2025 ASSET MANAGEMENT PLAN

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Executive Summary

Municipal infrastructure is the foundation of a community's economic, social, and environmental well-being, as it enables the delivery of essential public services. The goal of asset management is to ensure that these services are delivered in a cost-effective, sustainable, and resilient manner. Achieving this requires the development and implementation of targeted asset management strategies and long-term financial planning.

The Township of Sables-Spanish Rivers owns infrastructure assets with a total replacement value of approximately $303.6 million. An analysis of current conditions shows that 80% of assets are in Fair condition or better. Assessed condition data is available for 96% of roads, 85% of buildings, 79% of bridges & culverts, 54% of the sanitary network and 27% of land improvement assets. For the remaining categories, where direct assessments were not available, asset age was used as a proxy, a common approach, though one that often misrepresents true asset conditions. This data gap underscores the importance of ongoing

condition assessments, which remain a recurring recommendation across municipalities.

A sustainable financial strategy must be based on the analysis of whole lifecycle costs. The Township applied a combination of proactive lifecycle strategies (for roads) and replacement-only strategies (for other asset types) to identify the most cost-effective methods of maintaining existing service levels. Based on this analysis, the Township's proposed level of service is to maintain an average asset condition of "Fair" with a long-term goal of maintaining an average condition of "Good".

To achieve this, the Township requires an average annual capital reinvestment of tax funded assets of $1.7 million. However, based on a historical review of sustainable funding sources, the Township is currently committing approximately $1.27 million per year to capital projects or reserves. This results in the Township funding 74% of its annual capital needs, leaving a funding deficit of $440 thousand annually.

Managing the Infrastructure Funding Gap

Addressing this infrastructure funding shortfall is a long-term challenge that most municipalities across Ontario—and Canada—are facing. The Township recognizes that reaching full funding will require many years. Short phase-in periods may place excessive financial pressure on taxpayers, while overly long timeframes (e.g., beyond 20 years) risk continued deterioration of infrastructure and the buildup of even larger capital backlogs.

To address the gap, it is recommended that the Township explore the feasibility of implementing a 1.0% annual increase in tax revenues dedicated to capital infrastructure, phased in over a 20-year period. This increase will fully fund the proposed level of service to maintain an average condition of "Fair" in ten years and "Good" condition in twenty years Alternative scenarios with shorter phase-in timelines have also been evaluated, though these would require higher annual increases.

Risk-Based Prioritization and Lifecycle Management

To guide decision-making, the Township has begun integrating risk frameworks and levels of service targets into its asset management system. These tools will support project prioritization and enable the selection of the right intervention—at the right time—for the right assets. Preliminary risk models have been developed and integrated with the Township's asset register, producing risk matrices that categorize assets based on their likelihood and consequence of failure.

Water and Sanitary Systems

The proposed levels of service for the water and sanitary systems will remain at current funding levels until further analysis can be completed. This includes a system review, rate study, condition assessment, and a financial plan, all scheduled for completion by 2027. Once finalized, this information will be incorporated into

the broader asset management program to better inform long-term decisions and service targets.

Ongoing Commitment to Continuous Improvement

Like many municipalities, Sables-Spanish Rivers faces significant infrastructure challenges rooted in decades of underinvestment. Addressing these will require sustained effort, long-term planning, and incremental progress. Key recommendations moving forward include:

- Ongoing improvement of infrastructure data to support accurate analysis and long-term planning.
- Refinement of risk and lifecycle models as new data becomes available, improving prioritization and strategic budgeting.
- Monitoring of key performance indicators (KPIs) for infrastructure systems, allowing for the regular calibration of levels of service.

The Township has made meaningful progress in advancing its asset management program, including the creation of a more complete and accurate asset register—a foundational achievement. Maintaining and enhancing this register will be essential to support fiscally responsible service delivery, strategic reinvestment, and the long-term sustainability of the community’s infrastructure.

About this Document

The Sables-Spanish Rivers Asset Management Plan was developed in accordance with Ontario Regulation 588/17 ("O. Reg 588/17"). It contains a comprehensive analysis of Sables-Spanish Rivers' infrastructure portfolio. This is a living document that should be updated regularly as additional assets and financial data become available.

Ontario Regulation 588/17

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

Table 1 Ontario Regulation 588/17 Requirements and Reporting Deadlines

Requirement	2019	2022	2024	2025
1. Strategic Asset Management Policy	✓		✓	
2. 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				✓

Scope

The scope of this document is to identify the current practices and strategies that are in place to manage the public infrastructure and to make 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 services.

Limitations and Constraints

The asset management program development required substantial effort by staff, it was developed based on best-available data, and is subject to the following broad limitations, constraints, and assumptions:

- The analysis is sensitive to several critical data fields, including an asset's estimated useful life, replacement cost, quantity, and in-service date. Inaccuracies or imprecisions in any of these fields can have substantial and cascading impacts on all reporting and analytics.
- User-defined and unit cost estimates, based typically on staff judgement, recent projects, or established through completion of technical studies, offer the most precise approximations of current replacement costs. When this is not possible, historical costs incurred at the time of asset acquisition or construction can be inflated to the present day. This approach, while sometimes necessary, can produce inaccurate estimates.
- In the absence of condition assessment data, age was used to estimate asset condition ratings. This approach can result in an over- or understatement of asset needs. As a result, financial requirements generated through this approach can differ from those produced by in-field assessments.
- The risk models are designed to support objective project prioritization and selection. However, in addition to the inherent limitations that all models face, they also require availability of important attribute data to ensure that asset risk ratings are valid, and assets are properly stratified within the risk matrix. Missing attribute data can misclassify assets.

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

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

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 and levels of service the community receives from the asset portfolio.

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

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan and various asset management documents.

Foundational Documents

In the municipal sector ‘asset management strategy’ and ‘asset management plan’ are often used interchangeably. Other concepts such as ‘asset management framework’, ‘asset management system’, and ‘strategic asset management plan’ further add to the confusion; lack of consistency in the industry on the purpose and definition of these elements offers little clarity. To make a clear distinction between the policy, strategy, and the plan see the following sections for detailed descriptions of the document types.

Strategic Plan

The strategic plan has a direct, and cascading impact on asset management planning and reporting, making it a foundational element. Developing alignment with corporate goals and objectives through service delivery and lifecycle management ensures the Township has line of sight to achieve their strategic objectives.

Asset Management Policy

An asset management policy represents a statement of the principles guiding the Township’s approach to asset management activities as well as their commitment. It aligns with the organization and provides clear directions to municipal staff on their roles and responsibilities.

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 its asset management objectives through planned activities and decision-making criteria.

Key Technical Concepts

Effective asset management integrates several key components, including data management, lifecycle management, risk management, and levels of service.

Asset Hierarchy and Data Classification

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

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.

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 assets' SLR, the Township can more accurately forecast when it will require replacement. The SLR is calculated as follows:

Figure 1: Service Life Remaining Calculation

Reinvestment Rate

As assets age and deteriorate, they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment

rate is a measurement of available or required funding relative to the total replacement cost. The reinvestment rate is calculated as follows:

Figure 2: Target and Actual Reinvestment Calculations

By comparing the actual vs. target reinvestment rate the Township can determine the extent of any existing funding gap.

Asset Condition

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 figure below outlines the condition rating system used to determine asset condition for all assets in Sables-Spanish Rivers.

Table 3 Standard Condition Rating Scale

Condition	Description	Criteria	Condition Score
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 K: Condition Assessment Guidelines include additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

Lifecycle Management Strategies

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including 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. Figure 4 provides a description of each type of activity and the general difference in cost.

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

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 the useful life at the lowest total cost of ownership.

Figure 4 Lifecycle Management Typical Interventions

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	$$
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	Full Reconstruction	$$$

Risk Management Strategies

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

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused. This AMP includes a high-level evaluation of asset risk and criticality through qualitative and quantitative methodologies.

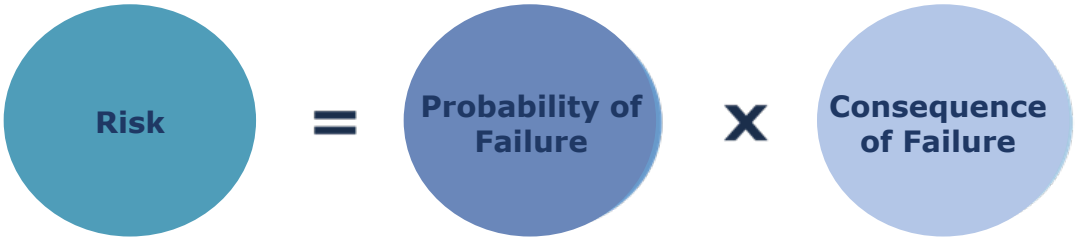
Qualitative Approach to Risk

The qualitative risk assessment involves the documentation of risks to the delivery of services that the Township faces given the current state of the infrastructure and asset management strategies. These risks can be understood as corporate level risks.

Quantitative Approach to Risk

Asset risk is defined using the following formula:

Figure 5 Risk Equation



The probability of failure relates to the likelihood that an asset will fail at a given time. The probability of failure focuses on two highly imperative impacts for risk assessment – structural and functional impacts. Structural impacts are related to the structural aspects of an asset such as load carrying capacity, condition, or breaks; whereas the functional impacts can include parameters, slope, traffic count, and other impacts that can affect the performance of an asset.

The consequence of failure describes the overall effect that an asset failure will have on an organization's asset management goals. The consequences of failure can range from non-eventful to impactful.

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.

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. 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. To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices.

Impacts of Growth

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

As growth-related assets are constructed or acquired, they should be integrated into Sables-Spanish Rivers' 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, and these costs should be considered in long-term funding strategies.

Levels of Service

A level of service (LOS) is a measure of the services that Sables-Spanish Rivers 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. 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 LOS is 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 has determined the qualitative descriptions that will be used. The community LOS can be found in the Levels of Service subsection within each asset category section in the appendix.

Technical Levels of Service

Technical LOS 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.

Current and Proposed Levels of Service

In developing an effective asset management plan, it is imperative to establish clear levels of service across key service areas to ensure the efficient and sustainable delivery of municipal services. The Township established current levels of service as well as proposed levels of service, in accordance with O. Reg. 588/17.

Proposed levels of service are realistic and achievable within the timeframe outlined by the Township. They were determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals, and long-term sustainability. The Township will identify a lifecycle management and financial strategy which will allow these targets to be achieved.

Annual Review

The annual review must address the Township's progress in implementing its asset management plan, any factors impeding the Township's ability to implement its asset management plan as well as a strategy to address any of the identified factors.

Community Profile

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 facilities, two community halls, outdoor rinks, restaurants, and farming history are but a few reasons why visitors to our community often become long-term residents.

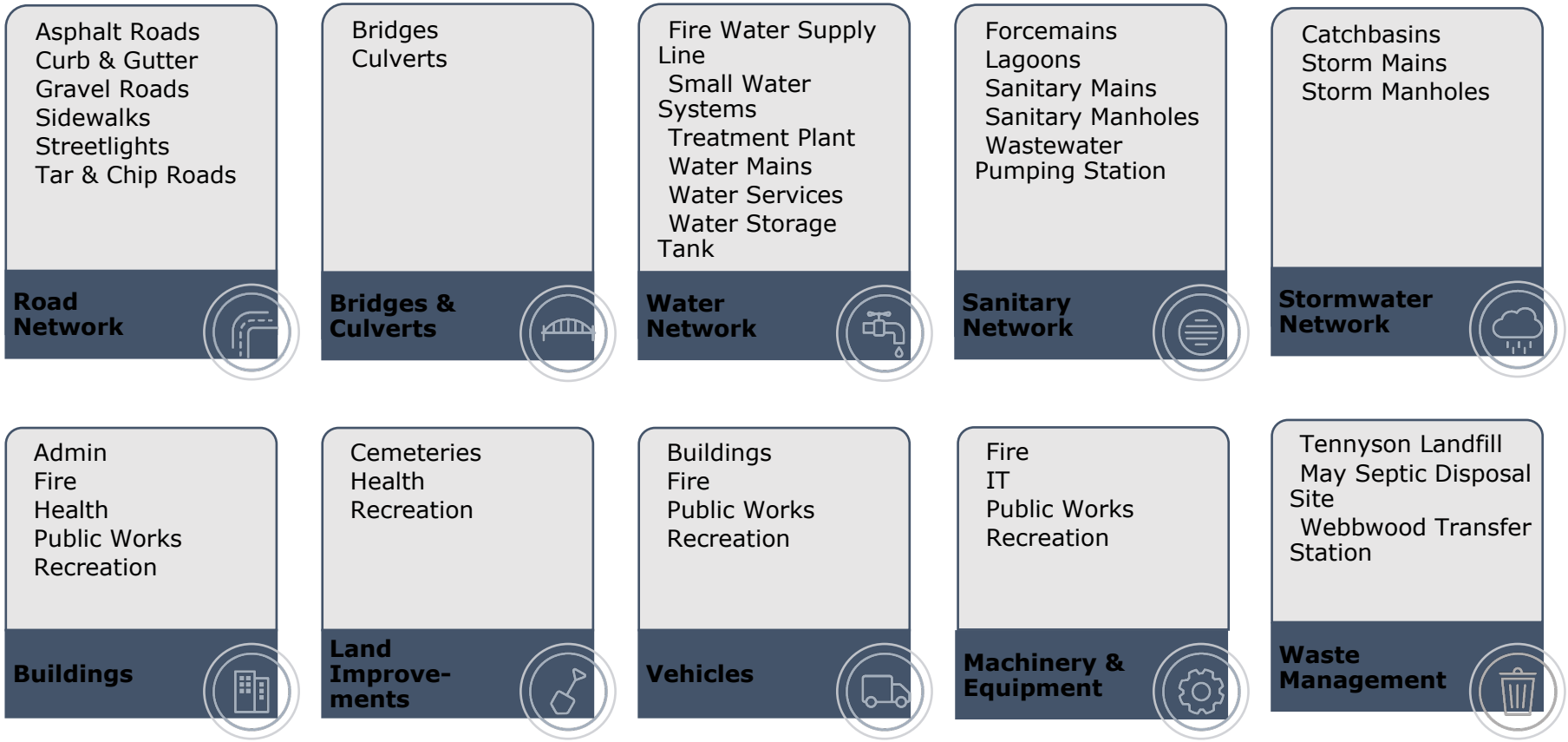
Table 2 Sables-Spanish Rivers & Ontario Census Information

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 /km2	15.9/km2
Land Area	801.04 km2	892,411.76 km2

Inventory & Valuation

The Township's inventory has an asset hierarchy of categories and segments as outlined below where the dark blue headings are the categories and the listings in grey are the segments.

Figure 6 Asset Hierarchy



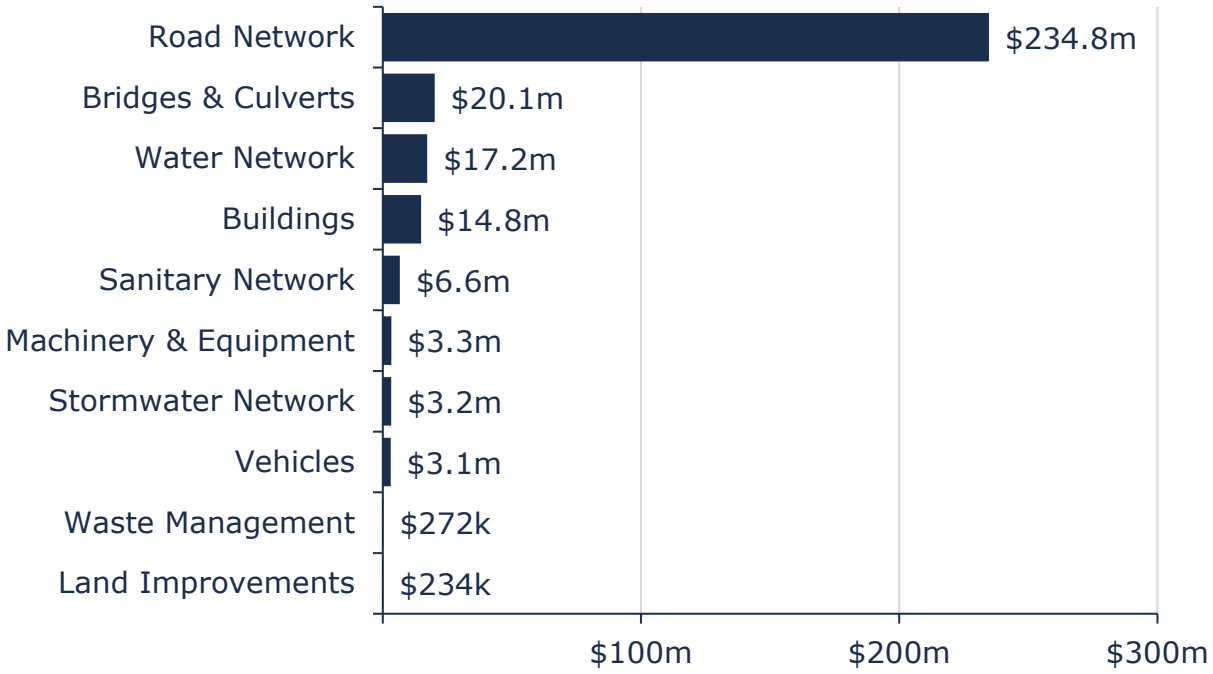
State of the Infrastructure

Asset Category	Replacement Cost	Asset Condition	Service Trend
Road Network	$234,754,902	Fair (53%)	→
Bridges & Culverts	$20,083,428	Fair (58%)	↘
Buildings	$14,813,285	Fair (53%)	↘
Land Improvements	$233,540	Very Good (96%)	↘
Vehicles	$3,091,930	Good (75%)	↘
Machinery & Equipment	$3,283,725	Good (69%)	↘
Sanitary Network	$6,594,726	Fair (42%)	↘
Stormwater Network	$3,237,903	Very Good (88%)	↘
Waste Management	$271,669	Fair (59%)	↘
Water Network	$17,193,084	Good (73%)	↘
Overall	**$303,558,192**	**Fair (55%)**	

Replacement Cost

All Sables-Spanish Rivers' asset categories have a total replacement cost of $303.6 million based on available inventory data. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Figure 7 Portfolio Replacement Value



Condition & Age

Condition of the Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 80% of assets in Sables-Spanish Rivers are in fair or better condition. This estimate relies on both age-based and field condition data.

