	> 100 100 - 150 150 - 300 300 - 400 > 400	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
Water Network Continued	Rest of the System	COF	Economic	70%	Replacement Cost	100%	0 - 5,000 5,000 - 20,000 20,000 - 50,000 50,000 - 100,000 >100,000	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
			Operational	30%	System Segments	100%	Services Small Water Systems Webbwood Fire Sup. Storage & Mains Treatment Plant	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe
		POF	Structural	60%	Assessed Condition	100%	80 - 100 60 - 79 40 - 59 20 - 39 0 - 19	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
			Functional	40%	Service Life Remaining	100%	> 40 20 - 30 10 - 20 1 - 10 < 1	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Appendix E: Condition Assessment Guidelines

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

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

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

Role of Asset Condition Data

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

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

Guidelines for Condition Assessment

Whether completed by external consultants or internal staff, condition assessments should be completed in a structured and repeatable fashion, according to consistent and objective assessment criteria. Without proper guidelines for the completion of condition assessments there can be little confidence in the validity of condition data and asset management strategies based on this data.

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating

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

Developing a Condition Assessment Schedule

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

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