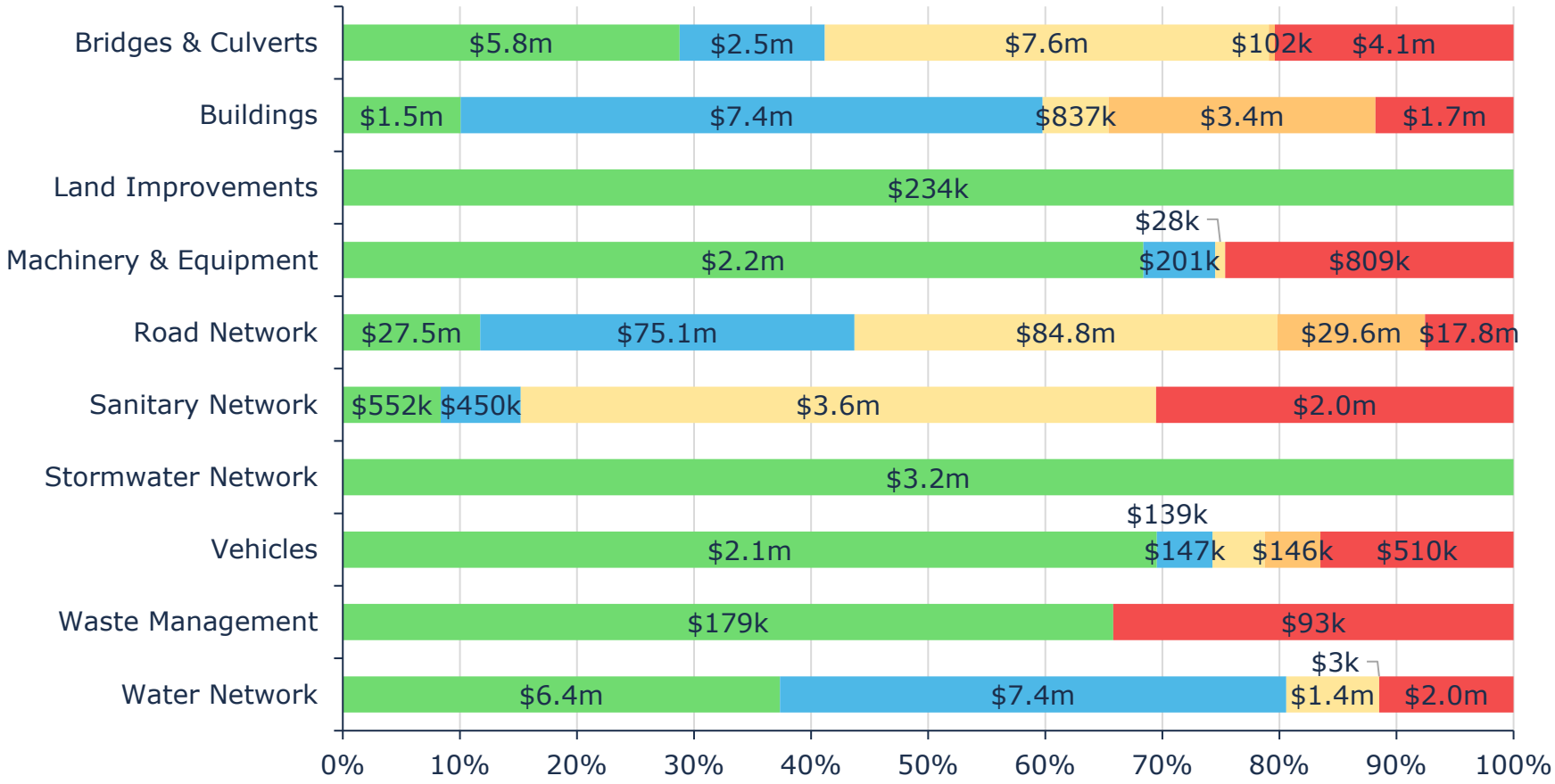
Assessed condition data is available for 85% of the assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table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

Table 3 Assessed Condition Data Sources

Asset Category	Source of Condition Data
Road Network	Staff Assessment
Bridges & Culverts	2024 Kresin Engineering Corp
Buildings	Staff Assessment
Sanitary Network	Staff Assessment
Land Improvements	Staff Assessment

The breakdown of the condition of each asset category is shown in the figure below.

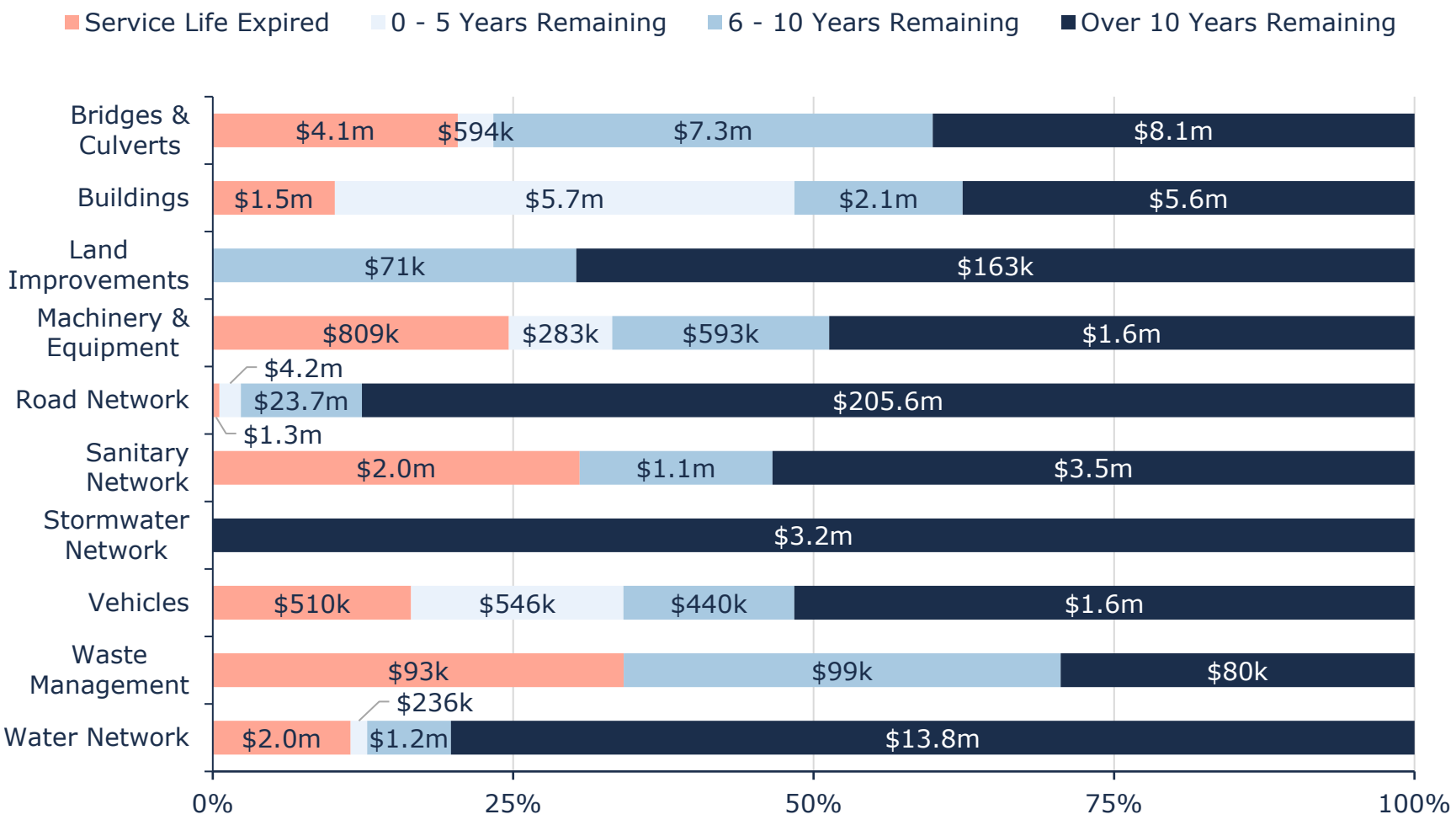
Figure 8 Overall Condition Breakdown by Asset Category



Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 20% of the Township's assets will require rehabilitation / replacement within the next 10 years. Details of the capital requirements are identified in each asset section.

Figure 9 Service Life Remaining by Category



Risk & Criticality

Qualitative Risk

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 dependent 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.

Quantitative Risk

The overall asset risk breakdown for Sables-Spanish Rivers' asset inventory is portrayed in the figure below.

Figure 10 Overall Asset Risk Breakdown

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$18,601,636 (6%)	$20,863,750 (7%)	$26,946,585 (9%)	$98,134,624 (32%)	$139,011,596 (46%)

Reviewing the list of very high-risk assets to evaluate how best to mitigate the level of risk the Township is experiencing will help advance Sables-Spanish Rivers' asset management program.

Climate & Growth

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.

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’s best practices and enables the development of a holistic approach to risk management.

Impacts of Growth

Understanding the key drivers of growth and demand will allow the Township to plan for new infrastructure effectively, and the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

Sables-Spanish Rivers Official Plan (May 2020)

The Township Official Plan ensures 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 immigration associated with retirement and/or economic development initiatives.

Future growth in the township 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 township to deliver and maintain cost-effective infrastructure and public services.

Impact of Growth on Lifecycle Activities

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

Levels of Service

The Township adopted a Strategic Plan in 2024 effective for 2024 - 2028. The purpose of a Strategic Plan is to guide the decisions and actions of Council and the municipal administration in a way that will shape the direction of the community and be attuned to the needs of the Township's residents and businesses.

Mission Statement: The Township of Sables-Spanish Rivers will provide cost effective and responsive local government through, exceptional levels of communication between residents, staff, and community leaders; by promoting healthy lifestyles and encouraging economic growth initiatives through beautification efforts; while respecting the environmental, social, and cultural diversity of the community.

Council and staff identified five strategic goals that need to be addressed to meet the Township's Mission Statements while supporting key initiatives.

Quality of Life – Providing a positive experience across various aspects of everyday life to all community members

Community Aesthetics – Creating a space visitors seek to visit, and residents are proud to call home

Infrastructure – Infrastructure that can evolve with community needs and future development

Development and Tourism – Maintaining a prosperous economy and exploring opportunities for diversification

Township Services – Provide effective municipal governance and operations

Community Engagement

It is considered best practice for municipalities across Canada to conduct periodic resident satisfaction surveys to inform service delivery and strategic planning. The Township is committed to providing accessible and inclusive opportunities for all residents to engage in Township operations and collaborative initiatives.

As part of the development of the Strategic Action Plan, a resident survey was conducted both digitally via SurveyMonkey and in paper format, with hard copies made available throughout the Township and returnable to the municipal office.

A total of 158 responses were received, representing approximately 5% of the population. This included 133 digital responses and 25 hard copy responses, all submitted anonymously. Hard copy responses were entered into the digital platform by the Deputy Clerk.

Key Findings

Question: What are the most appealing things about the Township as a community? Top three responses:

- Parks, trails, and green spaces
- Affordability
- Agricultural presence

Question: How strongly do you agree or disagree with the following statements?

- 52% of respondents agree that Sables-Spanish Rivers is a clean community
- 53% expressed pride in living in the community
- Only 14% disagreed that Township equipment is used effectively and efficiently to maintain infrastructure

Community Outreach

As part of the outreach process, two in-person engagement sessions were held—one in Massey and one in Webbwood. A total of 10 residents attended, along with municipal staff, Council members, and steering committee representatives. While the resident turnout was modest, the sessions facilitated productive and meaningful discussions among all participants.

Current Levels of Service

The Township of Sables-Spanish Rivers has defined their current levels of service for each infrastructure category by breaking it down into 3 service attributes scope, quality / reliability and performance. Each of these attributes are defined as follows:

Scope – Is a description of the services being provided and the assets that are utilized to provide the services.

Quality / Reliability – Is a description of how condition is measured as well as the current average condition of the assets utilized to provide the services. Also, for each asset category there are additional reliability measures included.

Performance – Is a description of how the Township will ensure long-term sustainability with an emphasis on affordability and is measured utilizing risk and financial parameters.

Based on an analysis of each asset category the current level of service is provided in each asset section. All the community and technical levels of service are directly linked to the service attributes for each asset category outlined in the appendix.

Proposed Levels of Service

Proposed levels of service should be realistic and achievable within the timeframe outlined by the Township. They were determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals, and long-term sustainability.

The following four scenarios have been considered for establishing target levels of service for all asset categories included in this Asset Management Plan. This methodology provides a consistent, structured approach.

Scenarios

The scenarios that were used to analyze Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - This scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The risk, condition and annual investment was then determined.

Scenario 2: Current Capital Reinvestment Rate - This scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the risk and condition were determined.

Scenario 3: Target Condition Good - This scenario utilizes a target average condition of the infrastructure of good (at 60%). The condition value was held, and the risk and annual investment was then determined.

Scenario 4: Target Condition Fair - This scenario utilizes a target average condition of the infrastructure of fair (at 40%). The condition value was held, and the risk and annual investment was then determined.

Each scenario was then evaluated based on its financial impact on the Town, the resulting overall asset condition, and any anticipated risks associated with the outcomes.

Results

Scenario 1: Current Lifecycle Activities

Scenario 1 outlines the current lifecycle activities practiced across each asset category. Under this scenario, the asset inventory is maintained at an overall good condition level, with an average condition rating of 79%. This results in low-risk exposure due to well-maintained assets. However, achieving this condition requires high annual capital funding—approximately $4.4 million per year.

While Scenario 1 ensures a strong state of asset health and minimizes service disruptions, it represents a cost-intensive approach to asset management. The trade-off here is excellent asset condition at the expense of affordability.

Scenario 2: Current Capital Reinvestment

In this scenario, the Township continues its current capital investment level of $1.4 million per year. At this funding level, the asset inventory maintains an overall average condition of Poor, with an overall condition rating of approximately 36%. However, this level of investment is insufficient to prevent significant long-term deterioration.

Projections show that under this scenario, most asset categories will decline to a Very Poor condition within 30 years. As assets reach this critical state, the Township will face increased risks, including reduced service levels, higher maintenance costs, and potential service disruptions. Maintaining this underfunded investment strategy is not sustainable and will ultimately fail to support the delivery of adequate services to the community.

Scenario 3: Target Condition Good

Scenario 3 targets an average asset condition of Good, with a condition rating of approximately 60%. This represents a balanced approach that maintains infrastructure in a state of good repair, while reducing the financial burden.

Achieving this level of service requires an estimated annual capital investment of $2.7 million. Although the resulting asset condition is Fair, the capital requirement is approximately 40% less, making this a more financially sustainable option. This scenario allows the Township to minimize long-term risks associated with asset deterioration, while ensuring that service levels remain acceptable and infrastructure performance is reliable.

Scenario 4: Target Condition Fair

Scenario 4 targets an overall average asset condition of Fair, with a condition rating of approximately 40%. This approach prioritizes financial sustainability while maintaining infrastructure at a serviceable level.

To achieve this level of service, an estimated annual capital investment of $1.7 million is required. While this results in a lower asset condition compared to Scenario 1 (78%), the capital requirement is nearly 60% lower, offering a more cost-effective solution for the Township.

This scenario supports maintaining service levels that are acceptable and consistent with current performance, while ensuring that infrastructure remains in a fair state. It represents a balanced strategy between asset performance and financial responsibility, helping the Township manage long-term infrastructure needs within a sustainable investment framework

Conclusion

The Township of Sables-Spanish Rivers is adopting a strategic, data-driven approach to ensure the long-term sustainability of its municipal services. By placing a strong emphasis on infrastructure condition and evidence-based decision-making, the Township aims to balance service quality with cost-efficiency—avoiding both over-investment and the risks associated with premature asset failure. Significant progress has been made in enhancing the accuracy and reliability of the Township's asset management system, which now provides a solid foundation for long-term financial planning and capital investment decisions.

As part of this improved framework, the Township has set a short-term target of achieving an average asset condition of "Fair" (approximately 40%). This strategic target has enabled a reduction in annual capital requirements by approximately 60% compared to full lifecycle strategies, allowing the Township to move toward a sustainable funding level more quickly.

Looking ahead, the Township plans to pursue a long-term goal of maintaining its infrastructure at an average condition of "Good", as financial capacity improves over time.

For water and sanitary infrastructure, current funding levels will be maintained while further refinements are undertaken. A comprehensive inventory review, condition assessment, and rate study are scheduled for completion by 2027. The results will be integrated into the Township's asset management program to support updated levels of service and guide future capital planning.

Financial Management

Financial Strategy Overview

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

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

The annual funding typically available is determined by averaging historical capital expenditures on infrastructure, inclusive of any allocations to reserves for capital purposes. For Sables-Spanish Rivers, the proposed spending of 2025 values were used to project available funding.

Only reliable and predictable sources of funding are used to benchmark funds that may be available on any given year. The funding sources include:

- Revenue from taxation allocated to reserves for capital purposes
- The Canada Community Building Fund (CCBF)
- The Ontario Community Infrastructure Fund (OCIF)

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

Annual Capital 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.

The table below outlines the total average annual capital requirements for existing assets in each asset category excluding water and sanitary as those are remaining at the same funding levels as per the proposed levels of service. Based on the proposed levels of service selected to maintain a minimum condition of "Fair" or scenario 4 for all tax funded asset categories. The funding needed for the long-term strategy of maintain assets at an average condition of "Good"

Table 4 Average Annual Capital Requirements

Asset Category	Replacement Cost	Scenario 4 - Funding Required	Scenario 3 – Funding Required
Road Network	$234,754,902	$980,858	$1,240,190
Bridges & Culverts	$20,083,428	$267,493	$430,046
Buildings	$14,813,285	$253,018	$404,029
Land Improvements	$233,540	$8,143	$12,038
Machinery & Equipment	$3,283,725	$85,637	$123,948
Vehicles	$3,091,930	$91,145	$151,850
Stormwater Network	$3,237,903	$15,400	$22,450
Waste Management	$271,669	$5,134	$11,392
Total	**$279,770,382**	**$1,706,828**	**$2,395,943**

Current Funding Levels

At existing levels, the Township is funding 74% of its annual capital requirements for all infrastructure analyzed for scenario 4 maintaining a condition of fair. This creates a total annual funding deficit of $440 thousand. For scenario 3 the Township is funding 53% of its annual capital requirements creating a $1.1 million total average funding deficit.

Closing the Gap

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

This section outlines how the Township of Sables-Spanish Rivers can close the annual funding deficits using own-source revenue streams, i.e., property taxation and without the use of additional debt for existing assets.

Full Funding Requirements

In 2025, Sables-Spanish Rivers will have an annual tax revenue of $5,155,879. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding for scenario 4 – maintaining average condition of "Fair" – at 40% would require an 8.9% tax change over time.

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

Table 5 Phasing in Annual Tax Increases for Scenario 4 Full Funding

Total % Increase Needed in Annual Property Taxation Revenues	Phase-in Period		
	5 Years	10 Years	15 Years
	1.7%	1.0%	0.6%

Funding 100% of annual capital requirements ensures that major capital events, including replacements, are completed as required. Under this scenario, projects are unlikely to be deferred to future years. This delivers the chosen proposed level of service for the community of maintaining the condition of "Fair" – 40%.

To fund scenario 3 maintaining a condition of "Good" – 60% the table below shows the annual tax increase required to reach full funding without consideration of the short-term goal of fully funding scenario 4.

Table 6 Phasing in Annual Tax Increases for Scenario 3 Full Funding

Total % Increase Needed in Annual Property Taxation Revenues	Phase-in Period		
	10 Years	15 Years	20 Years
	2.1%	1.4%	1.0%

Ten-Year Financial Plan

The Township is working with a clear long-term financial strategy aimed at reaching sustainable funding levels for its infrastructure services of maintaining an average condition of "Good" in 20-years and with that sustainable level of funding in 2045. With a 10-year target of maintaining an average condition of "Fair" reaching full funding at 10 years. The Township is still operating with an infrastructure deficit until full funding is reached. The table below shows a 10-year capital projection for each asset category with proposed funding. Integration with the budget will help to ensure alignment between the asset management program forecasts and operations.

Table 7 Ten-Year Financial Plan

Asset Category	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Road Network	$1.0m	$3.6m	$1.0m	$374k	$640k	$307k	$536k	$654k	$498k	$1.3m
Bridges & Culverts	-	-	-	-	-	-	$228k	$1.2m	$5.2m	-
Buildings	-	$134k	$483k	$810k	$634k	$42k	$345k	$806k	-	$182k
Land Improvements	-	-	-	-	-	-	-	$22k	-	$22k
Machinery & Equipment	-	-	$399k	-	-	$190k	-	$105k	$103k	$90k
Vehicles	-	$150k	$97k	$133k	$135k	-	$52k	$142k	$37k	$219k
Stormwater Network	-	-	-	-	-	-	-	-	-	-
Waste Management	-	-	-	-	-	-	-	-	-	$1k
Total	**$1.0m**	**$3.9m**	**$2.0m**	**$1.3m**	**$1.4m**	**$539k**	**$1.2m**	**$2.9m**	**$5.9m**	**$1.8m**
Proposed Funding	$1.27m	$1.32m	$1.37m	$1.43m	$1.49m	$1.55m	$1.61m	$1.67m	$1.74m	$1.81m

The current 10-year program has a funding requirement of $21.9 million over the ten years, while the proposed available funding level will be $15.3 million. The annual funding deficit at the end of the 10-years will be 100% funded. There will still be a need to prioritize projects and defer until the long-term strategy and sustainable funding levels are met, unless the use of debt funding or one-time grants are received.

This proposed level of service is a more achievable level of funding for the community while still ensuring the condition of the infrastructure is Fair in the short term and moving towards Good in the long-term.

Recommendations

Financial Strategies

Review feasibility of adopting a full-funding scenario that achieves 100% of average annual requirements for the asset categories analyzed. This involves:

- implementing a 1.0% annual tax increase over a 20-year phase-in period and allocating the full increase in revenue towards capital funding
- continued allocation of OCIF and CCBF funding as previously outlined
- using risk frameworks and staff judgement to prioritize projects, particularly to aid in elimination of existing infrastructure backlogs

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

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

Risk and Levels of Service

1. Risk models and matrices can play an important role in identifying high-value assets, and developing an action plan which may include repair, rehabilitation, replacement, or further evaluation through updated condition assessments. As a result, project selection and the development of multi-year capital plans can become more strategic and objective.
2. The annual review requirement in O.reg. 588/17 the Township must address their progress in implementing its asset management plan, any factors impeding the ability to implement its asset management plan as well as a strategy to address any of the identified factors.

Appendix A: Road Network

State of the Infrastructure

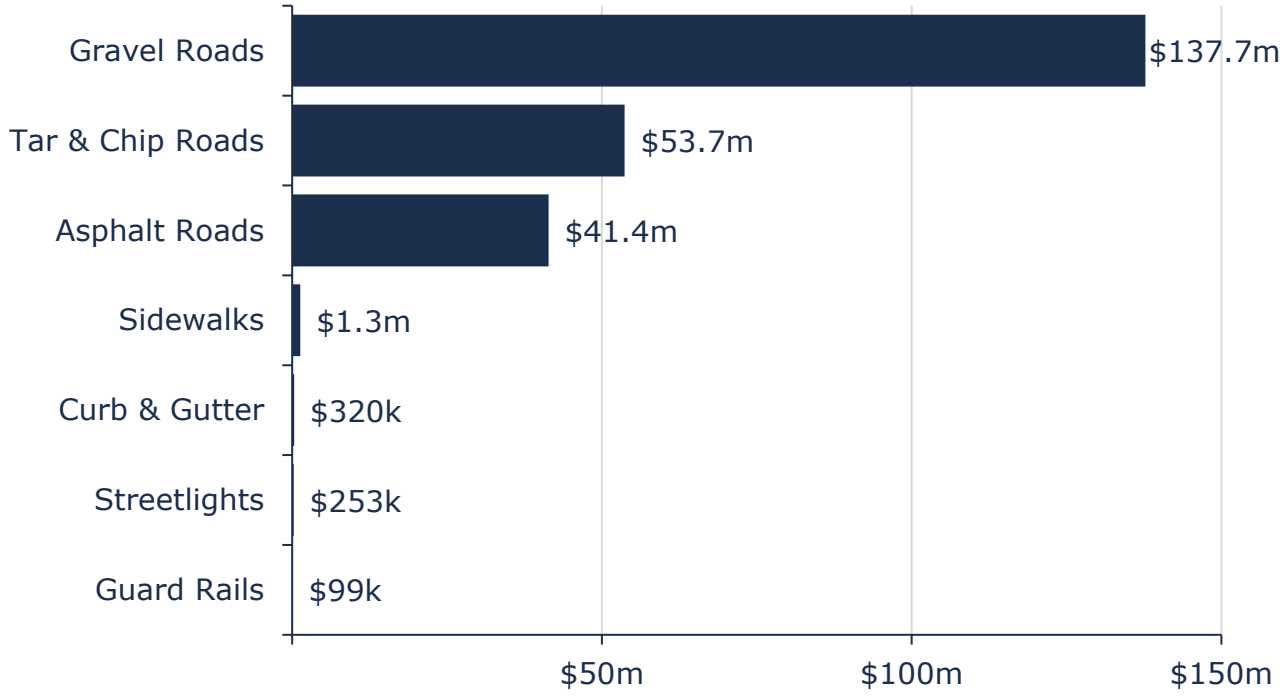
The road network is a critical component of the provision of safe and efficient transportation services and represents the highest value asset category in the Township's asset portfolio. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including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

Inventory & Valuation

The figure below displays the replacement cost of each asset segment in the Township's Road inventory.

Figure 11 Road Network Replacement Value

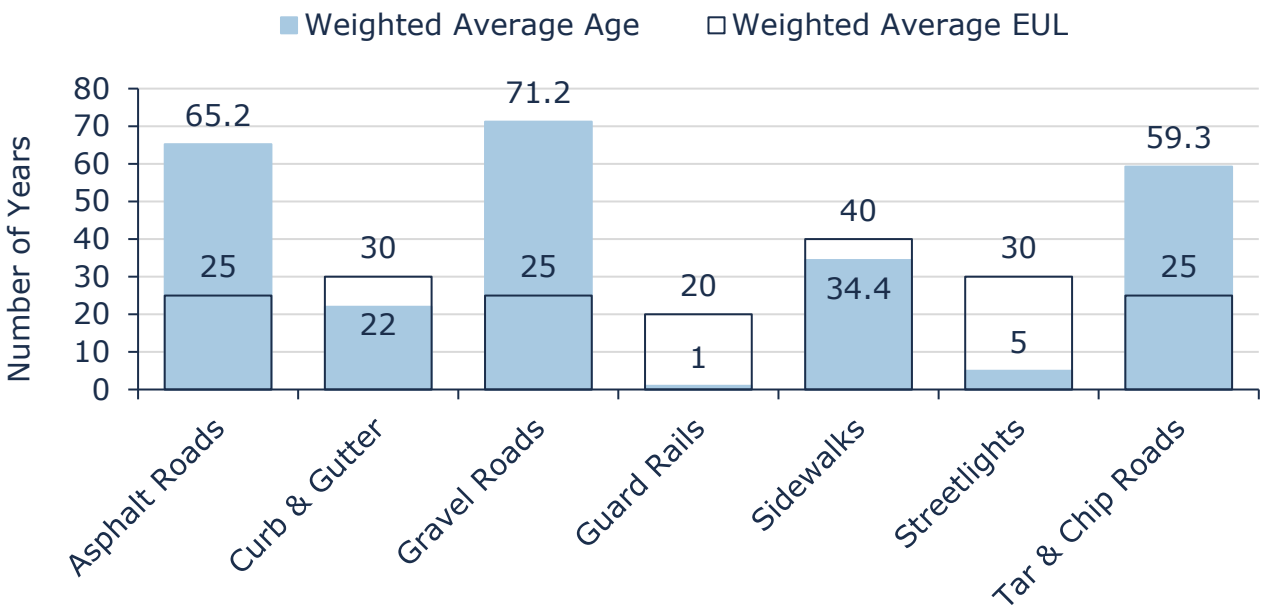


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

Asset Condition & Age

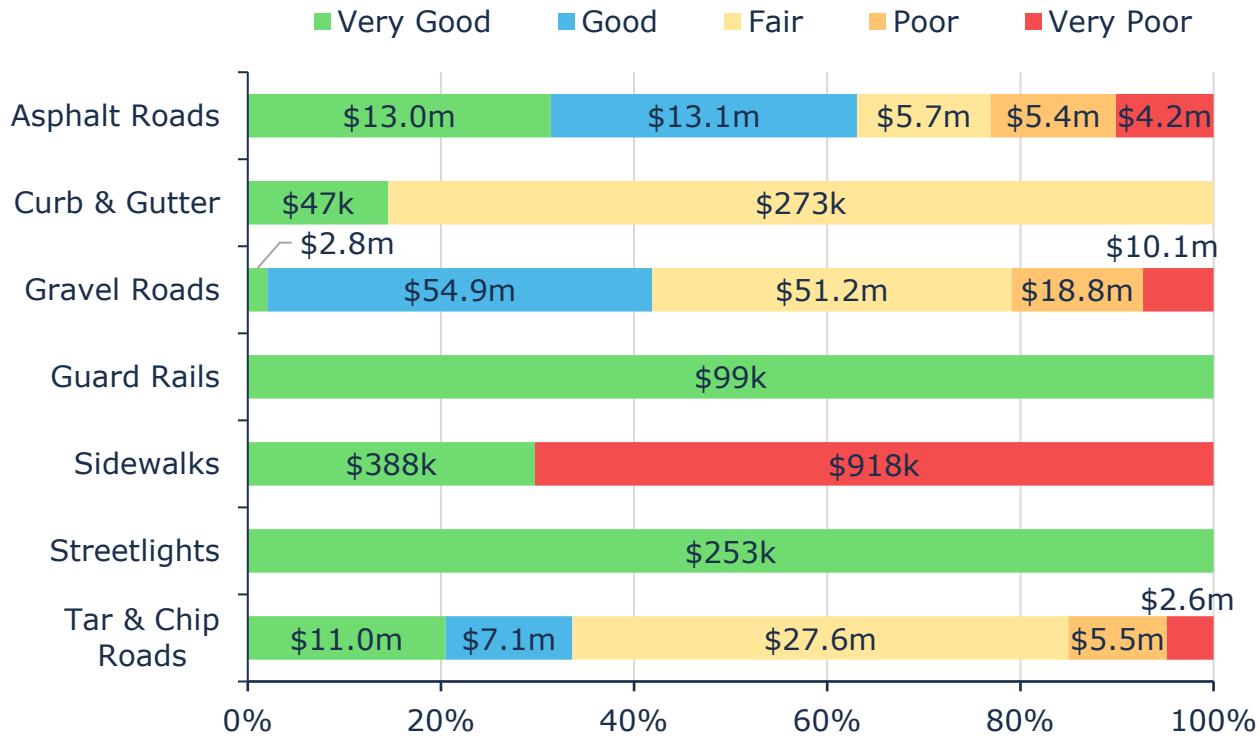
The graph below identifies the average age, and the estimated useful life for each asset segment. It is all weighted by replacement cost.

Figure 12 Road Network Average Age vs Average EUL



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

Figure 13 Road Network Condition Breakdown



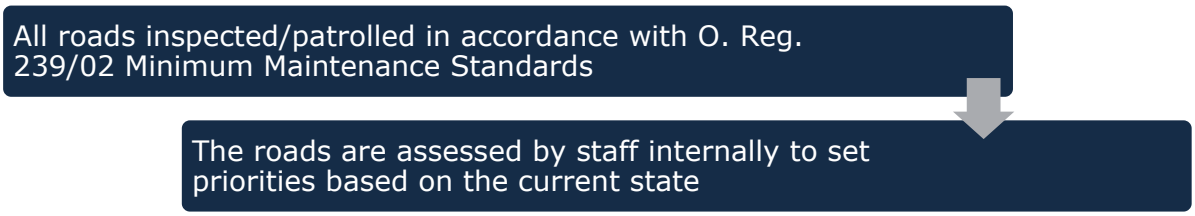
To ensure that Sables-Spanish Rivers' roads continue to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management

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.

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 described below.



The condition scale for roads utilized is from 0 to 100 from Very Poor to Very Good.

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.

Table 8 Asphalt Roads Lifecycle Events

Asphalt Roads		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing 1	Maintenance	90 to 95 condition
Crack Sealing 2	Maintenance	85 to 90 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

Figure 14 Asphalt Roads Lifecycle Model

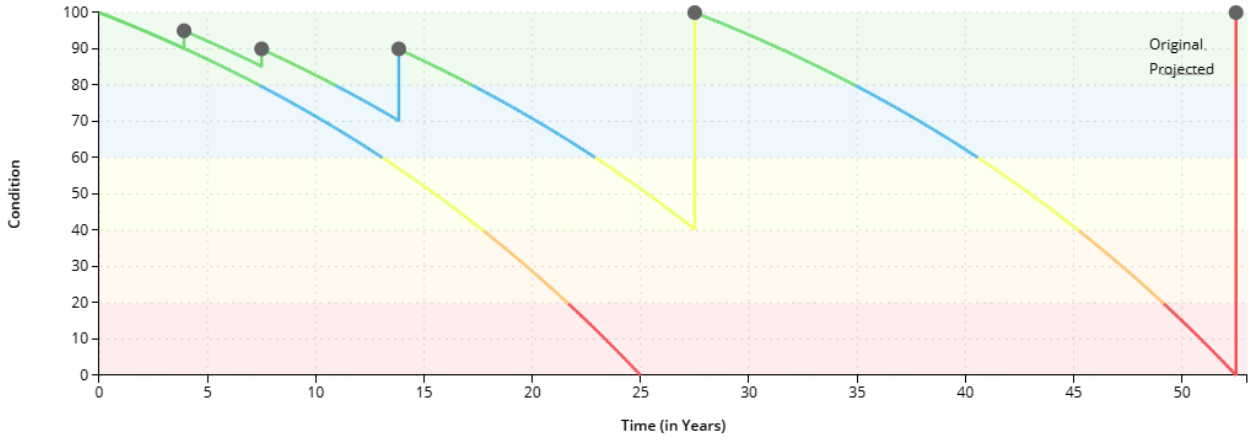
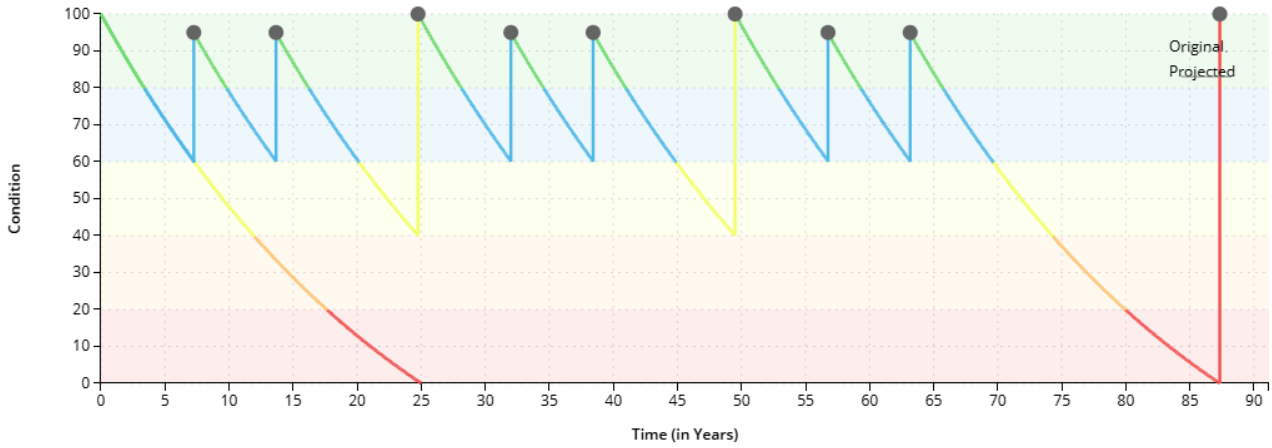


Table 9 Tar & Chip Roads Lifecycle Events

Tar & Chip Roads		
Event Name	**Event Class**	**Event Trigger**
Single Surface Treatment (SST)	Rehabilitation	60 condition
Double Surface Treatment (DST)	Rehabilitation	40 condition
Full Reconstruction	Replacement	0 to 20 condition

Figure 15 Tar & Chip Roads Lifecycle Model



Risk & Criticality

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 16 Road Network Risk Matrix

1 - 4 **Very Low** $4,310,677 (2%)	5 - 7 **Low** $9,773,244 (4%)	8 - 9 **Moderate** $23,060,017 (10%)	10 - 14 **High** $82,714,224 (35%)	15 - 25 **Very High** $114,896,740 (49%)

This is a high-level model developed by municipal 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

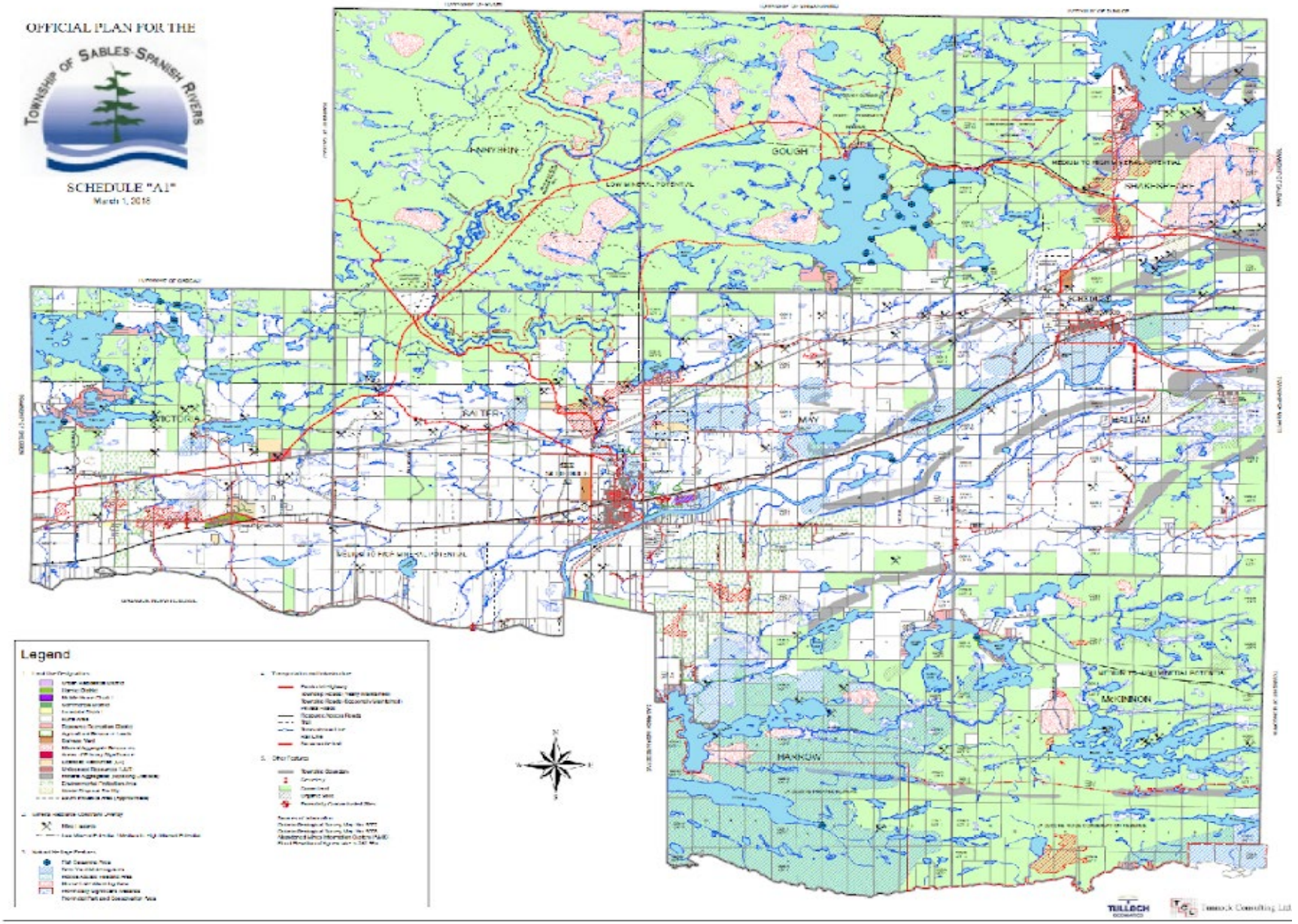
Current Levels of Service

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

Table 10 Road Network Current Level of Service

Community LOS		Service Attribute	Technical LOS	
Description, which may include maps, of the road network in the township and its level of connectivity	See Figure 17 Map of Roads	Scope	Replacement Cost	$234,754,902
			Quantity (km of roads)	276.379
			Quantity (number of streetlights)	333
			Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km2)	0.003 (Imperial Street only)
			Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km2)	0
			Lane-km of local roads (MMS classes 5 and 6) per land area (km/km2)	0.4
Description or images that illustrate the different levels of road class pavement conditions	The Township staff provide surface conditions with a rating as follows: 0 – 20 Very Poor 20 – 40 Poor 40 – 60 Fair 60 – 80 Good 80 – 100 Very Good	Quality/ Reliability	Average pavement condition index for paved roads in the Township	Good (60%)
			Average surface condition for unpaved roads in the township (e.g. excellent, good, fair, poor)	Fair
			Average Condition	Fair (53%)
			Average Risk	High
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	84%
			Annual reinvestment	$877,552
			Capital reinvestment rate	0.37%

Figure 17 Map of Roads


OFFICIAL PLAN FOR THE
TOWNSHIP OF SABLES-SPANISH RIVERS
SCHEDULE "A1"
March 1, 2016
ANNIN
GOUGH
VICTORIA
WALTER
MAY
HALLAM
McKINNON
HANNOW
Legend

Proposed Levels of Service

The road network has been in field inspected by staff in 2024 as well as the assets have been better aligned with the road segments intersection to intersection.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Good - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the Road Network.

Table 11 Scenario Results Summary

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$234,754,902	Good (71%)	$2,268,000
Scenario 2 - Current Capital Investment Rate	$234,754,902	Fair (52%)	$877,000
Scenario 3 - Good Condition	$234,754,902	Good (60%)	$1,240,000
Scenario 4 - Fair Condition	$234,754,902	Good (40%)	$981,000

Gravel roads are not included in this forecast as they are managed through the operations and considered to never need replacement due to the preventative maintenance activities performed.

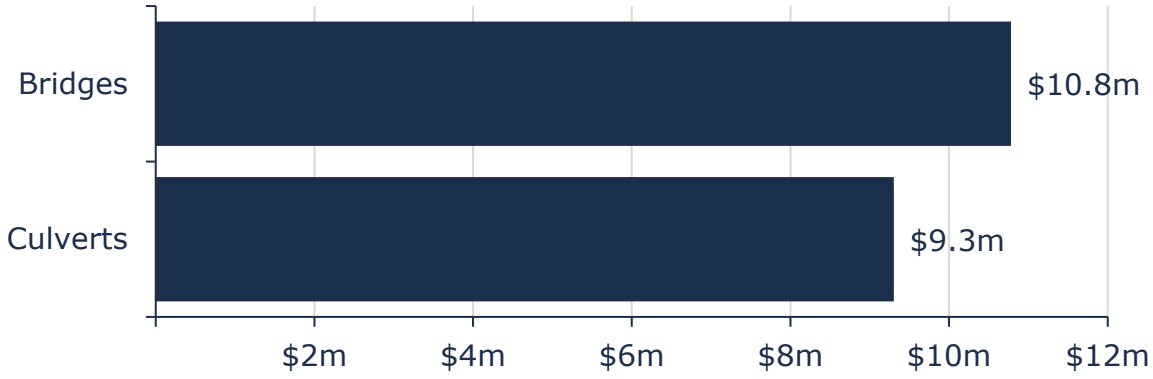
Appendix B: Bridges & Culverts

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.

Inventory & Valuation

The figure below displays the replacement cost of each asset segment in the Township's bridges and culverts inventory.

Figure 18 B&C Replacement Cost

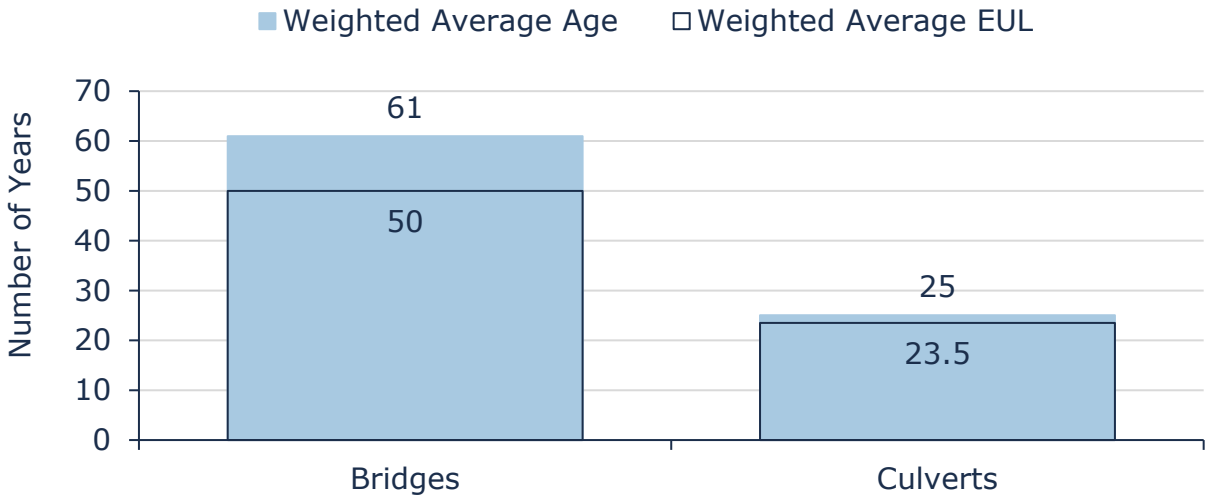


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed.

Asset Condition & Age

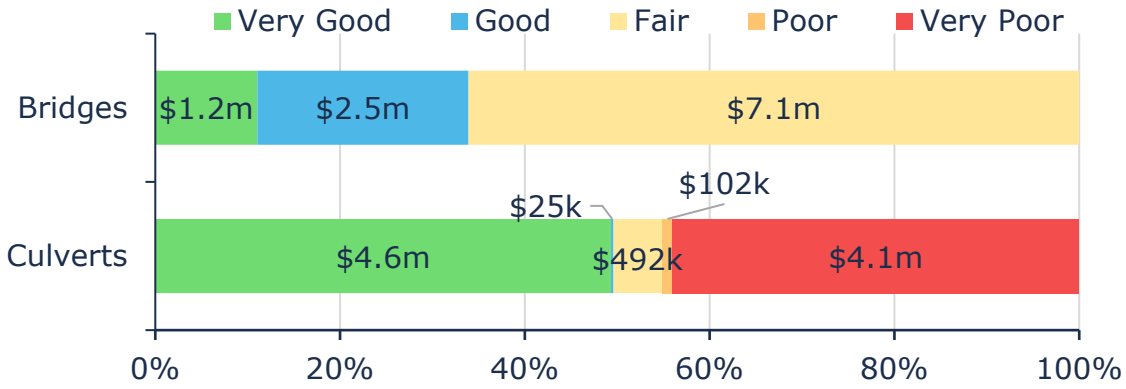
The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 19 B&C Average Age vs Average EUL



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

Figure 20 B&C Condition Breakdown



To ensure that the Township's bridges and culverts continue to provide an acceptable level of service, the staff 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.

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. Sables-Spanish Rivers' current approach is to assess all bridges and culverts with a span greater than or equal to 3 meters every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM).

The condition scale for bridges and culverts utilized is from 0 to 100 from Very Poor to Very Good. See the following images as examples of bridges in good condition as well as culverts in Fair condition.

Figure 21 Bridges and culverts Condition Images

Images of a 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 guilderail and deck condition. Note sand/gravel accumulation.

Images of a 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.

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. Figure 22 outlines Sables-Spanish Rivers' current lifecycle management strategy.

Figure 22 B&C Current Lifecycle 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 2024 by Kresin Engineering Corporation

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 available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

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

Figure 23 B&C Risk Matrix

1 - 4 Very Low $2,967,751 (15%)	5 - 7 Low $2,644,502 (13%)	8 - 9 Moderate - (0%)	10 - 14 High $1,969,329 (10%)	15 - 25 Very High $12,501,846 (62%)

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

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

Table 12 B&C Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
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.	Scope	Replacement Cost	$20,083,428
			Quantity	26
Description or images of the condition of bridges and culverts and how this would affect the use of the bridges and culverts	See Figure 21 Bridges and culverts Condition Images	Quality/Reliability	% of bridges in the Township with loading or dimensional restrictions	0
			Average bridge condition index value for bridges	64
			Average bridge condition index value for structural culverts	51
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	72%
			Annual reinvestment	$169,059
			Capital reinvestment rate	0.84%

Proposed Levels of Service

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the municipal bridges and culverts.

Table 13 Bridges & Culverts Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$20,083,428	Very Good (85%)	$648,305
Scenario 2 - Current Capital Investment Rate	$20,083,428	Poor (17%)	$169,059
Scenario 3 - Good Condition	$20,083,428	Good (60%)	$430,046
Scenario 4 - Fair Condition	$20,083,428	Fair (40%)	$267,493

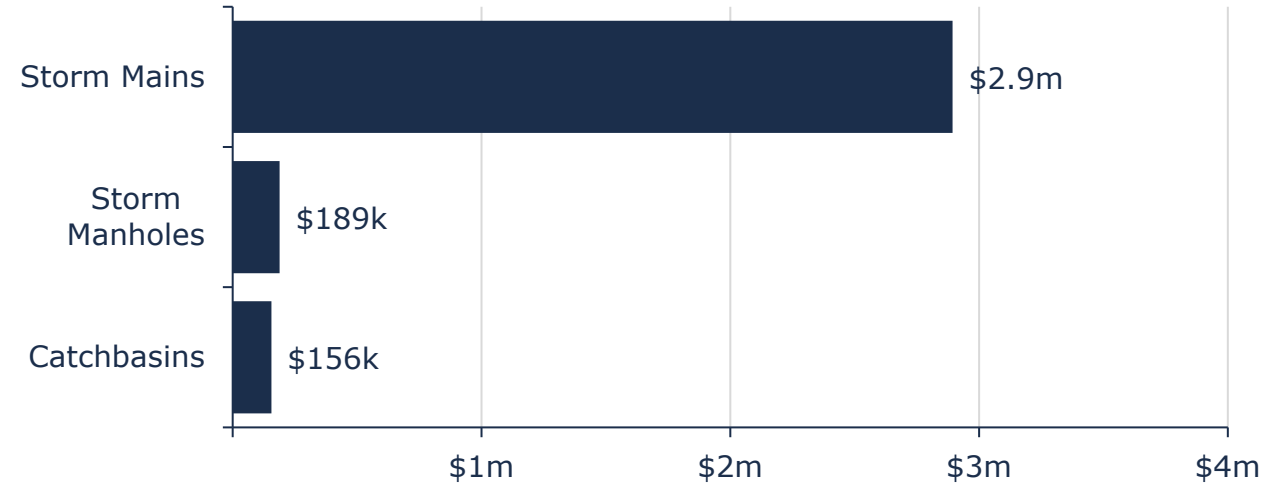
Appendix C: Stormwater Network

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

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Sables-Spanish Rivers' stormwater network inventory.

Figure 24 Stormwater Network Replacement Cost

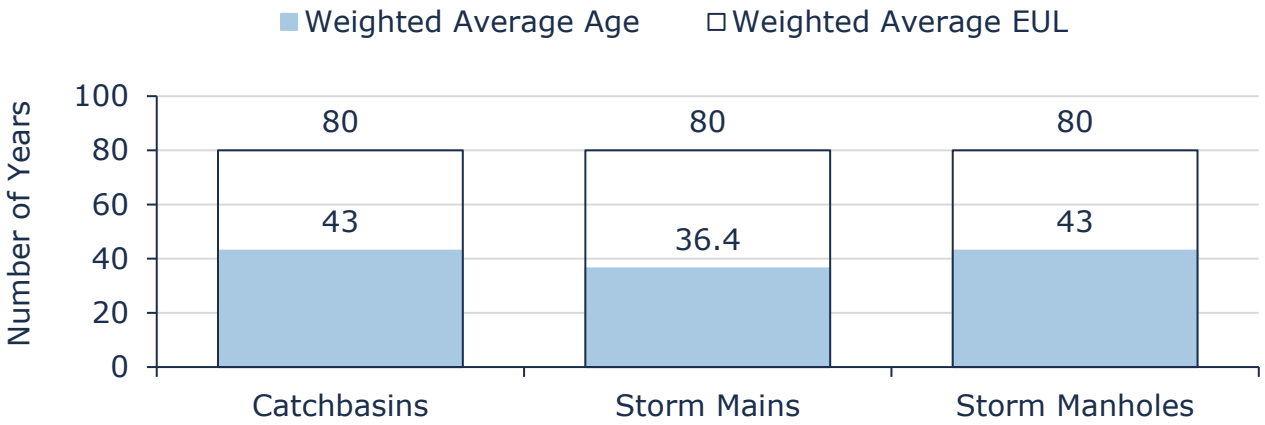


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

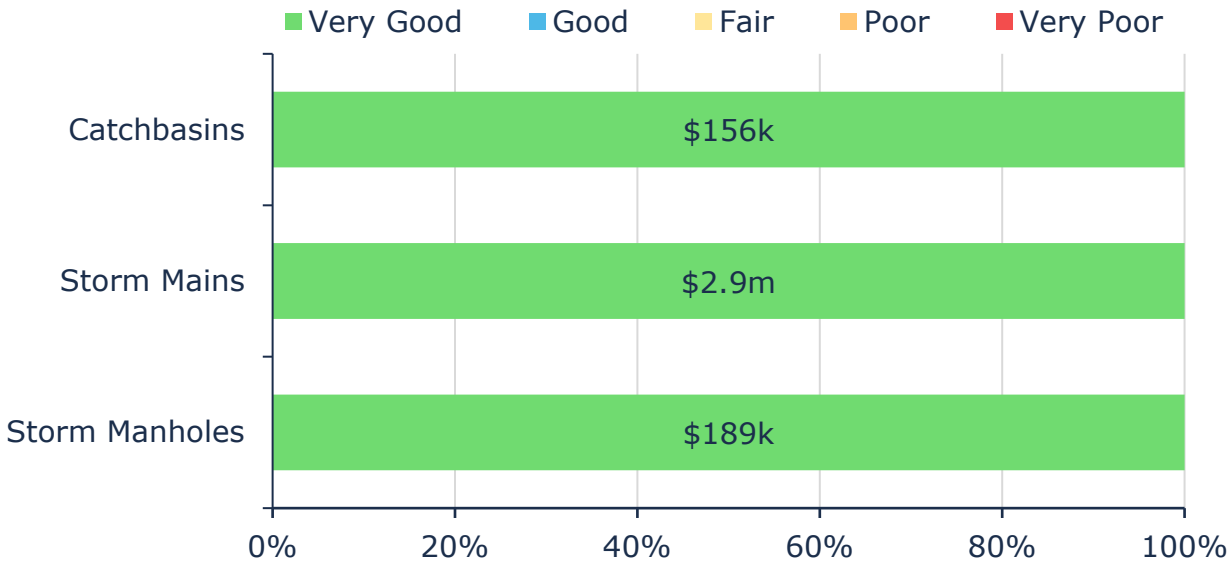
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 25 Stormwater Network Average Age vs Average EUL



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

Figure 26 Stormwater Network Condition Breakdown



To ensure that the municipal stormwater network 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 assets.

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.

Current Approach to Condition Assessment

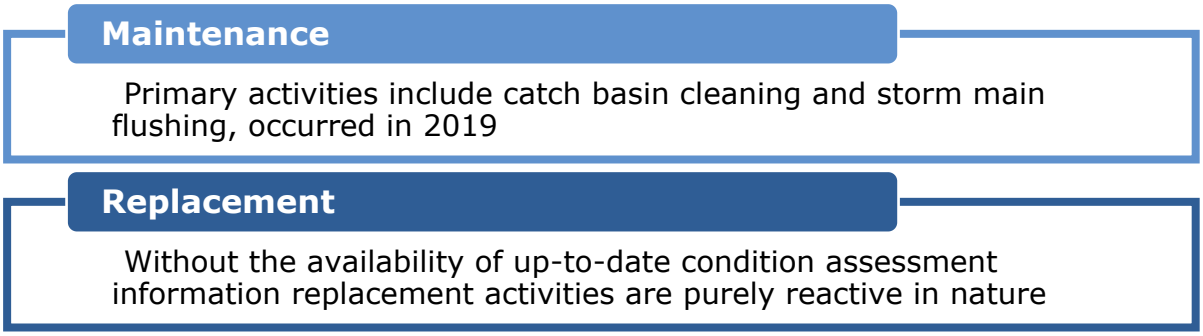
Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the Township's current approach:

- 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

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.

Figure 27 Stormwater Network Current Lifecycle Strategy



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 available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 28 Stormwater Network Risk Matrix

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$2,913,083	$324,820	-	-	-
(90%)	(10%)	(0%)	(0%)	(0%)

This is a high-level model that has been developed based on information currently available 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

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

Table 14 Stormwater Network Current Levels of Service

Community LOS			Service Attribute	Current Technical LOS
Description, which may include a map of the user groups or areas of the township that are protected from flooding, including the extent of protection provided by the municipal stormwater system	See Figure 28 Map of Stormwater Network	Scope	Replacement Cost	$3,237,903
			Quantity (Number of assets)	51
			Length of main (Kilometers)	2.7 KM
			% Properties in township resilient to a 100-year storm	TBD
			% The municipal stormwater management system is resilient to a 5-year storm	TBD
Description of the condition of the storm network	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Very Good (88%)
			% Condition > Fair	100%
			% Condition poor and very poor	0%
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	0%
			Annual reinvestment	$29,359
			Capital reinvestment rate	0.40%

Figure 29 Map of Stormwater Network

Proposed Levels of Service

The scenarios that were used to analyse Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the Stormwater Network.

Table 15 Stormwater Network Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$3,237,903	Good (78%)	$40,474
Scenario 2 - Current Capital Investment Rate	$3,237,903	Good (65%)	$29,359
Scenario 3 - Good Condition	$3,237,903	Good (60%)	$22,450
Scenario 4 - Fair Condition	$3,237,903	Fair (40%)	$15,400

Appendix D: Buildings

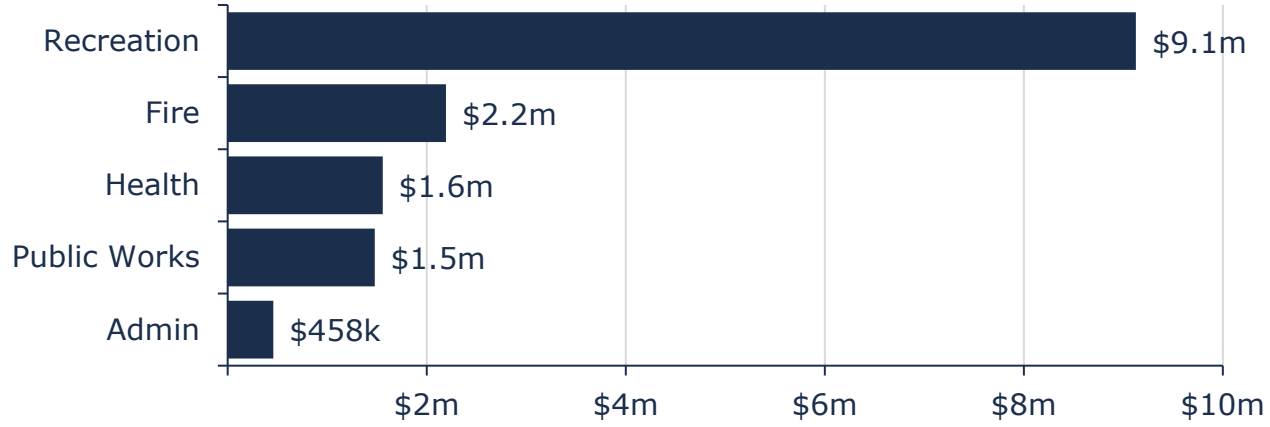
The Township of Sables-Spanish Rivers owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- Administrative offices
- Fire stations
- A medical clinic
- Public works garages and storage sheds
- An arena, rinks, and community centres

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Sables-Spanish Rivers' buildings inventory. As the Township has not had a complete componentization of their buildings their inventory tracks buildings as a main asset with some small as replaced componentization.

Figure 30 Buildings Replacement Cost

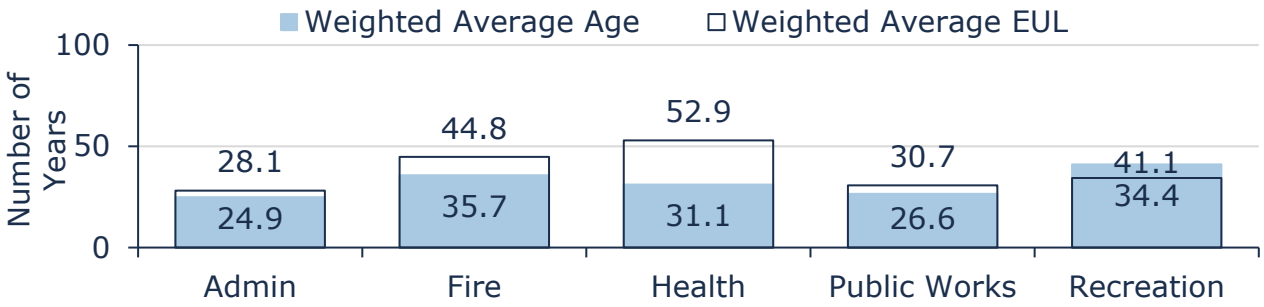


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

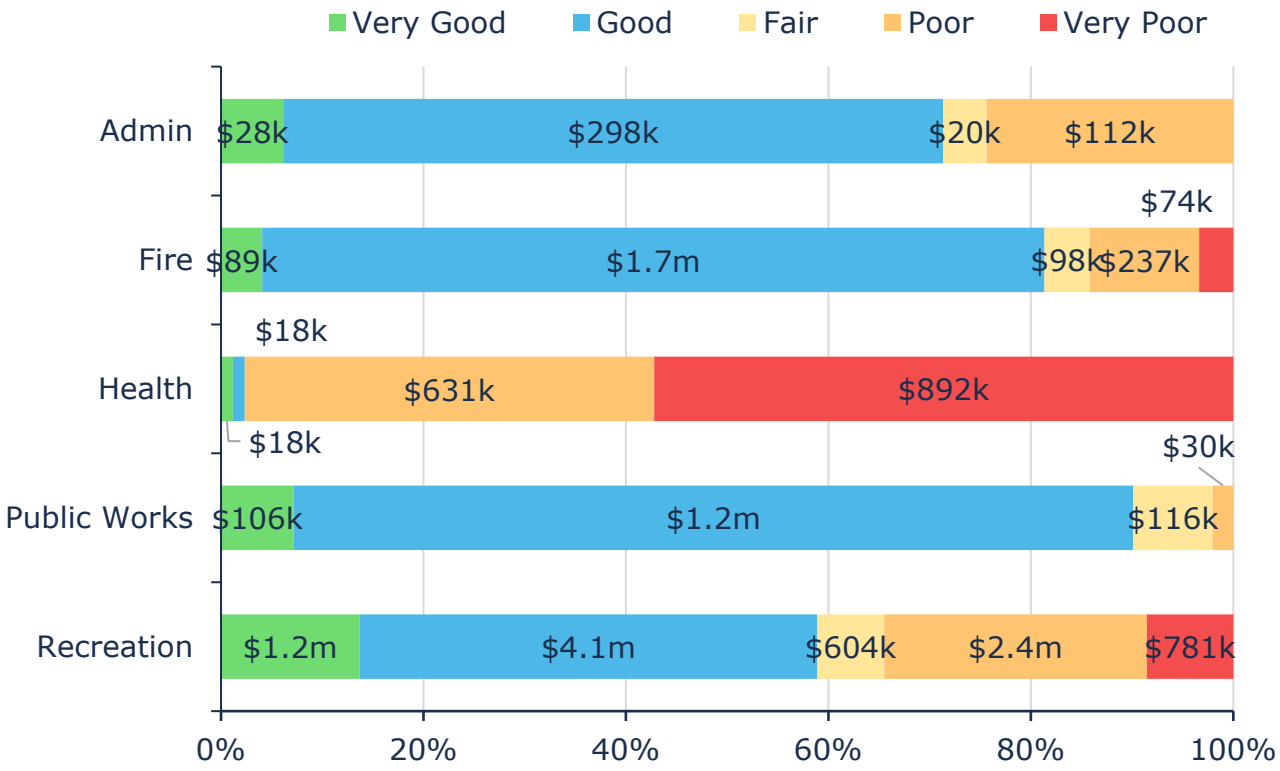
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 31 Buildings Average Age vs Average EUL



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

Figure 32 Buildings Condition Breakdown



To ensure that the municipal 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.

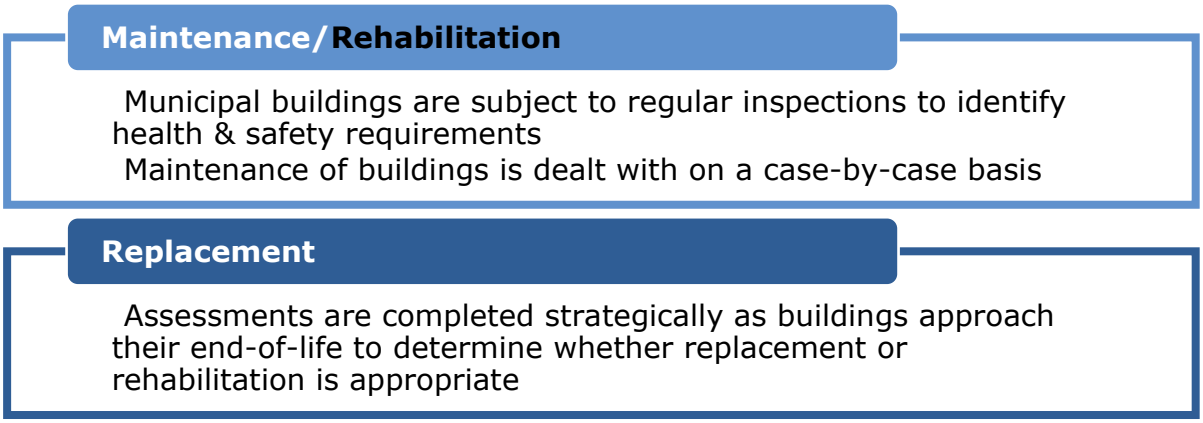
Current Approach to Condition Assessment

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. Buildings are repaired as required based on deficiencies identified by outside experts, staff, or residents.

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.

Figure 33 Buildings Current Lifecycle Strategy



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 available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 34 Buildings Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$1,156,995	$1,779,576	$1,654,064	$4,547,396	$5,675,253
(8%)	(12%)	(11%)	(31%)	(38%)

This is a high-level model that has been developed based on information currently available 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

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

Community LOS		Service Attribute	Current Technical LOS	
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 centers	Scope	Replacement Cost	$14,813,285
			Quantity(assets)	246
Description of the condition of municipal buildings	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Fair (53%)
			% Condition > Fair	65%
			% Condition poor and very poor	35%
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	69%
			Annual reinvestment	$134,537
			Capital reinvestment rate	0.91%

Table 16 Buildings Current Levels of Service

Proposed Levels of Service

The scenarios that were used to analyse Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the municipal Buildings.

Table 17 Buildings Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$14,813,285	Good (78%)	$512,059
Scenario 2 - Current Capital Investment Rate	$14,813,285	Poor (20%)	$134,537
Scenario 3 - Good Condition	$14,813,285	Good (60%)	$404,029
Scenario 4 – Fair Condition	$14,813,285	Fair (40%)	$253,018

Appendix E: Waste Management

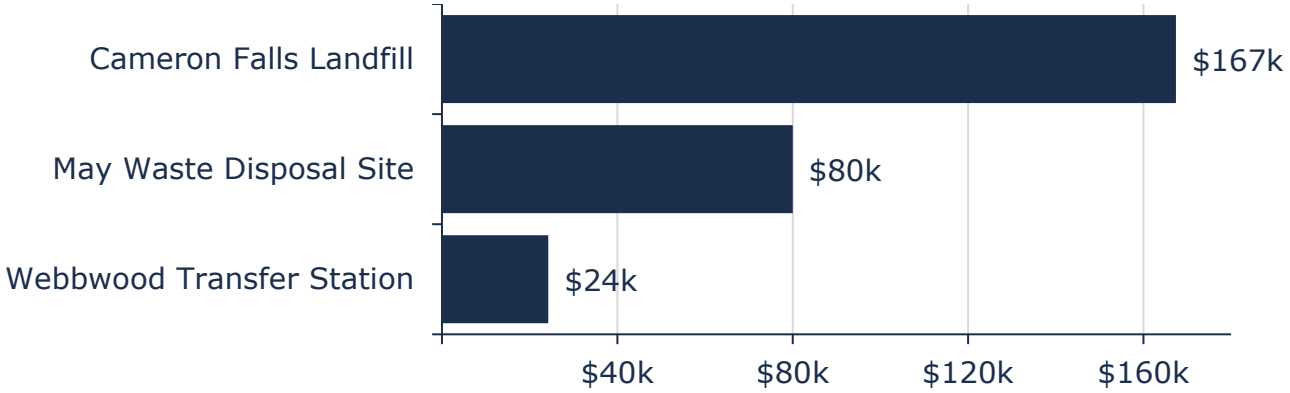
The Township of Sables-Spanish Rivers owns and maintains/monitors four landfills that provide key services to the community. These include:

- Tennyson Landfill
- May Septic Disposal Site
- Webbwood Landfill (currently closed) / Transfer Station
- Chutes Landfill (currently closed)

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Sables-Spanish Rivers' Waste Management inventory.

Figure 35 Waste Management Replacement Cost

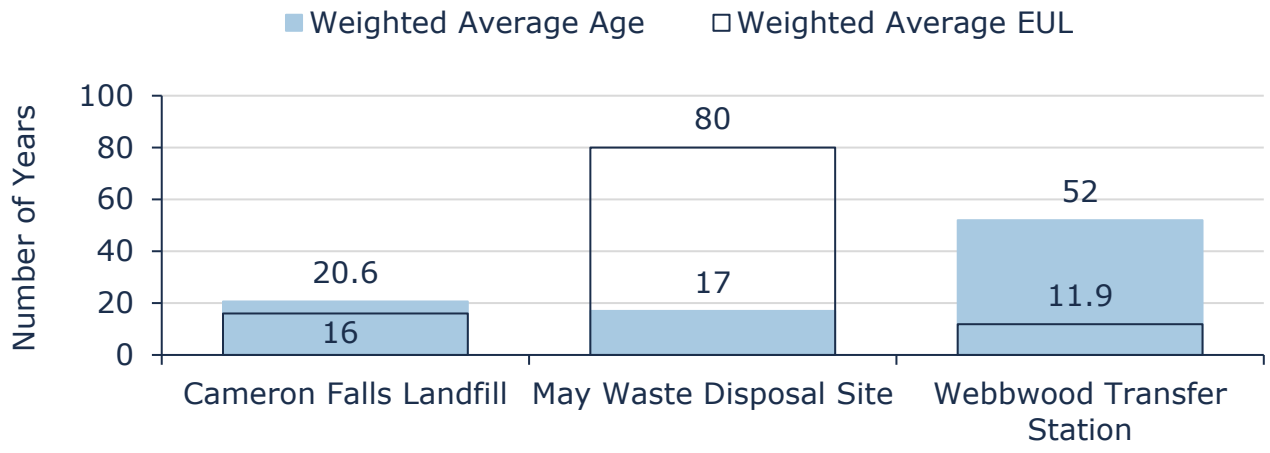


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

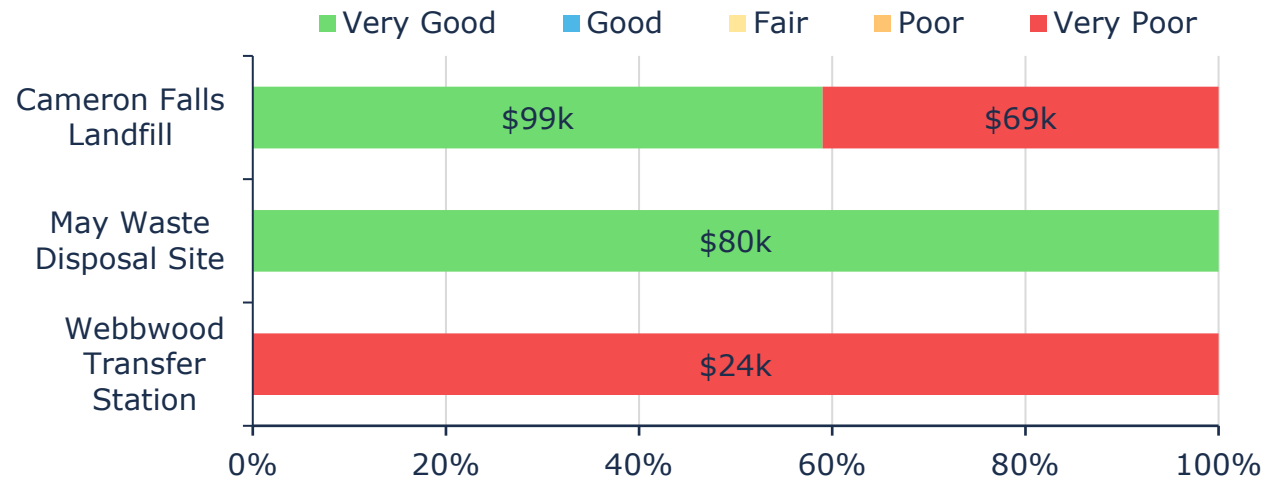
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 36 Waste Management Average Age vs Average EUL



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

Figure 37 Waste Management Condition Breakdown



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 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.

Current Approach to Condition Assessment

Accurate and reliable condition 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.

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.

Figure 38 Waste Management Current Lifecycle Strategy

Maintenance, Rehabilitation & Replacement
Assessments are completed as required by legislation and the engineers' recommendations determine the activities.

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 available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 39 Waste Management Risk Matrix

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$178,776 (66%)	$5,934 (2%)	- (0%)	$19,752 (7%)	$67,207 (25%)

This is a high-level model that has been developed based on information currently available 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

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

Table 18 Waste Management Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
A description of the facilities provided within waste management services.	The facilities that are provided by waste management services are: • Tennyson Landfill • Webbwood Landfill (currently closing) / Transfer station • May Septic Disposal Site	Scope	Replacement Cost	$271,669
			Quantity (Number of assets)	7
Description of the condition of waste facilities	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Fair (59%)
			% Condition > Fair	66%
			% Condition poor and very poor	34%
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performanc e	% Risk that is High and Very High	32%
			Annual reinvestment	$2,485
			Capital reinvestment rate	0.91%

Proposed Levels of Service

The scenarios that were used to analyse Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Good - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the Waste Management facilities.

Table 19 Waste Management Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$3,091,930	Very Good (90%)	$14,931
Scenario 2 - Current Capital Investment Rate	$3,091,930	Fair (46%)	$2,485
Scenario 3 - Good Condition	$3,091,930	Good (60%)	$11,392
Scenario 4 - Fair Condition	$3,091,930	Fair (40%)	$5,134

Appendix F: Vehicles

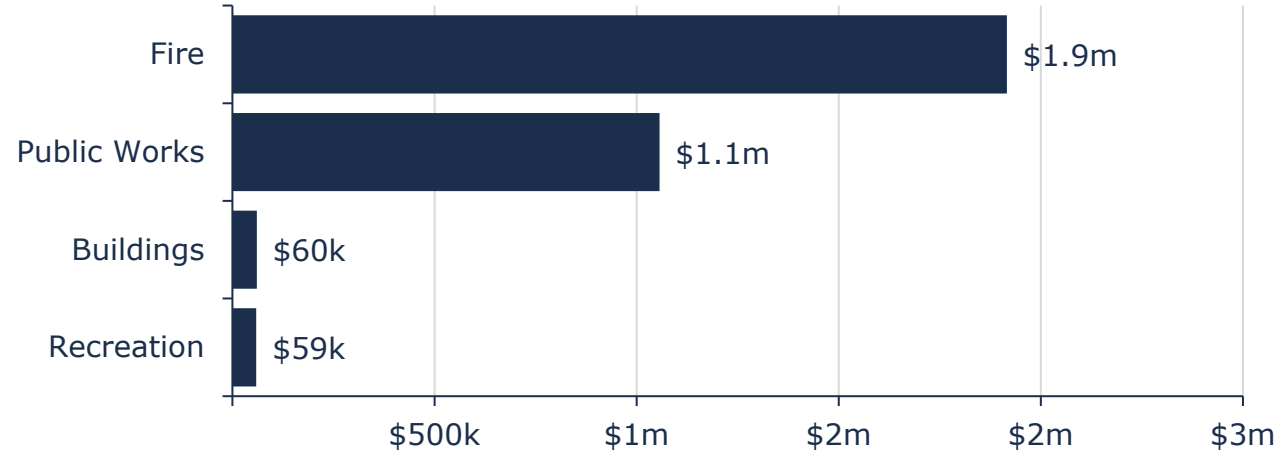
Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- Tandem axle trucks for winter control activities
- Fire rescue vehicles to provide emergency services
- Pick-up trucks to support the maintenance of all departments

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in the vehicle inventory.

Figure 40 Vehicle Replacement Costs

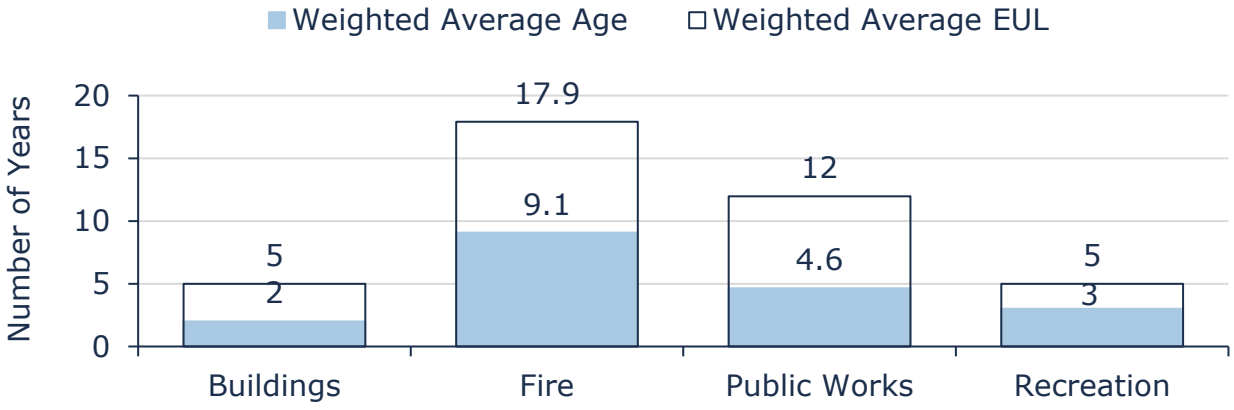


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

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.

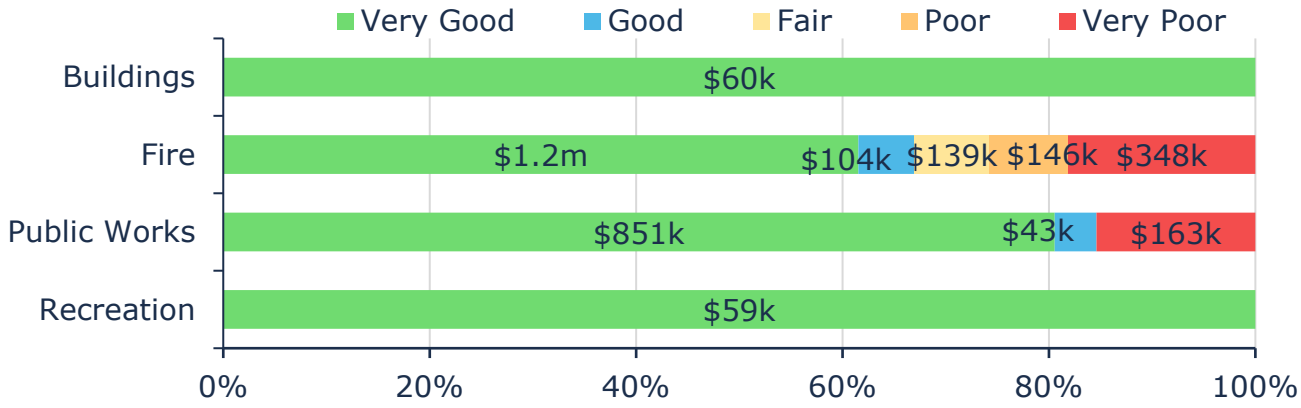
Figure 41 Vehicles Average Age vs Average EUL



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.

Figure 42 Vehicles Condition Breakdown



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.

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.

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.

Figure 43 Vehicles Current Lifecycle 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

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 available inventory data. See Appendix L: : Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

This is a high-level model that has been developed based on information currently available and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

Figure 44 Vehicles Risk Matrix

1 - 4 **Very Low** $265,397 (9%)	5 - 7 **Low** $1,927,056 (62%)	8 - 9 **Moderate** - (0%)	10 - 14 **High** $104,237 (3%)	15 - 25 **Very High** $795,240 (26%)

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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

The following tables identify the Township's current level of service for the township owned vehicles. 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.

Table 20 Vehicles Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
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	Scope	Replacement Cost	$3,091,930
			Quantity (assets)	20
Description of the condition of vehicles	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Good (75%)
			% Condition > Fair	79%
			% Condition poor and very poor	21%
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	29%
			Annual reinvestment	$23,729
			Capital reinvestment rate	0.77%

Proposed Levels of Service

The scenarios that were used to analyse Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the equipment and furniture assets.

Table 21 Vehicles Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$3,091,930	Very Good (90%)	$245,780
Scenario 2 - Current Capital Investment Rate	$3,091,930	Very Poor (10%)	$23,729
Scenario 3 - Good Condition	$3,091,930	Good (60%)	$151,850
Scenario 4 - Fair Condition	$3,091,930	Fair (40%)	$91,145

Appendix G: Machinery & Equipment

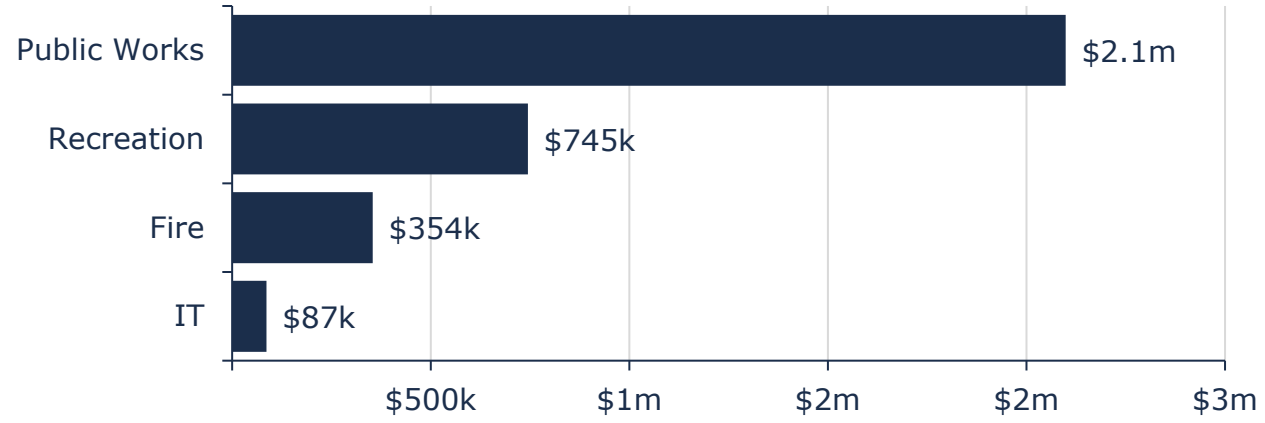
To maintain the quality stewardship of Sable-Spanish River's infrastructure and support the delivery of services, Township staff own and employ various types of machinery and equipment. This includes:

- 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

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in the Sables-Spanish Rivers' machinery & equipment inventory.

Figure 45 Machinery & Equipment Replacement Costs

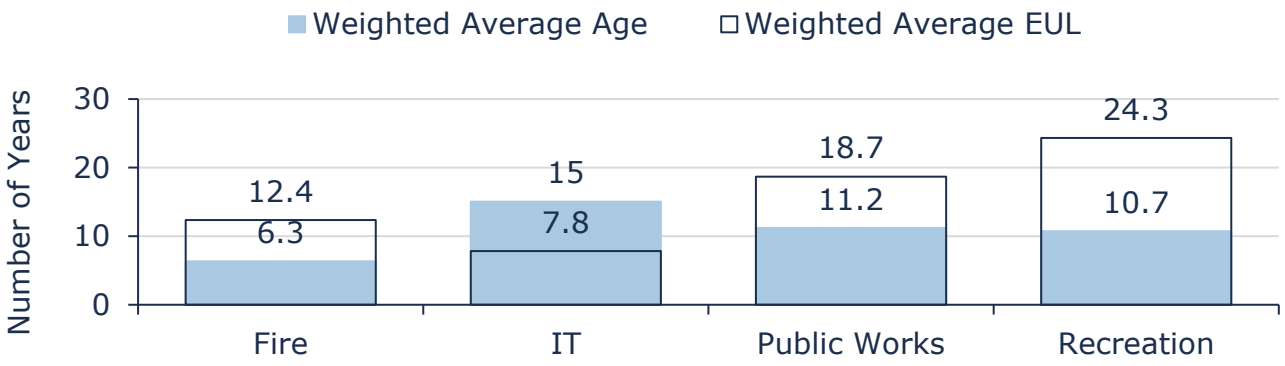


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent capital requirements.

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.

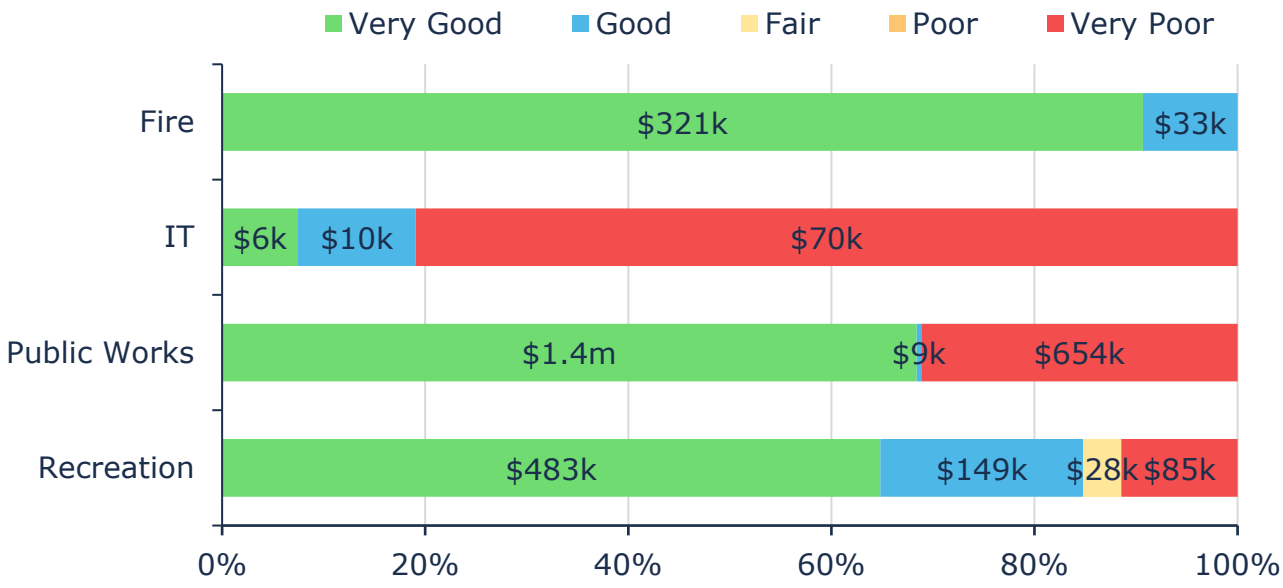
Figure 46 Machinery & Equipment Average Age vs Average EUL



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.

Figure 47 Machinery & Equipment Condition Breakdown



To ensure that the Township's machinery & equipment continues to provide an acceptable level of service, Sables-Spanish Rivers 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.

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.

Lifecycle Management Strategy

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

Figure 48 Machinery & Equipment Current Lifecycle 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

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 available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

This is a high-level model that has been developed based on information currently available and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

Figure 49 Machinery & Equipment Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$696,601	$1,670,668	$83,109	$130,066	$703,281
(21%)	(51%)	(3%)	(4%)	(21%)

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

The following tables identify the Township's current level of service for the municipal owned Machinery & Equipment assets. 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.

Table 22 Machinery & Equipment Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
A description of the 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	Scope	Replacement Cost	$3,283,725
			Quantity (assets)	416
Description of the condition of vehicles	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Good (69%)
			% Condition > Fair	75%
			% Condition poor and very poor	25%
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	25%
			Annual reinvestment	$27,771
			Capital reinvestment rate	0.85%

Proposed Levels of Service

The scenarios that were used to analyse Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the machinery and equipment assets.

Table 23 Machinery & Equipment Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$3,283,725	Very Good (81%)	$193,105
Scenario 2 - Current Capital Investment Rate	$3,283,725	Very Poor (11%)	$27,771
Scenario 3 - Good Condition	$3,283,725	Good (60%)	$123,948
Scenario 4 - Fair Condition	$3,283,725	Fair (40%)	$85,637

Appendix H: Land Improvements

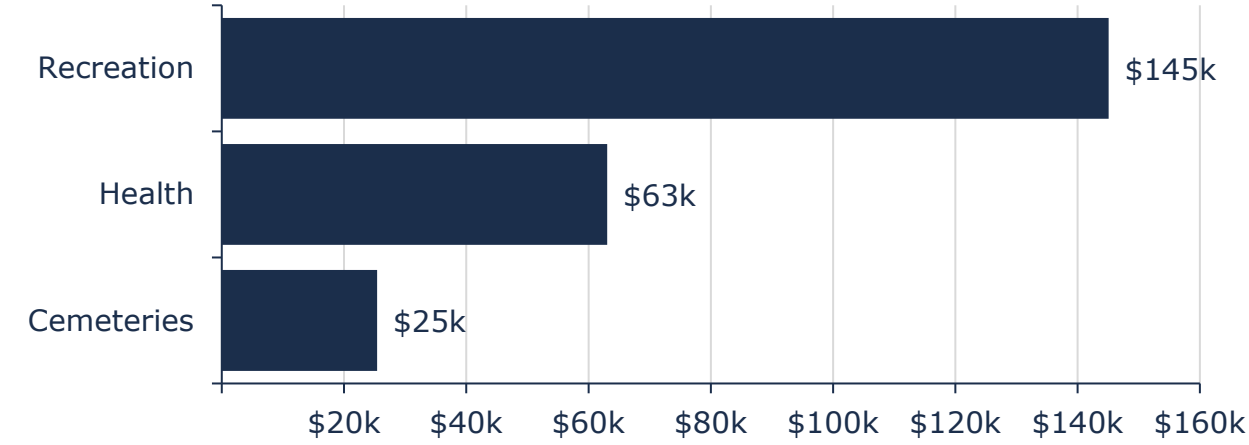
The Township owns a small number of assets that are considered land improvements. This category includes:

- Fencing
- Parking lots and guard rails
- Outdoor rink

Asset Inventory & Valuation

The graph below displays the replacement cost of each asset segment in the Township's land improvement inventory.

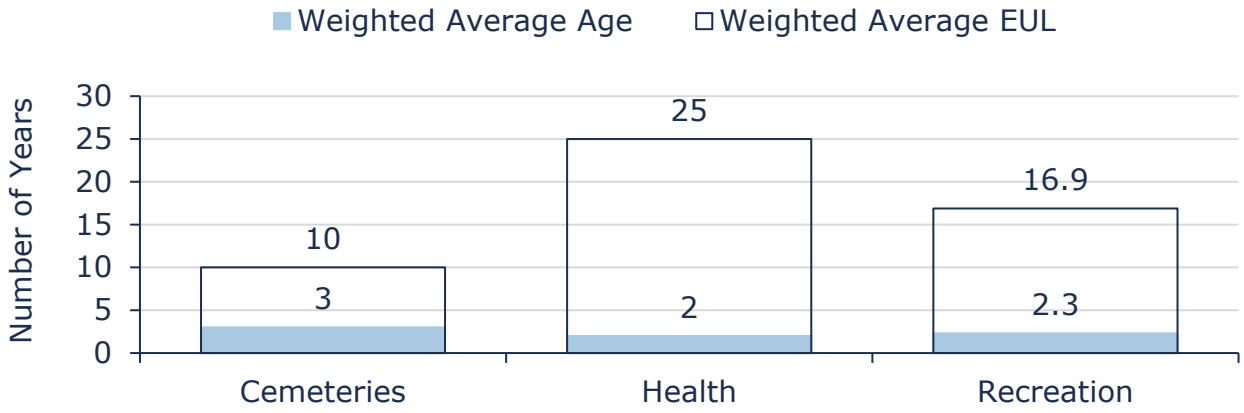
Figure 50 Land Improvements Replacement Cost



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.

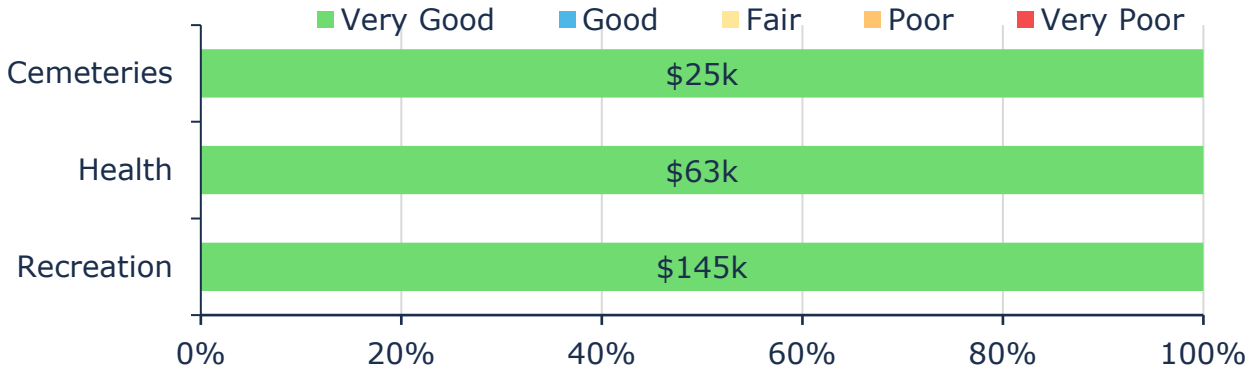
Figure 51 Land Improvements Average Age vs Average EUL



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.

Figure 52 Land Improvement Condition Breakdown



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

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.

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 figures outline Sables-Spanish Rivers' current lifecycle management strategy.

Figure 53 Land Improvements Current Lifecycle Strategy

Maintenance / Rehabilitation

Maintenance program varies by department

Replacement

The replacement of land improvements depends on deficiencies identified

Risk & Criticality

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 54 Land Improvement Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$233,540	-	-	-	-
(100%)	(0%)	(0%)	(0%)	(0%)

This is a high-level model developed by municipal 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

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

Table 24 Land Improvements Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
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	Scope	Replacement Cost	$233,540
			Quantity (feet)	1275
Description of the condition of vehicles	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Very Good (96%)
			% Condition > Fair	100%
			% Condition poor and very poor	0%
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	0%
			Annual reinvestment	$2,118
			Capital reinvestment rate	0.91%

Proposed Levels of Service

The scenarios that were used to analyse Sables-Spanish Rivers' inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 4: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the land improvement assets.

Table 25 Land Improvement Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$233,540	Very Good (82%)	$14,580
Scenario 2 - Current Capital Investment Rate	$233,540	Poor (8%)	$2,118
Scenario 3 - Good Condition	$233,540	Good (60%)	$12,038
Scenario 4 - Fair Condition	$233,540	Fair (40%)	$8,143

Appendix I: Water Network

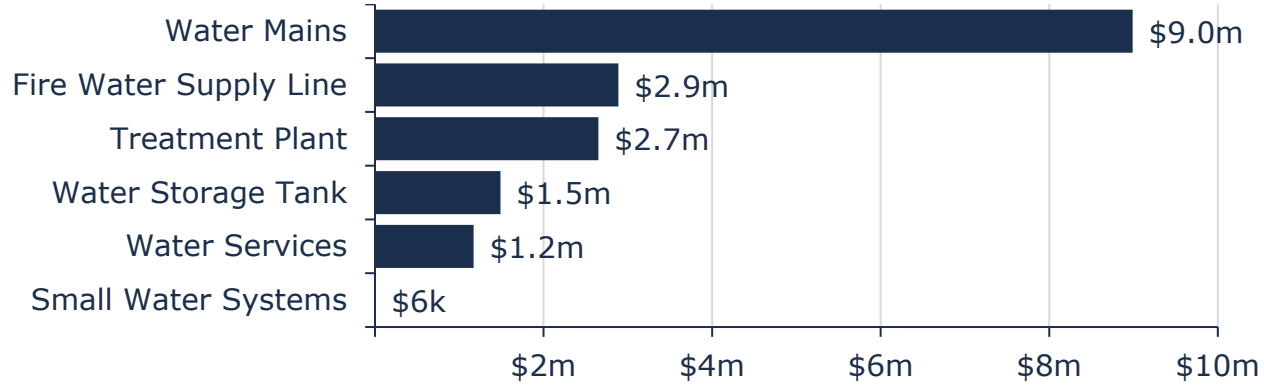
The water services provided by the Township are overseen by the Ontario Clean Water Agency (OCWA). The public works department works with OCWA to ensure the responsible management for the following:

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

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Sables-Spanish Rivers' water network inventory.

Figure 55 Water Network Replacement Cost

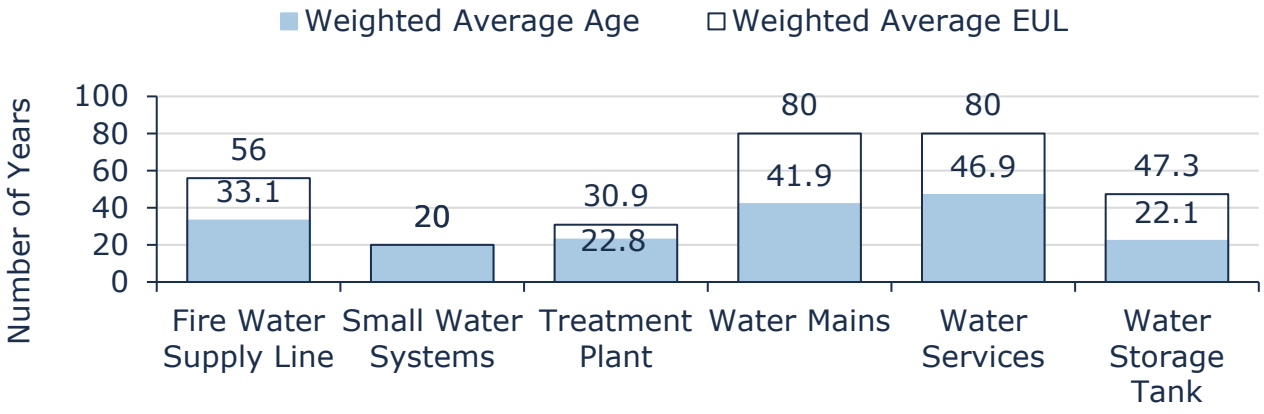


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

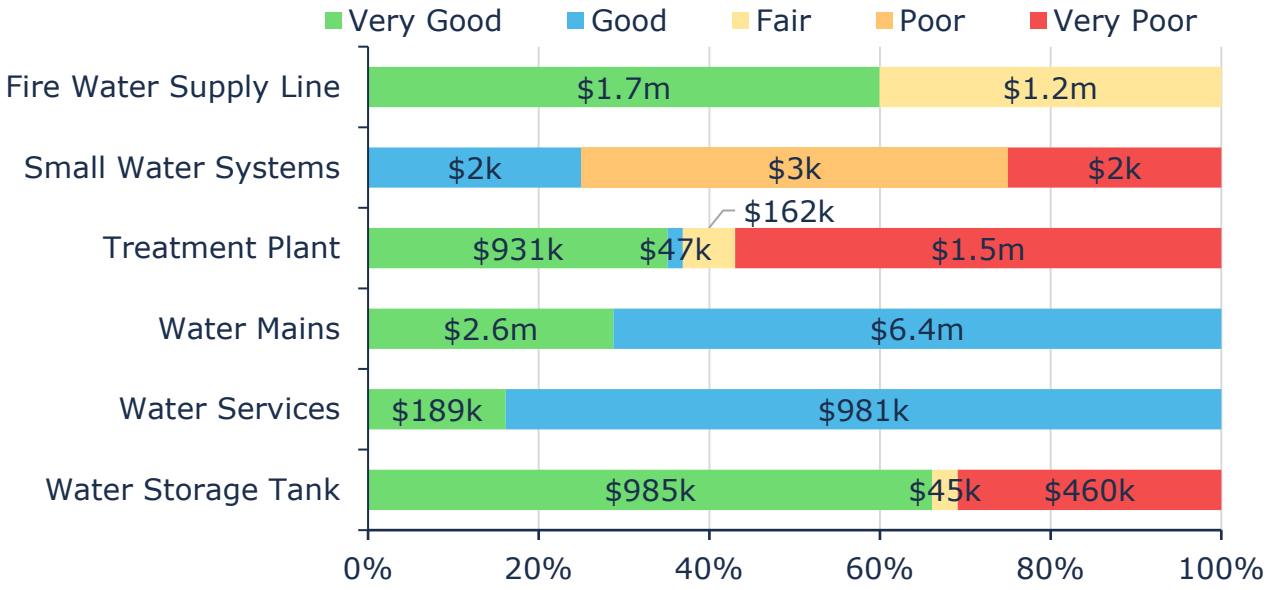
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 56 Water Network Average Age vs Average EUL



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

Figure 57 Water Network Condition Breakdown



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.

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.

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 are for hydrants.

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.

Figure 58 Water Network Current Lifecycle Strategy

Maintenance

Main flushing is completed on 100% of the network annual
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

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 available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 59 Water Network Risk Matrix

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$4,911,229 (29%)	$1,652,989 (10%)	$207,811 (1%)	$8,354,847 (49%)	$2,066,208 (12%)

This is a high-level model that has been developed based on information currently available 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

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

Table 26 Water Network Current Levels of Service

Community LOS		Service Attribute	Technical LOS	
Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	See Figure 60 Map of Water Network	Scope	Replacement Cost	$17,193,084
			Quantity (km of main)	19
			Quantity (# of Plants)	1
Description, which may include maps, of the user groups or areas of the municipality that have fire flow	See Figure 60 Map of Water Network		% of properties connected to the municipal water system	17%
			% of properties where fire flow is available	31%
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 eight customers	Quality / 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 to water main breaks compared to the total number of properties connected to the municipal water system	0.002
Description of the condition of the water network	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service		Average Condition	Good (73%)
			% Condition > Fair	89%
			% Condition poor and very poor	11%

Community LOS	Service Attribute	Technical LOS	
Services will be provided to ensure long-term sustainability with an emphasis on affordability.	Performance	% Risk that is High and Very High	61%
		Annual reinvestment	$71,000
		Capital reinvestment rate	0.20%

Figure 60 Map of Water Network

Proposed Levels of Service

For the water system, the proposed level of service will remain unchanged until a comprehensive review of the system is completed. This includes a full system review, rate study, condition assessment, and the development of a financial plan, all of which are scheduled for completion in 2027.

Once finalized, the detailed findings from these initiatives will be integrated into the Township's asset management program. This will ensure that future decisions regarding the water system are data-informed, financially sound, and aligned with long-term service objectives and sustainability goals.

Appendix J: Sanitary Network

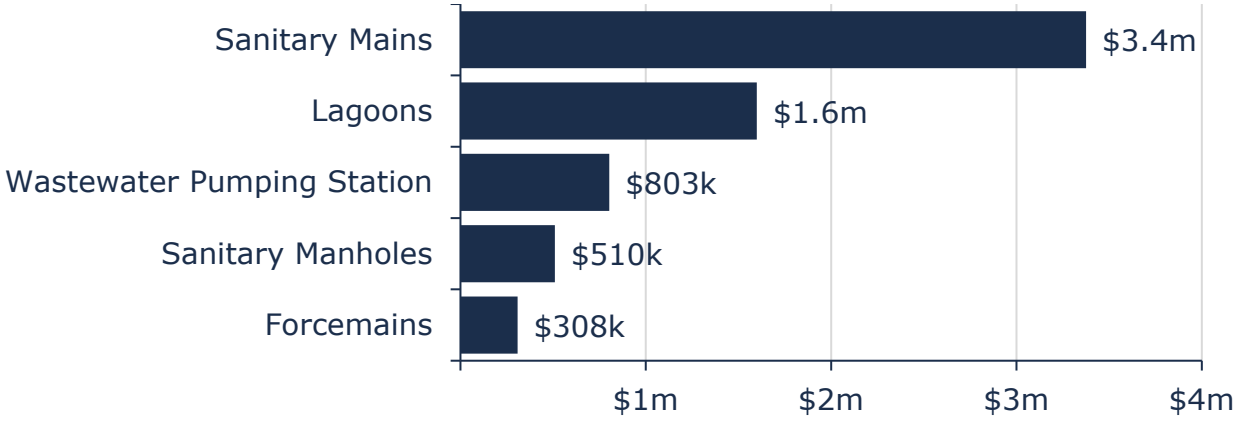
The Sanitary Network provided by the Township are overseen by the public works department with OCWA (Ontario Clean Water Agency). The department is responsible for the following:

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

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Sables-Spanish Rivers' sanitary network inventory.

Figure 61 Sanitary Network Replacement Cost

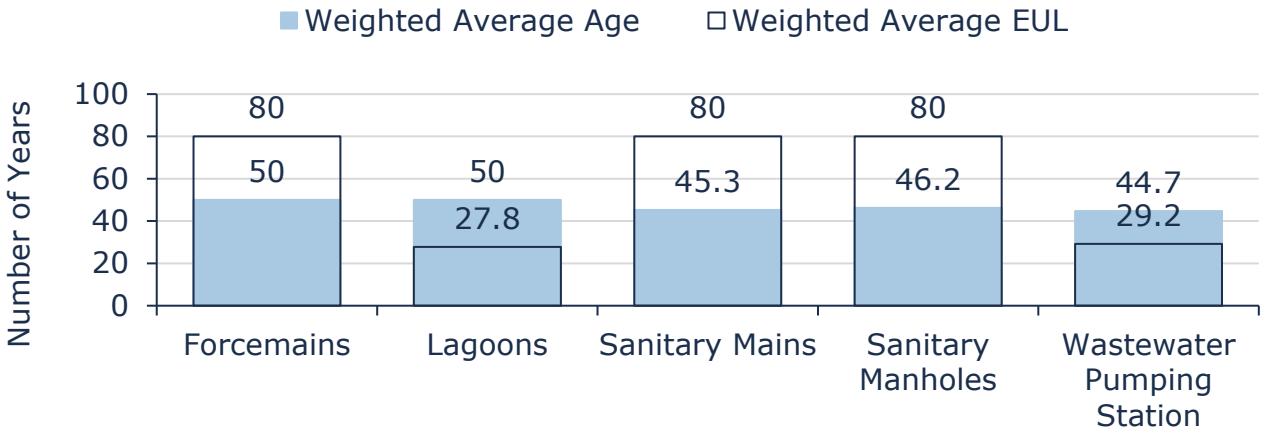


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

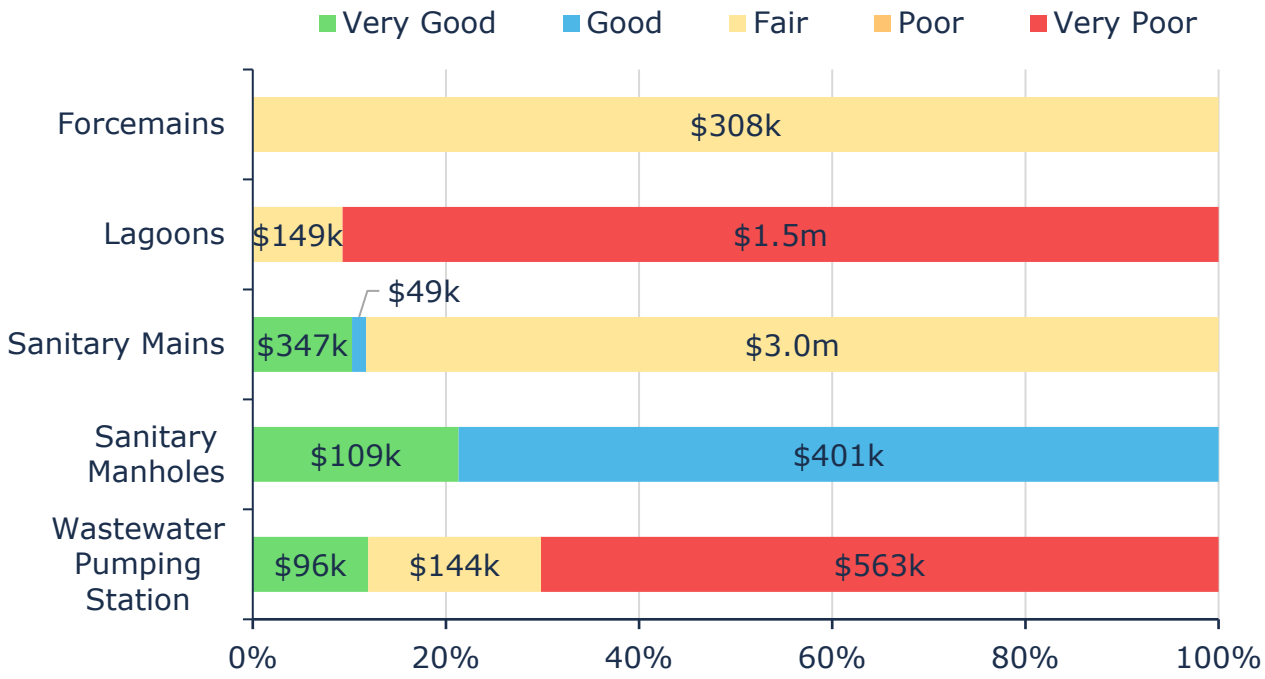
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 62 Sanitary Network Average Age vs Average EUL



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

Figure 63 Sanitary Network Condition Breakdown



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.

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.

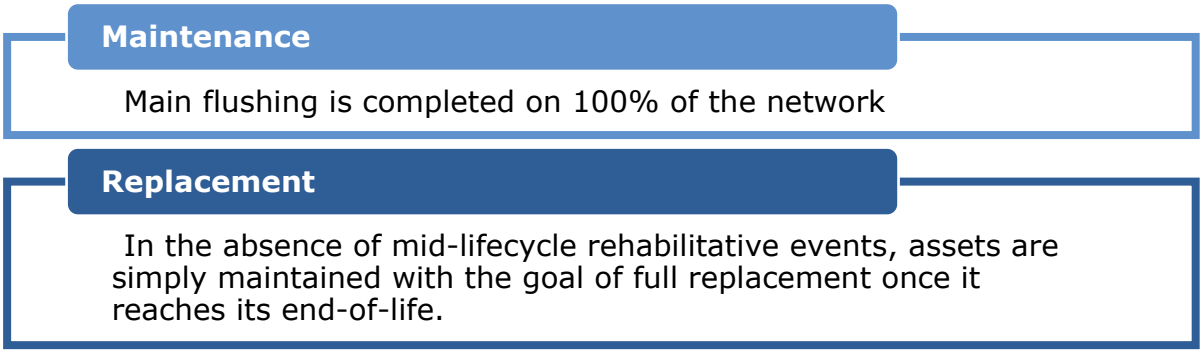
Current Approach to Condition Assessment

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 rating criteria used to determine the current condition of sewer network assets and forecast future capital requirements is the same as other categories 0-100.

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.

Figure 64 Sanitary Network Current Lifecycle Strategy



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 available inventory data. See Appendix L: for the criteria used to determine the risk rating of each asset.

Figure 65 Sanitary Network Risk Matrix

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$967,587 (15%)	$1,084,961 (16%)	$1,941,584 (29%)	$294,773 (4%)	$2,305,821 (35%)

This is a high-level model that has been developed based on information currently available 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.

Levels of Service

The framework created by the Township for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Township have been developed through engagement with Township staff.

Current Levels of Service

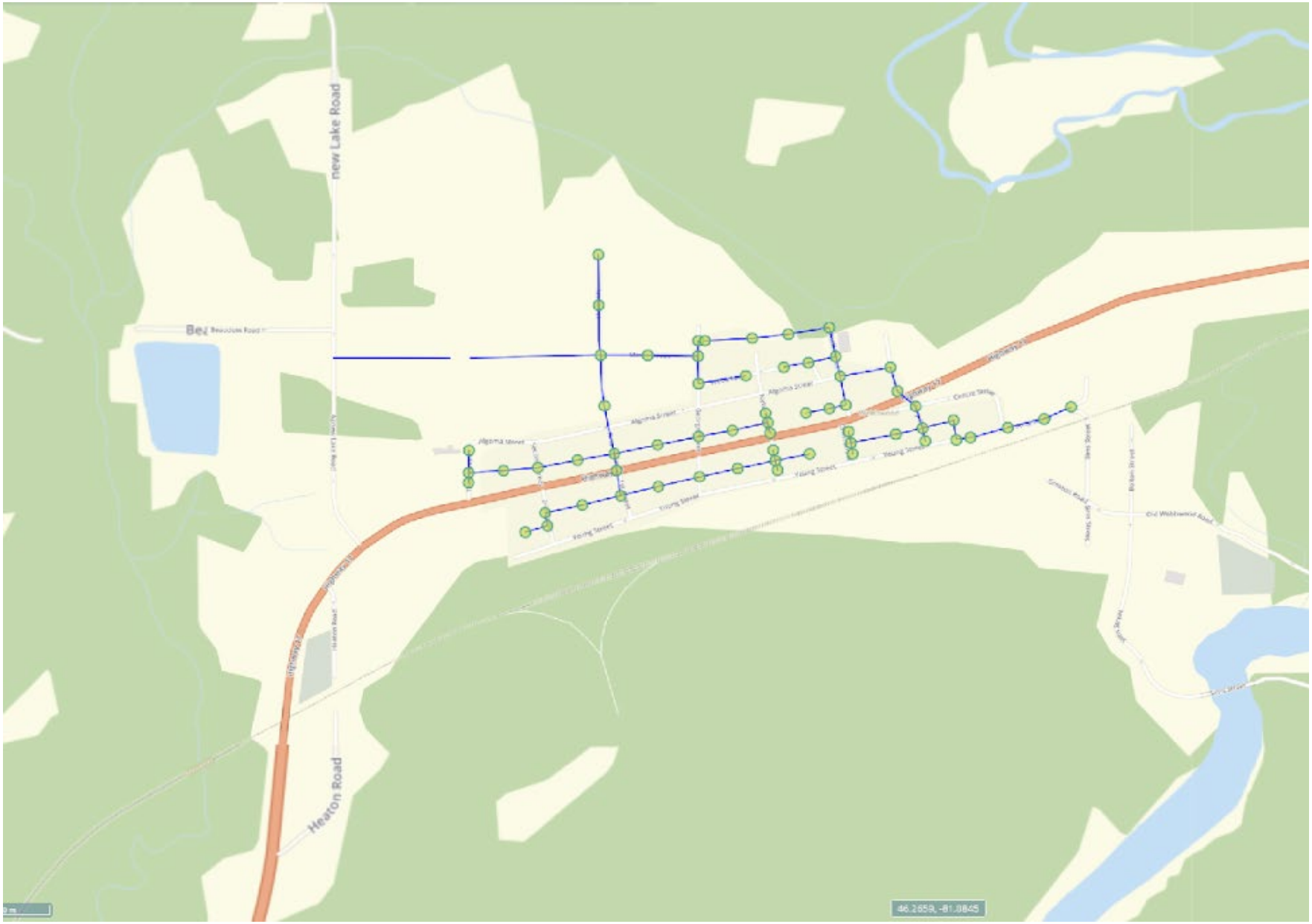
The following tables identify the Township's current level of service for the Sanitary Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected.

Table 27 Sanitary Network Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
Description, which may include maps, of the user groups or areas of the township that are connected to the municipal wastewater system	See Figure 66 Map of Sanitary Network	Scope	Replacement Cost	$6,594,726
			Quantity (Assets)	79
			Quantity (Kilometers)	5.2 KM
			% of properties connected to the municipal wastewater system	6%
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	Quality / 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
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		# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
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		# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0

Community LOS		Service Attribute	Current Technical LOS	
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.		Average Condition	Fair (54%)
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.		% Condition > Fair	69%
			% Condition poor and very poor	31%
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. Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.		# 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
Services will be provided to ensure long-term sustainability with an emphasis on affordability.		Performance	% Risk that is High and Very High	39%
			Annual reinvestment	$45,000
			Capital reinvestment rate	0.68%

Figure 66 Map of Sanitary Network



Proposed Levels of Service

For the sanitary network, the proposed level of service will remain unchanged until a comprehensive review of the system is completed. This includes a full system review, rate study, condition assessment, and the development of a financial plan, all of which are scheduled for completion in 2027.

Once finalized, the detailed findings from these initiatives will be integrated into the Township's asset management program. This will ensure that future decisions regarding the sanitary network are data-informed, financially sound, and aligned with long-term service objectives and sustainability goals.

Appendix K: 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:

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

Appendix L: 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

Risk Frameworks – General

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 30 - 40 20 - 30 10 - 20 < 10	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Risk Frameworks – Road Network

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 30 - 40 20 - 30 10 - 20 < 10	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Risk Frameworks – Bridges & Culverts

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 30 - 40 20 - 30 10 - 20 < 10	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 30 - 40	1 - Rare 2 - Unlikely

Asset Category	Asset Segment	Risk Criteria	Criteria	Weighting (%)	Sub-Criteria	Weighting (%)	Value/Range	Score
							20 - 30 10 - 20 < 10	3 - Possible 4 - Likely 5 - Almost Certain

Risk Frameworks – Stormwater Network

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 30 - 40 20 - 30 10 - 20 < 10	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 30 - 40 20 - 30 10 - 20 < 10	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Risk Frameworks – Sanitary Network

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 30 - 40 20 - 30 10 - 20 < 10	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 30 - 40 20 - 30 10 - 20 < 10	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain

Risk Frameworks – Water Network

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 30 - 40 20 - 30 10 - 20 < 10	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 30 - 40 20 - 30 10 - 20 < 10	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain