Asset Management Plan

Township of Springwater

Township of
Springwater

This Asset Management Program was prepared by:

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

Key Statistics

Replacement cost of asset portfolio

$1.07 billion

Replacement cost of infrastructure per household

$135,896

Percentage of assets in fair or better condition

83%

Percentage of assets with assessed condition data

62%

Target reinvestment rate

2.4%

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Executive Summary

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

Scope

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

This AMP includes the following asset categories:

Asset Category

Road Network	Bridges & Culverts
Storm Network	Buildings
Water Network	Vehicles
Sanitary Network	Land Improvements
Machinery & Equipment	

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

Findings

The overall replacement cost of the asset categories included in this AMP totals $1.07 billion. 83% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 62% of assets. For the remaining 38% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities.

Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

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

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Township's average annual capital requirement totals $26.1 million. In other terms, this will equate to $3,326 per household annually.

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

Annual Requirements per Household $3,326

Recommendations

To enhance the Township of Springwater's asset management program and ensure sustainable service delivery, the following key actions are recommended:

- Formal Asset Management Strategy: Develop a formal asset management strategy to guide program development at the Township of Springwater, including assessment and replacement policies for different asset groups, as well as a fleet and equipment utilization policy.

- Data Improvement: Continue to build and maintain a centralized inventory system and enhance data accuracy through regular condition assessments across all asset categories.

- Lifecycle Management: Implement proactive maintenance and rehabilitation strategies to extend asset life and reduce long-term costs.

- Capital and Risk Planning: Align capital planning with lifecycle needs, prioritize high-risk assets, and incorporate climate resilience into infrastructure management.

- Service Level Preparation: Prepare for establishing proposed levels of service by engaging with stakeholders and aligning service levels with community expectations and regulatory requirements.

- Staff Training and Stakeholder Engagement: Invest in staff training and strengthen community engagement to support informed decision-making and efficient asset management.

Overview of Asset Management

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

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

Total Cost of Ownership

Build/Acquire
20%

Operate, Maintain, and Dispose
80%
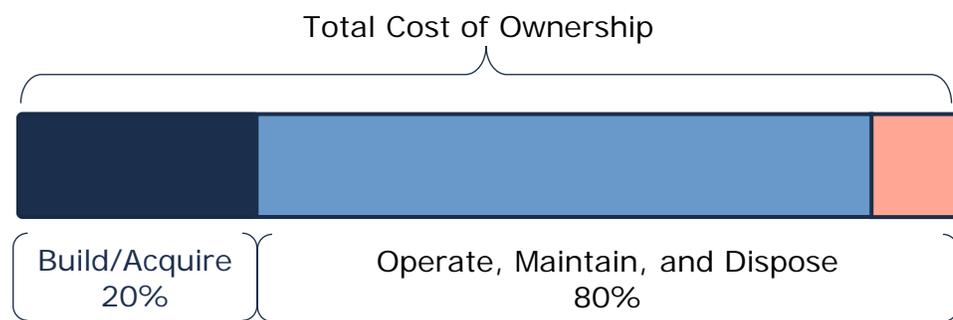
These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning and is an essential element of a broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

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

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 to service delivery and lifecycle management ensures the Township has line of sight to achieve their strategic objectives.

The Official Plan for the Township of Springwater was adopted on October 6, 1997, and came into effect in 1998 for the first time. It provides a framework for managing physical, social, economic, and environmental change over a 20-year period. Its goals include preserving natural heritage, protecting agricultural areas, fostering economic development, and directing new growth to existing urban settlement areas. The plan also emphasizes maintaining a high quality of life, promoting cost-effective development, and balancing environmental protection with growth. The most updated version of the plan was amended in 2020.

Asset Management Policy

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

The Township adopted a Strategic Asset Management Policy in 2018 in accordance with Ontario Regulation 588/17. The policy outlines the Township's mission to implement a municipal-wide asset management program with a primary goal to achieve the lowest total cost of ownership while meeting desired levels of service.

Asset Management Strategy

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

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

Asset Management Plan

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

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

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

Key Concepts in Asset Management

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

Lifecycle Management Strategies

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

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

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

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

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

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

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 local 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 municipality 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:

$$Risk = Probability\ of\ Failure\ x\ Consequence\ of\ Failure$$

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's failure will have on an organization's asset management goals. 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.

Levels of Service

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

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

High-Level Service Indicators

While community and technical levels of service provide a description of the service provided or performance metrics, these do not always provide a clear, succinct illustration of how the service is balanced.

Measuring and evaluating levels of service is a matter of finding a balance between three key indicators: cost, performance, and risk. This balance will inform the high-level decisions of the Township to key decisions, such as whether it is acceptable to take on more costs to achieve better performance.

Ultimately, these key indicators will be supplemented by the community and technical levels of service for further context of service provisions. The criteria for the high-level service indicators are described in the following table.

Indicator	Metric	Measurement
Cost	Annual Average Capital Invested	Annual funding available for each asset category derived from sustainable sources
	Average Annual Capital Required	Annual funding required to sustain and renew the current asset portfolio
Performance	Overall Condition	% of assets in very good, good, fair, poor, and very poor condition
Risk	Overall Risk Distribution	% of assets in very low, low, moderate, high, and very high state of risk

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (Roads, Bridges, Water, Wastewater, Stormwater) the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core asset categories, the Township has determined the qualitative descriptions that will be used to determine the community level of service provided. These

descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

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

For core asset categories (Roads, Bridges, Water, Wastewater, Stormwater) the Province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP. For non-core asset categories, the Township will determine technical metrics that measure the current levels of service.

Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community, as well as proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

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

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

Ontario Regulation 588/17

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

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

Scope and Methodology

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

Asset Categories

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

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

Asset Category	Source of Funding
Road Network	Tax Levy
Bridges & Culverts	
Buildings	
Land Improvements	
Vehicles	
Storm Network	
Machinery & Equipment	
Water Network	User Rates
Sanitary Network	

Deriving Replacement Costs

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

- **User-Defined Cost and Cost/Unit**: Based on costs provided by municipal staff which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience

- **Cost Inflation/CPI Tables**: Historical cost of the asset is inflated based on Consumer Price Index or Non-Residential Building Construction Price Index

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

Estimated Useful Life and Service Life Remaining

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

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

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

Reinvestment Rate

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

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

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

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

Deriving Asset Condition

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

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

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

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

Portfolio Overview

Community Profile

Springwater is a Township incorporated in 1994 in Central Ontario Canada, in Simcoe County, adjacent to Barrie and a 1.5-hour drive to Toronto. The Township has eight settlement areas, two of which are considered major communities and six are considered minor.

Census Characteristic	Springwater	Ontario
Population 2021	21,701	14,223,942
Population Change 2016-2021	13.9%	5.8%
Total Private Dwellings	7,845	5,929,250
Population Density	40.5/km^2	15.9/km^2
Land Area	535.85 km^2	892,411.76 km^2

Climate Change

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

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012. By the late 21st century, the projected increase could reach an additional 24%.

During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts,

flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

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

Climate Profile

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) – Springwater may experience the following trends:

1. Higher Average Annual Temperature
   - Between the years 1971 and 2020 the annual average temperature was 6.7°C
   - Under a high emissions scenario, the annual average temperatures are projected to increase to 9.3°C by the year 2050 and to 13.2°C by the end of the century.
2. Increase in Total Annual Precipitation
   - Under a high emissions scenario, Springwater is projected to experience a 13% increase in precipitation for the period of 2051 - 2080 and a 17% increase by the end of the century.
3. 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.
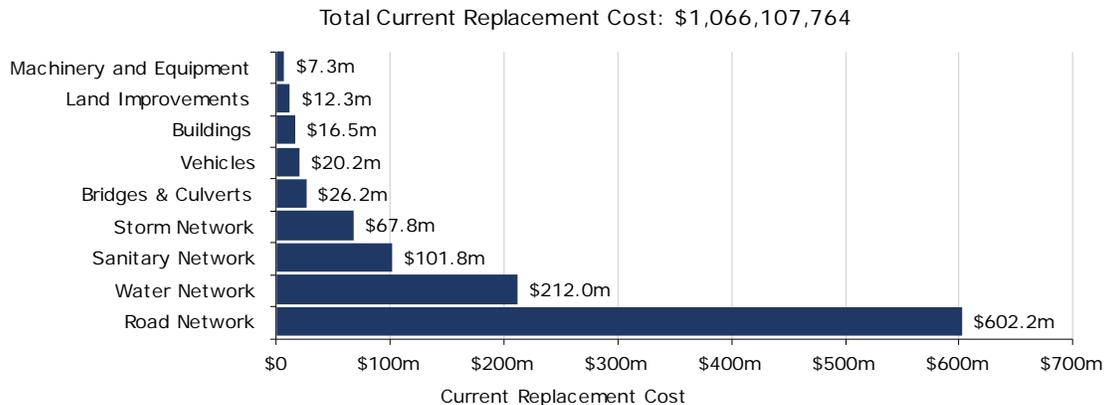
To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices. The integration of asset management and climate change adaptation observes industry best practices and enables the development of a holistic approach to risk management.

State of the Infrastructure

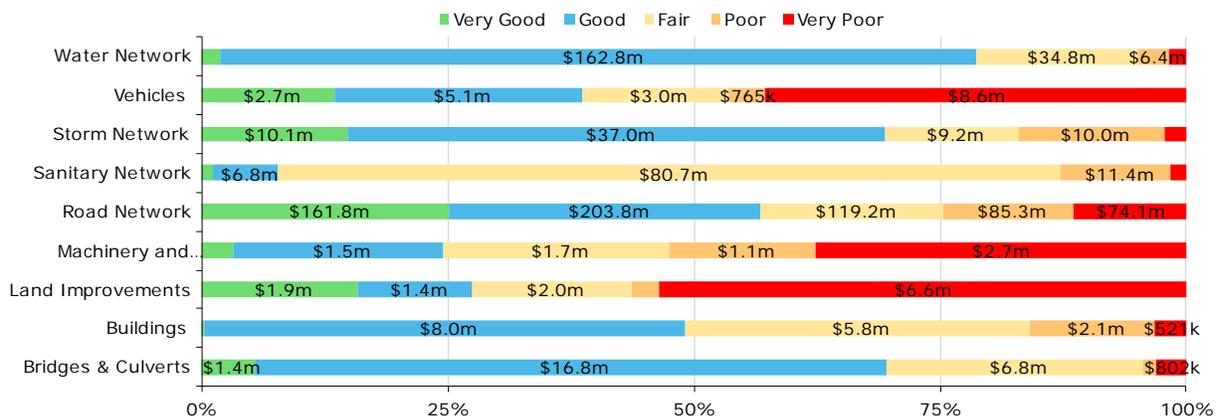| Asset Category	Replacement Cost	Average Asset Condition	Financial Capacity
Road Network	$602,216,924	Fair (59%)	Annual Requirement: $16,260,000
Bridges and Culverts	$26,207,703	Good (61%)	Annual Requirement: $564,000
Storm Network	$67,772,438	Fair (59%)	Annual Requirement: $1,130,000
Buildings	$16,451,492	Fair (53%)	Annual Requirement: $614,000
Land Improvements	$12,254,953	Poor (32%)	Annual Requirement: $819,000
Vehicles	$20,206,318	Poor (38%)	Annual Requirement: $1,665,000
Machinery & Equipment	$7,259,851	Poor (34%)	Annual Requirement: $754,000
Water Network	$211,971,925	Good (60%)	Annual Requirement: $2,900,000
Sanitary Network	$101,766,160	Fair (50%)	Annual Requirement: $1,386,000
Overall (Average)	$1,066,107,764	Fair (57%)	Annual Requirement: $26,092,000

Total Replacement Cost of Asset Portfolio

The asset categories analysed in this AMP have a total replacement cost of $1.07 billion based on inventory data from 2024. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Total Current Replacement Cost: $1,066,107,764

Category	Current Replacement Cost
Machinery and Equipment	$7.3m
Land Improvements	$12.3m
Buildings	$16.5m
Vehicles	$20.2m
Bridges & Culverts	$26.2m
Storm Network	$67.8m
Sanitary Network	$101.8m
Water Network	$212.0m
Road Network	$602.2m

Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 83% of assets in Springwater, based on replacement value, are in fair or better condition. This estimate relies on both age-based and field condition data.

This AMP relies on assessed condition data for 62% of assets; for the remaining portfolio, age is used as an approximation of condition.

Legend: Very Good, Good, Fair, Poor, Very Poor

Category	Very Good	Good	Fair	Poor	Very Poor
Water Network		$162.8m	$34.8m		$6.4m
Vehicles	$2.7m	$5.1m	$3.0m	$765k	$8.6m
Storm Network	$10.1m	$37.0m	$9.2m	$10.0m	
Sanitary Network		$6.8m	$80.7m	$11.4m	
Road Network	$161.8m	$203.8m	$119.2m	$85.3m	$74.1m
Machinery and..		$1.5m	$1.7m	$1.1m	$2.7m
Land Improvements	$1.9m	$1.4m	$2.0m		$6.6m
Buildings		$8.0m	$5.8m	$2.1m	$521k
Bridges & Culverts	$1.4m	$16.8m	$6.8m		$802k

Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

| Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	All	100%	2023 Road Needs Study
Bridges & Culverts	All	95%	2022 OSIM Report
Buildings	All	100%	2022 Facilities Assessment
Land Improvements	All	0%	N/A
Vehicles	All	0%	N/A
Machinery & Equipment	All	0%	N/A
Water Network	All	0%	N/A
Sanitary Network	All	0%	N/A
Storm Network	All	4%	2024 CCTV Assessments and Stormwater Ponds Bathymetric Survey and Condition Assessment[1]

Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 11% of the Township's assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B.

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[1] Qualitative Assessment.

Forecasted Capital Requirements

The development of a long-term capital forecast should include both asset rehabilitation and replacement requirements. With the development of asset-specific lifecycle strategies that include the timing and cost of future capital events, the Township can produce an accurate long-term capital forecast. The following graph identifies capital requirements over the next 80 years.
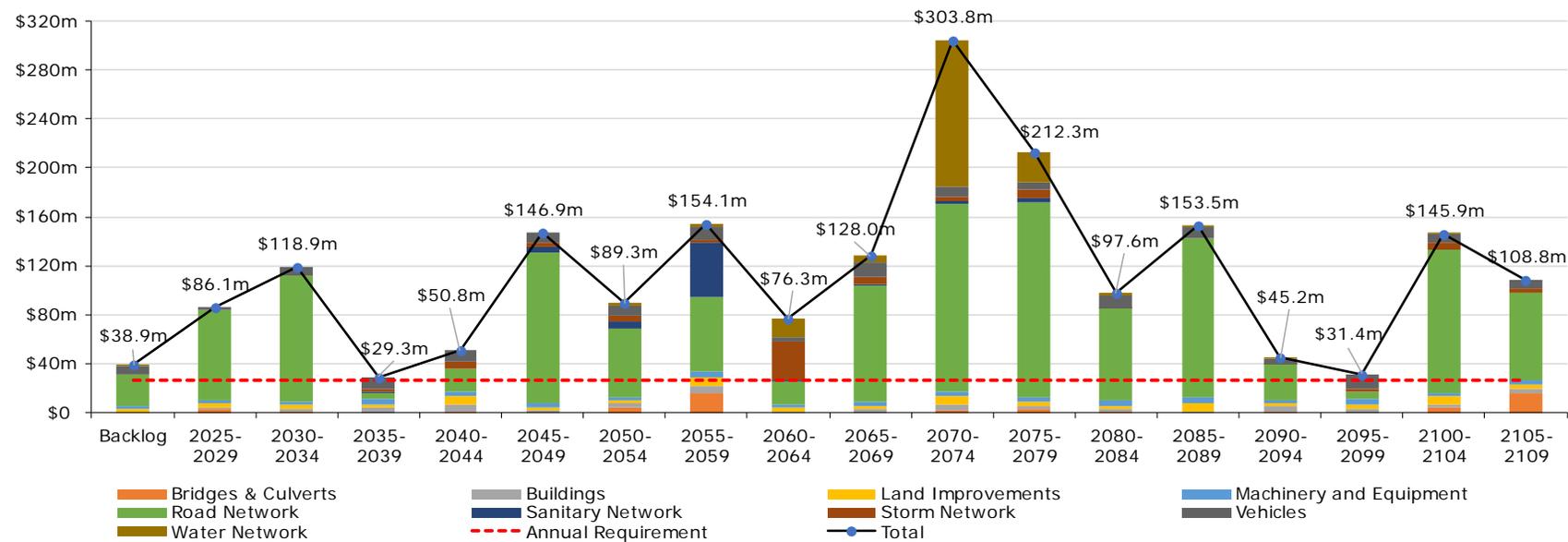
Note: This graph includes all assets except the non-linear water and sanitary assets as their annual requirements are sourced from the Ontario Clean Water Agency (OCWA) Water and Wastewater System Capital Plan report. Years with substantial increase in capital requirements are largely due to essential asset replacements

Risk & Criticality

Qualitative Risk

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

Lifecycle Management Strategies
The current lifecycle management strategies are considered more reactive than proactive. It is a challenge to find the right balance between maintenance, capital rehabilitation, and reconstruction. Most assets are simply maintained with the goal of full replacement once they reach end-of-life. Staff hope to develop better defined strategies that will extend the lifecycle and lower the total cost. These strategies will require sustainable annual funding to minimize the deferral of capital works.

Asset Data & Information
There is a lack of confidence in the available inventory data for asset management purposes. Staff are in the process of evaluating the resources and activities required to build and/or improve the existing asset inventory. Staff plan to prioritize data refinement efforts to increase confidence in the accuracy and reliability of asset data and information.

Quantitative Risk

The overall risk breakdown for the Township of Springwater's asset inventory is portrayed in Appendix C. 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 Springwater's asset management program. The following figure 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 2024 inventory data.
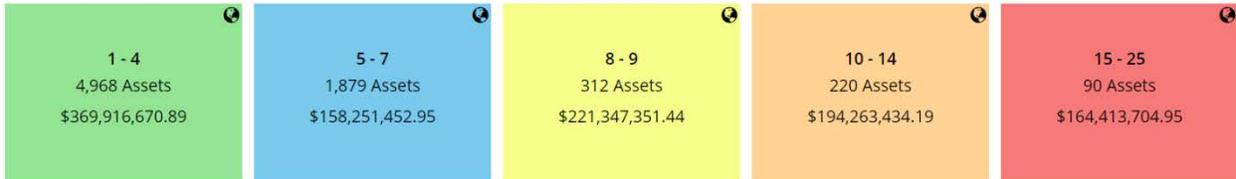
This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 4,968 assets, $369,916,671.
- Blue (5-7): 1,879 assets, $158,251,453.
- Yellow (8-9): 312 assets, $221,347,351.
- Orange (10-14): 220 assets, $194,263,434.
- Red (15-25): 90 assets, $164,413,705.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

A list of assets within the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
4,968 Assets	1,879 Assets	312 Assets	220 Assets	90 Assets
$369,916,670.89	$158,251,452.95	$221,347,351.44	$194,263,434.19	$164,413,704.95

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

Analysis of Tax-funded Assets

Tax-funded assets are valued at $752 million with 70% of assets in fair or better condition. The average annual capital requirement to sustain the current level of service for tax-funded assets is approximately $21.8 million.

Road Network

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

Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Paved Roads - HCB	177,832 m	Inflated 2022 Unit Price	$371,992,000
Paved Roads - LCB	142,290 m	Inflated 2022 Unit Price	$199,727,000
Sidewalks	38,307 m	Inflated 2022 Unit Price	$14,229,000
Streetlights	1,505	Inflated 2022 Unit Price	$16,269,000
			$602,217,000[2]

Total Current Replacement Cost: $602,216,924

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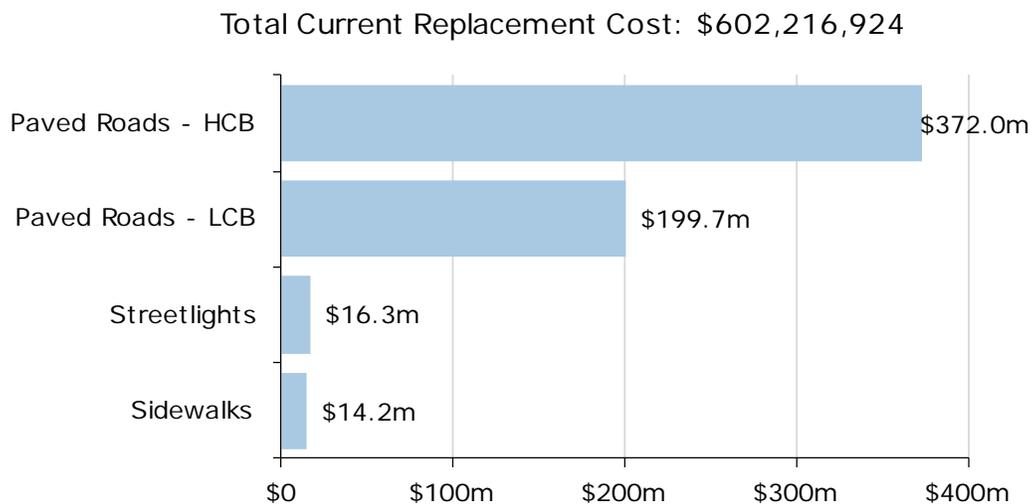
[2] Gravel Roads are not included in this analysis as they are not planned for replacement.

Asset Condition & Age

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

Weighted Average Age □ **Weighted Average EUL**

Paved Roads - HCB: 26.0 (25)
Paved Roads - LCB: 24.6 (15)
Sidewalks: 29.4 (20)
Streetlights: 23.2 (20)

Number of Years (y-axis 0–35)

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

■ Very Good ■ Good ■ Fair ■ Poor ■ Very Poor

Streetlights: $1.9m | $908k | $2.4m | $11.0m
Sidewalks: $642k | $13.1m
Paved Roads - LCB: $18.5m | $73.3m | $43.9m | $41.2m | $22.8m
Paved Roads - HCB: $103.5m | $126.3m | $73.8m | $41.3m | $27.2m

(x-axis: 0% 25% 50% 75% 100%)

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 more confidently. The following describes the Township's current approach:

- The road network is assessed on a cyclical (every 3 years) basis by engineering firms through Road Needs Studies, identifying defects and updating condition ratings.
- There is currently no formal approach to assessing the following road network segments: sidewalks and streetlights. However, sidewalks are inspected on a yearly basis form of safety inspections and streetlights are inspected during the winter months in conjunction with winter patrol and work orders are issued when outages are observed.

- Project prioritization is based on a multitude of factors including assessed condition of roads, and minimum maintenance standards, as well as the age and condition of underground and nearby infrastructure.

Estimated Useful Life & Service Life

The Estimated Useful Life for Road Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating.

| Asset Segment	Estimated Useful Life (Years)	Weighted Average Age (Years)	Average Service Life Remaining (Years)
Paved Roads - HCB	25	26	30 [1]
Paved Roads - LCB	15	25	22 [1]
Sidewalks	20	29	0
Street Lights	20	23	0

Note 1: Average service life remaining is based on condition assessment scores and planned lifecycle events. The planned lifecycle events result in doubling the estimated useful life of paved roads, with condition scores serving as a trigger point for these events. Better conditions generally lead to an extended lifecycle as seen in the later section.

Each asset's Estimated Useful Life should 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.
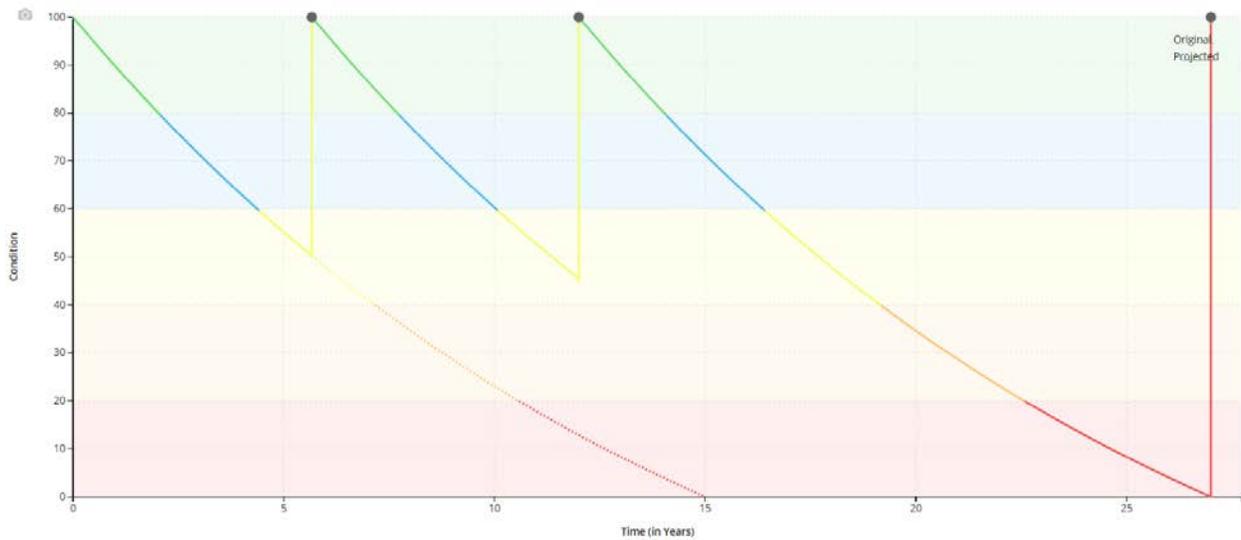
Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history, and environment. The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of paved roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Paved Roads - HCB

Event Name	Event Class	Event Trigger
Single Surface Overlay	Rehabilitation	50% condition rating (approximately)
Double Lift Mill and Pave	Rehabilitation	45% condition rating (approximately)
Reconstruction	Replacement	0-15% condition rating (approximately)
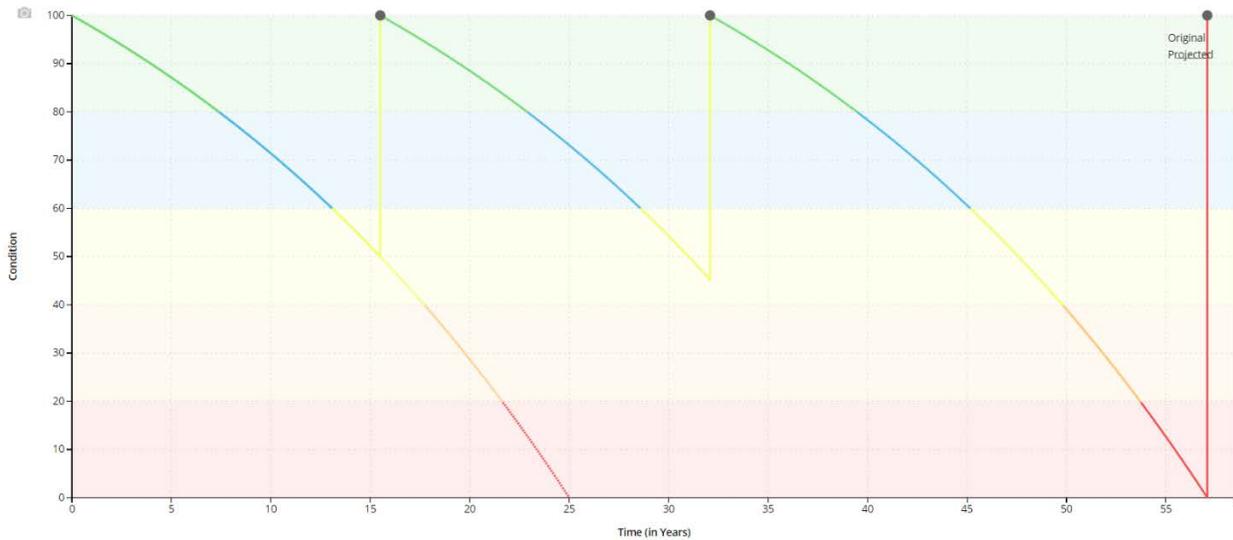
Paved Roads - LCB

Event Name	Event Class	Event Trigger
Microsurface Treatment	Rehabilitation	50% condition rating (approximately)
Double Surface Treatment	Rehabilitation	45% condition rating (approximately)
Reconstruction	Replacement	0-15% condition rating (approximately)

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.
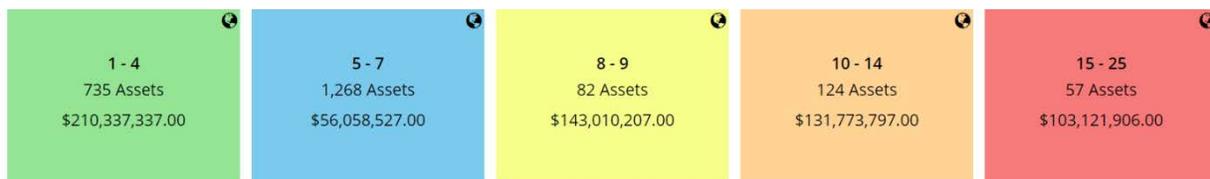
This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 735 assets, $210,337,337.
- Blue (5-7): 1,268 assets, $56,058,527.
- Yellow (8-9): 82 assets, $143,010,207.
- Orange (10-14): 124 assets, $131,773,797.
- Red (15-25): 57 assets, $103,121,906.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
735 Assets	1,268 Assets	82 Assets	124 Assets	57 Assets
$210,337,337.00	$56,058,527.00	$143,010,207.00	$131,773,797.00	$103,121,906.00

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

Forecasted Capital Requirements

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

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

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

Levels of Service

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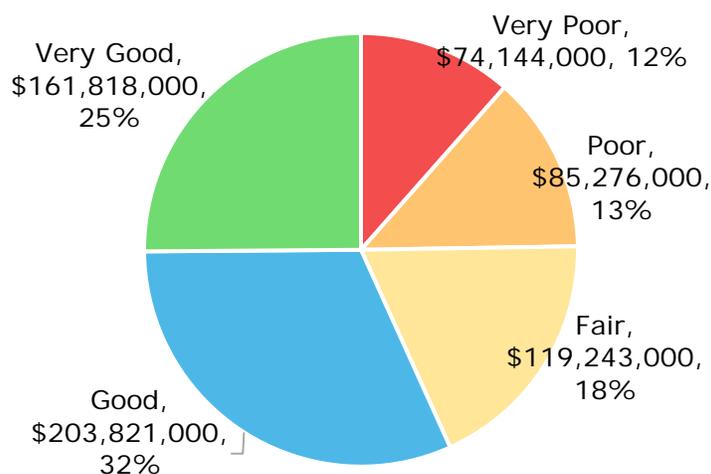
The following tables identify the Township's current level of service for the Road Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the road network in the Township and its level of connectivity	See Appendix B
Quality	Description or images that illustrate the different levels of road class pavement condition	The Township recently conducted a Road Needs Study in 2023 in coordination with Thurber Engineering Ltd. This study assigned each road segment with a surface condition rating between 1 and 100. A surface condition rating between 1 and 50 means that the road surface exhibits moderate to significant deterioration and will likely require renewal or replacement within 1-5 years. A surface condition rating between 60 and 100 means that the road surface is in good condition. Renewal or reconstruction is typically not required for 6-10+ years.

Technical Levels of Service

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

| Service Attribute	Technical Metric	Current LOS
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	1.69
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	0.5
Quality	Average pavement condition index for paved roads in the Township	57%
	Average surface condition for unpaved roads in the Township (e.g. excellent, good, fair, poor)	94%

Bridges & Culverts

Bridges & Culverts represent a critical portion of the transportation services provided to the community. The Public Works Department is responsible for the maintenance of all bridges located across municipal roads with the goal of keeping structures in an adequate state of repair and minimizing service disruptions. The OSIM Report was completed in collaboration with TSI Inc. and was submitted in August 2024[3].

Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's Bridges & Culverts inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Bridges	19	2022 OSIM (Inflated)	$19,550,000
Culverts	9	2022 OSIM (Inflated)	$6,658,000
			$26,208,000
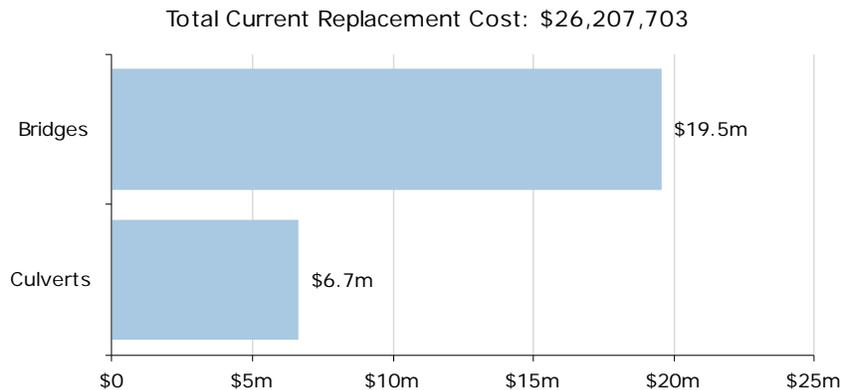
Total Current Replacement Cost: $26,207,703

Asset Condition & Age

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

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[3] The findings will be included as part of the 2025 update.
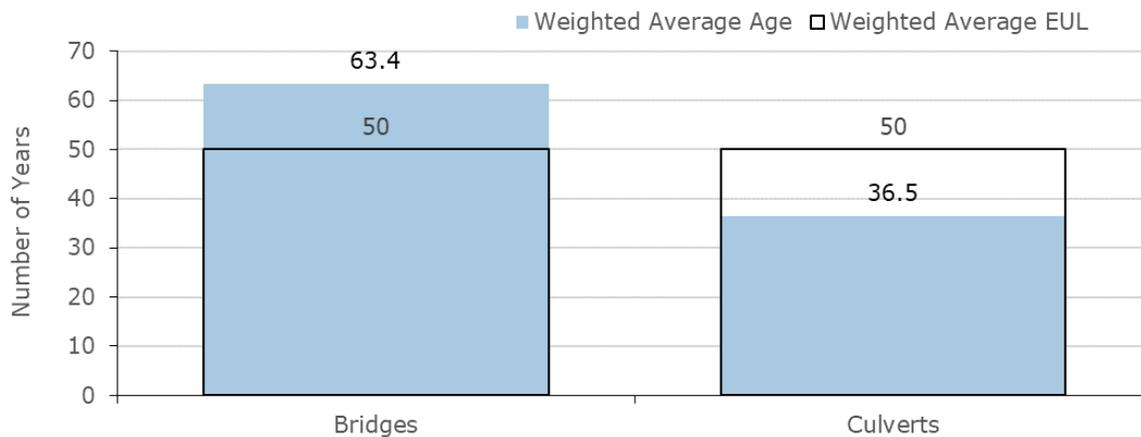
The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

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 more confidently. The following describes the Township's current approach:

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

Estimated Useful Life & Service Life

The Estimated Useful Life for Bridges & Culverts assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Bridges	50 Years	63	32 [1]
Culverts	50 Years	37	33 [1]
		50	**23.3**

Note 1: Average service life remaining is based on the condition assessment score

Each asset's Estimated Useful Life should 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.
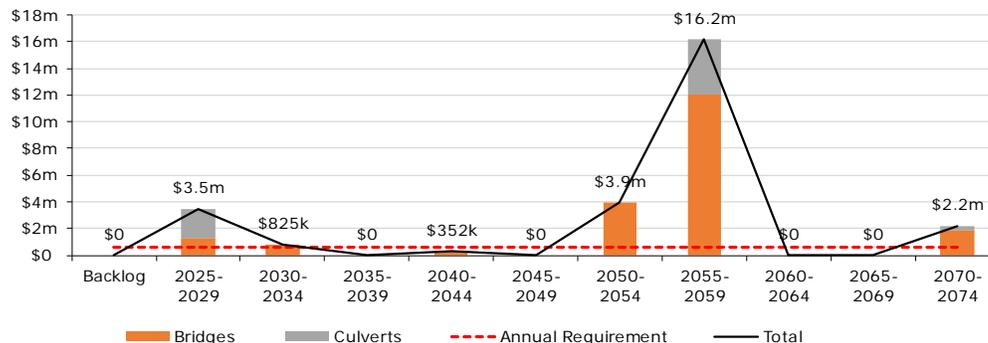
Lifecycle Management Strategy

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

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2024

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.
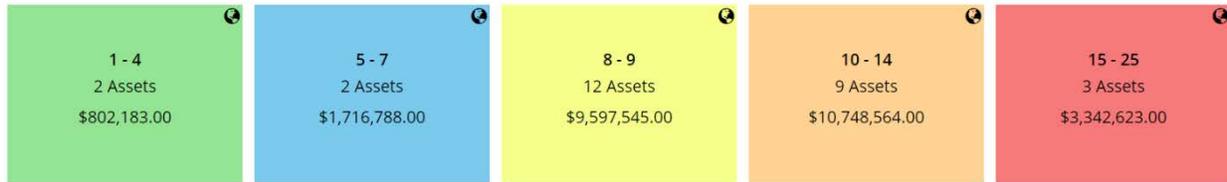
This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 2 assets, $802,183.
- Blue (5-7): 2 assets, $1,716,788.
- Yellow (8-9): 12 assets, $9,597,545.
- Orange (10-14): 9 assets, $10,748,564.
- Red (15-25): 3 assets, $3,342,623.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
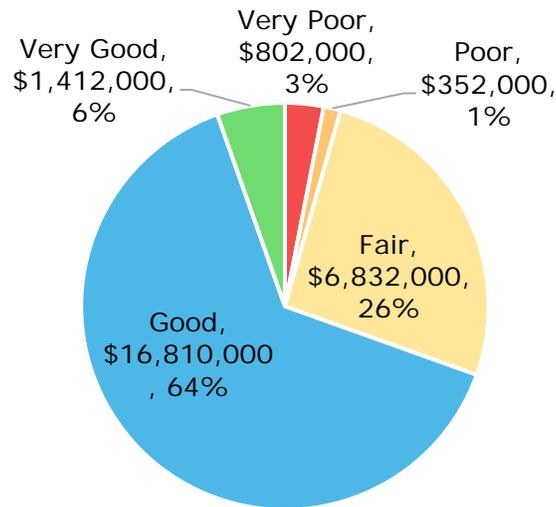- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
2 Assets	2 Assets	12 Assets	9 Assets	3 Assets
$802,183.00	$1,716,788.00	$9,597,545.00	$10,748,564.00	$3,342,623.00

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

Levels of Service

The following table outlines the performance service indicator for Bridges & Culverts assets.

Very Good, $1,412,000, 6%
Very Poor, $802,000, 3%
Poor, $352,000, 1%
Fair, $6,832,000, 26%
Good, $16,810,000, 64%

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and culverts are critical components of the Township's transportation network. Two bridge structures within the Township, bridge numbers 4 and 19, have load restrictions of 10 and 18 tonnes respectively.
Quality	Description or images of the condition of Bridges and Culverts and how this would affect use of the Bridges and Culverts	The average condition of Township bridges and culverts is good. See Appendix B for the details.

Technical Levels of Service

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

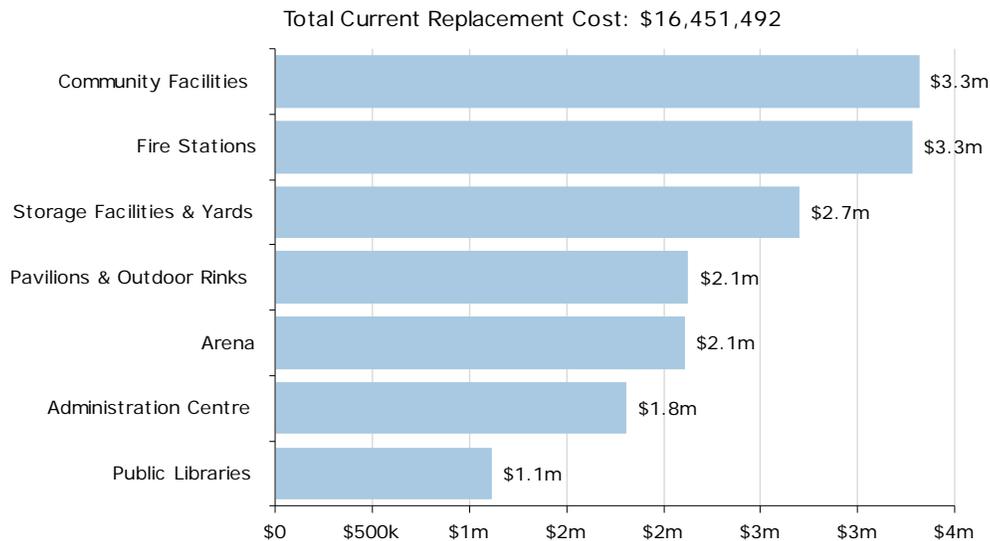| Service Attribute	Technical Metric	Current LOS
Scope	% of bridges in the Township with loading or dimensional restrictions	Approximatly 7.4 % (or two structures) have loading restrictions. Bridge 4 – Load restriction of 10 tonnes Bridge 19 – Load restriction of 18 tonnes
Quality	Average bridge condition index value for bridges in the Town	The average bridge condition value for bridges is 67%
Quality	Average bridge condition index value for structural culverts in the Town	The average bridge condition value for structural culverts is 66%

Buildings

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

- administrative centre
- public libraries
- fire stations
- recreation and community facilities

## Asset Inventory & Replacement Cost

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

Asset Segment	Replacement Cost Method	Total Replacement Cost
Administration Centre	Cost/Unit	$1,809,000
Arena	Cost/Unit	$2,107,000
Community Facilities	Cost/Unit	$3,317,431
Fire Stations	Cost/Unit	$3,278,734
Pavilions & Outdoor Rinks	Cost/Unit	$2,128,332
Public Libraries	Cost/Unit	$1,113,210
Storage Facilities & Yards	Cost/Unit	$2,698,142
		$16,451,000

Total Current Replacement Cost: $16,451,492

| Asset Segment	Value
Community Facilities	$3.3m
Fire Stations	$3.3m
Storage Facilities & Yards	$2.7m
Pavilions & Outdoor Rinks	$2.1m
Arena	$2.1m
Administration Centre	$1.8m
Public Libraries	$1.1m

Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment.
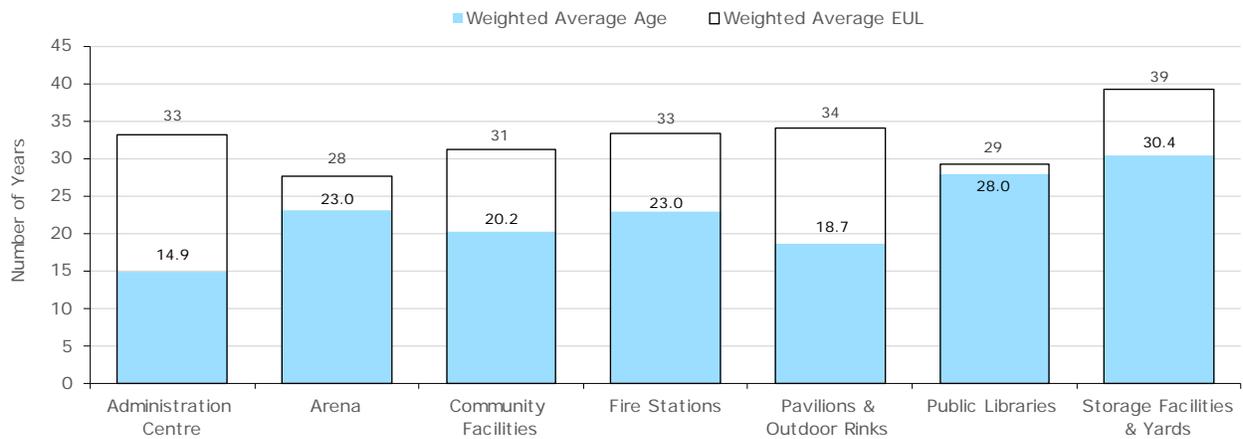
The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.
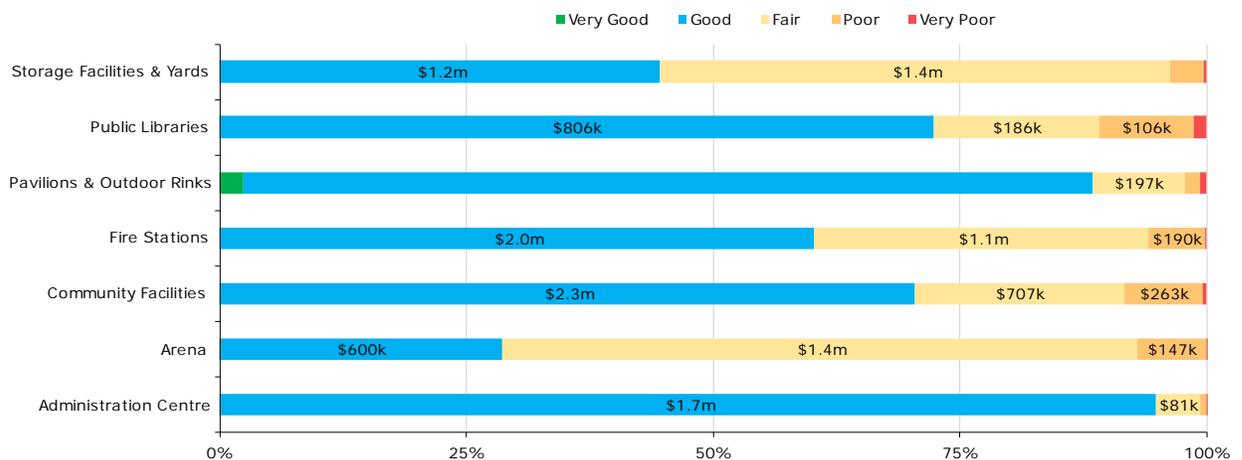
To ensure that the Township's Buildings continue to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the buildings.

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 more confidently. The following describes the Township's current approach:

- A comprehensive facility assessment was completed in 2022 for all Township facilities. Facilities are checked monthly by staff for health and safety issues, building systems checks, and overall condition.
- Monthly inspections and checks are performed by internal staff, while the 2022 facility audit was conducted by an external company through a tendered bidding process.
- The facility audit used the Facility Condition Index (FCI). Ther is currently no current internal policy/strategy for using the FCI rating. Internal staff complete visual health and safety inspections and report major issues/concerns.
- The data collected from the 2022 Facility Audit has been crucial in the Township's new approach to facility management, providing a proactive stance in budgeting and council directives for maintaining facilities.

Estimated Useful Life & Service Life

The Estimated Useful Life for Building assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.
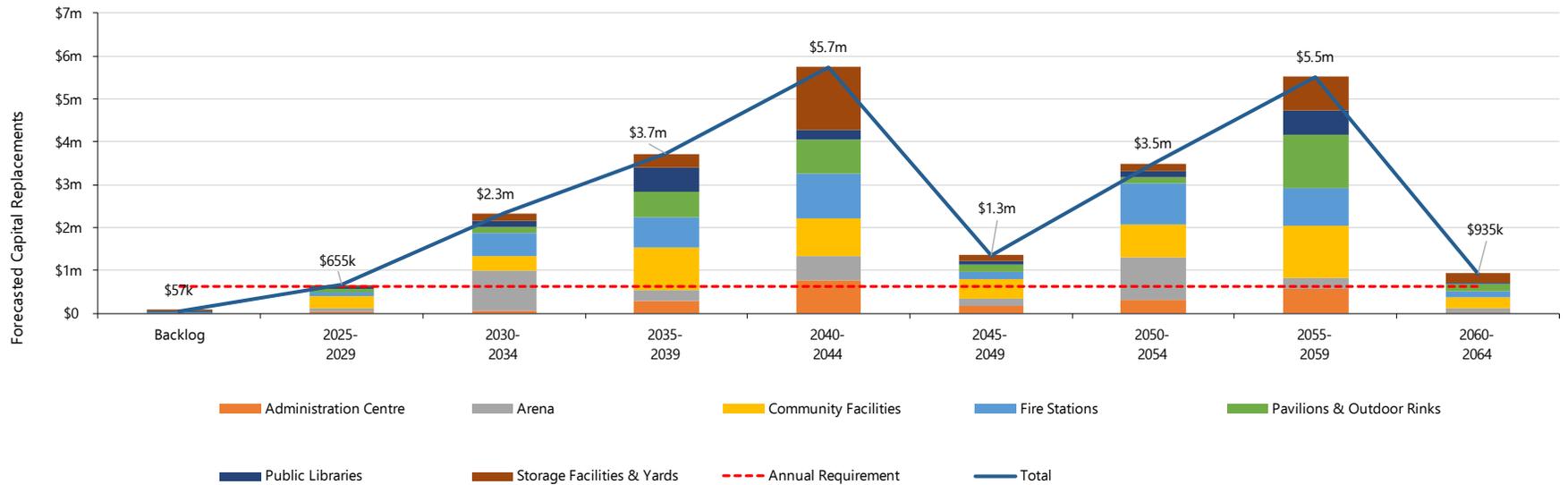
Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Administration Centre	1-50	14	10
Arena	1-50	24	3
Community Facilities	23-30	20	3
Fire Stations	24-31	22	3
Pavilions & Outdoor Rinks	15-30	22	1
Public Libraries	24-26	24	1
Storage Facilities & Yards	24-35	24	3

Each asset's Estimated Useful Life should 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.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Lifecycle Management Strategies

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

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance activities include monthly inspections of all building systems (HVAC, electrical, plumbing) by staffed technicians. External contractors handle annual inspections for fire life safety equipment, drain cleanouts, and septic inspections. Maintenance needs are often identified through regular inspections, health and safety walk-throughs, and feedback from rental or user groups.
Rehabilitation	Rehabilitation activities include roof replacements, window replacements, HVAC system replacements, flooring updates, and plumbing fixture updates, often following the recommendations from the facility assessment.
Replacement	Replacement is typically based on manufacturers' lifecycle for equipment, although more frequent replacement may be necessary due to heavy use or damage identified during monthly inspections.

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.

This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 31 assets, $3,601,417.
- Blue (5-7): 7 assets, $1,701,960.
- Yellow (8-9): 3 assets, $2,274,406.
- Orange (10-14): 8 assets, $17,988,743.
- Red (15-25): 3 assets, $9,125,569.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

| 1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
31 Assets	7 Assets	3 Assets	8 Assets	3 Assets
$3,601,417.00	$1,701,960.00	$2,274,406.00	$17,988,743.00	$9,125,569.00
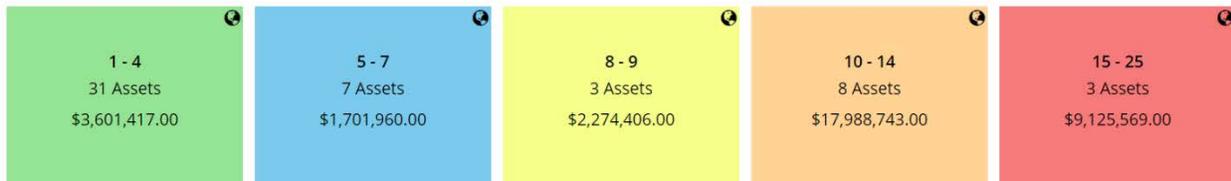
This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Risk Analysis

- The 2022 Facility Audit has significantly improved the Township's approach to facility management, but there are still concerns with data tracking and storage. It provided the first base line assessment and tool for staff to begin to plan with.
- The current lifecycle management strategies are being reviewed to adopt a more proactive approach to asset management and tracking.
- Many facilities, particularly older community halls, are reaching the end of their useful life and require significant renovations or replacement.
- The impact of climate change on facilities is acknowledged, with ongoing efforts to address deferred maintenance issues that have historically led to higher costs.
- Currently the Township has no contingency budgets for emergency repairs or replacement. Capital and minor capital requests are processed through the existing budget.

Current lifecycle Levels of Service

The following table outlines the performance service indicators for Building assets:
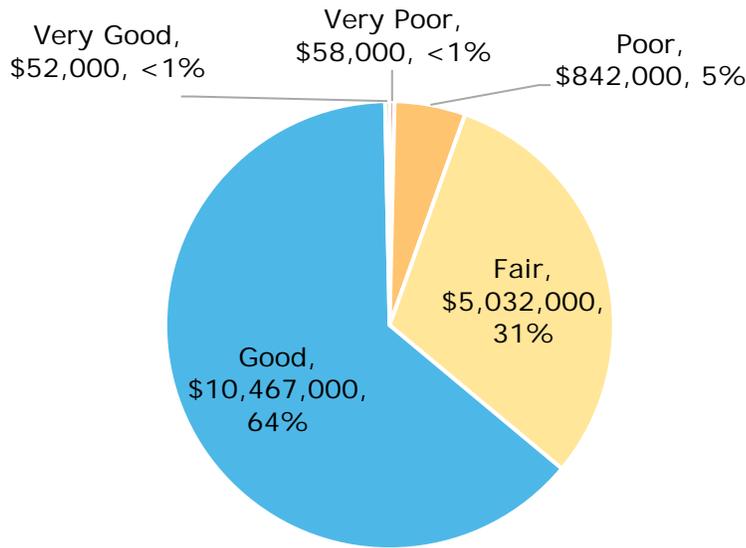
The following tables identify the Township's current level of service for buildings. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the municipal services supported by buildings	The Township owns 40 buildings supporting transportation services, recreation & culture, fire services, library services and administration

Technical Levels of Service

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

| Service Attribute	Technical Metric	Current LOS
Quality	Average condition of assets	53%
	% of buildings in poor or worse condition	16%

Land Improvements

The Township of Springwater owns a number of assets that are considered Land Improvements. This category include:

- Parks, recreation, and related structures
- Public Works

Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Parks and Recreation	92	CPI	$11,863,000
Public Works	3	CPI	$392,000
			$12,255,000
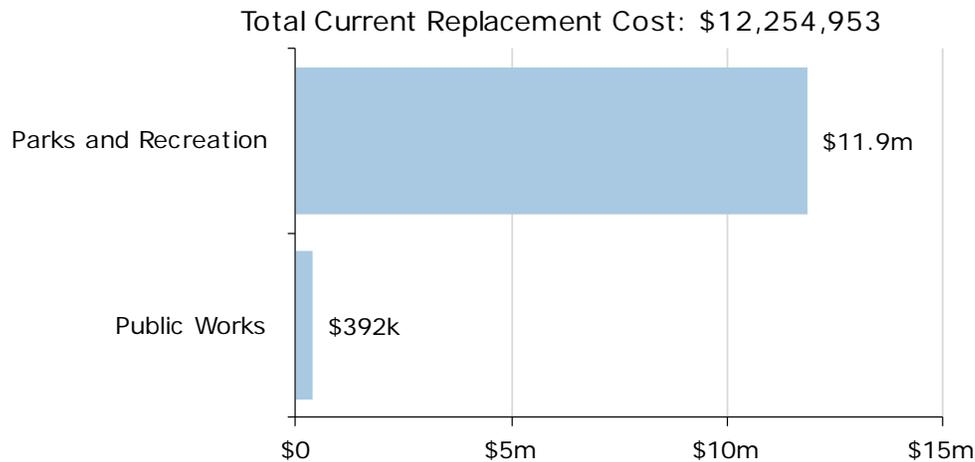
Total Current Replacement Cost: $12,254,953

Asset Condition & Age

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.
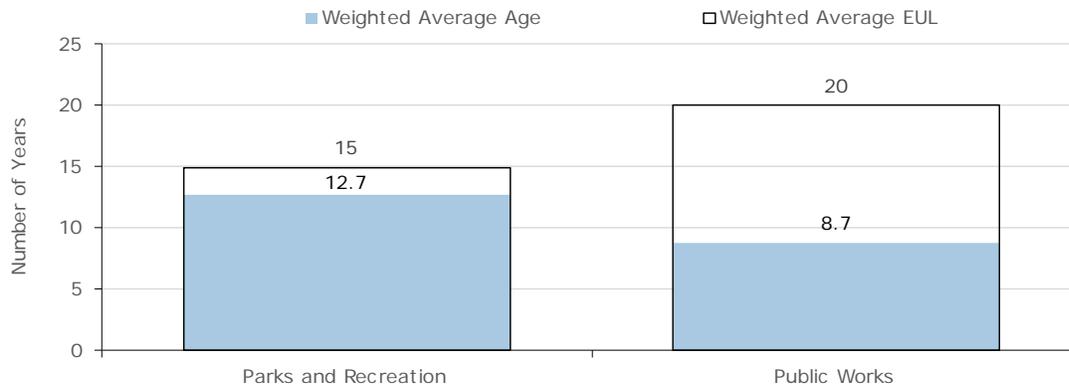
The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

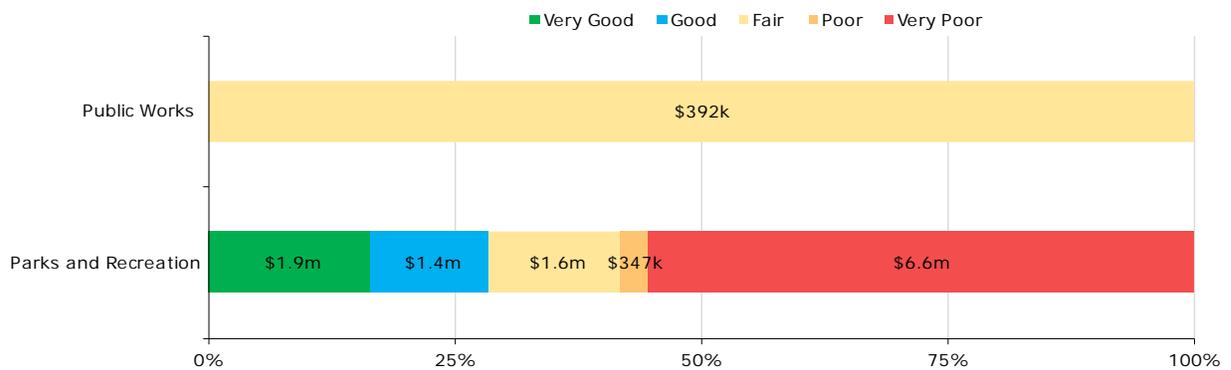To ensure that the Township's land improvements continue to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance,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

- Visual inspections are performed monthly to every other month.
- Assessments are conducted by internal staff, but there is currently no standardized rating system in place.
- There are no plans to expand the scope or frequency of assessments at this time.
- Condition data is used to plan for future projects, including repairs, upgrades, and other needs.
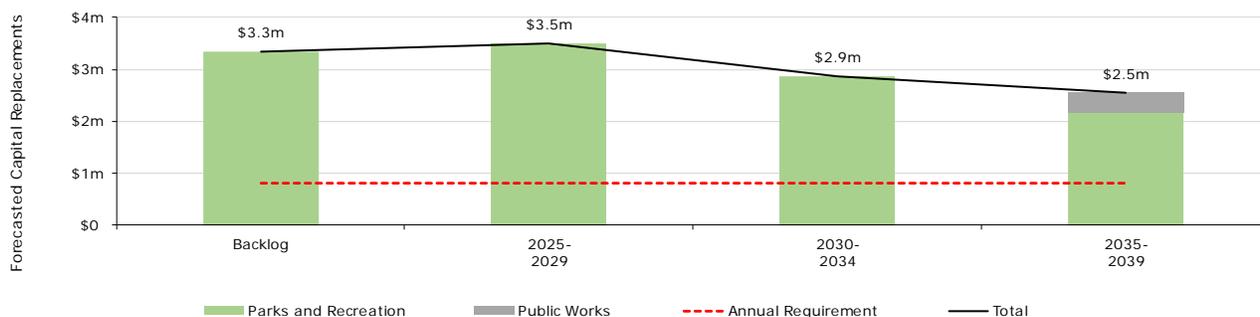
Estimated Useful Life & Service Life

The Estimated Useful Life for Land Improvements assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Parks and Recreation	15	12.7	2.3
Public Works	20	8.7	11.3

Each asset's Estimated Useful Life should 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.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Lifecycle Management Strategies

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

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

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance activities, including tree removals, tree trimming, signage maintenance, playground inspections, and routine park mowing to enhance turf and overall appearance, are often triggered by regular inspections or public feedback. When considering all general daily maintenance, inspections, and tree work in parks, open spaces, and sports fields, the total estimated annual cost is projected to range between $300,000 and $350,000.
Rehabilitation	Rehabilitation typically involves rebuilding or replacing assets that are beyond repair, although it has historically been ad hoc.
Replacement	Replacement is considered when safety issues arise, assets are beyond repair, or parts are no longer available.

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.

This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 35 assets, $2,067,249.
- Blue (5-7): 43 assets, $3,706,269.
- Yellow (8-9): 2 assets, $1,108,802.
- Orange (10-14): 13 assets, $2,331,903.
- Red (15-25): 2 assets, $3,342,623.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
35 Assets	43 Assets	2 Assets	13 Assets	2 Assets
$2,067,249.00	$3,706,269.00	$1,108,802.00	$2,331,903.00	$3,040,730.00
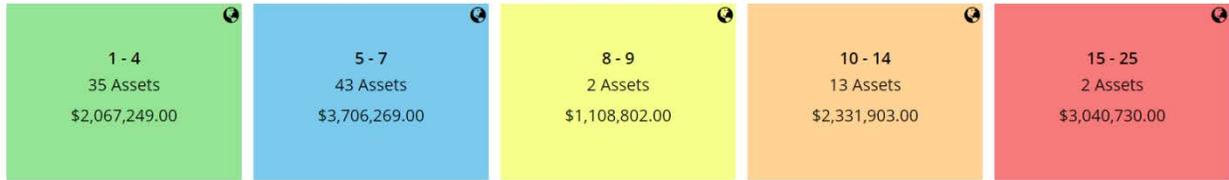
This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Risk Analysis

- Confidence in the current asset data is low, with inconsistencies in tracking and recording.
- Current lifecycle management strategies are largely reactive and recognized as needing review.
- More training is needed on specific Township policies and procedures.
- A significant portion of assets, including playground equipment and structures, are nearing the end of their useful life.
- Significant impacts from climate change are observed on trails, open spaces, and base materials due to stronger storms and changing seasons.
- Not all sites and areas have the capacity to support projected community growth.
- A strong annual investment plan is needed to keep up with lifecycle replacements and repairs. Major projects often rely on grants.

Levels of Service

The following table outlines the performance service indicator for land improvements assets:
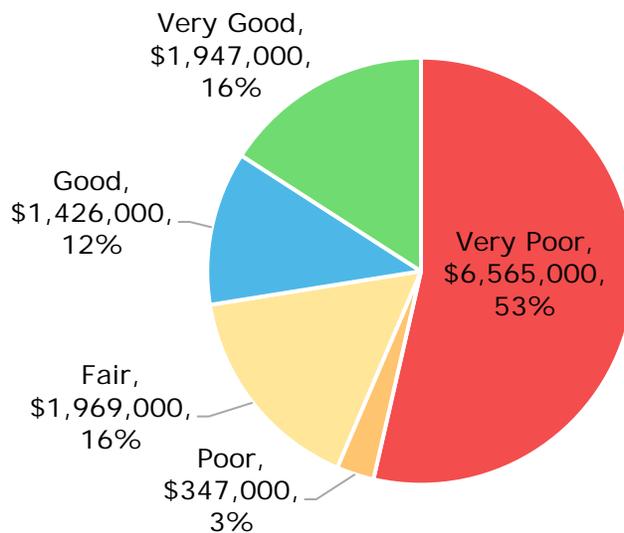
The following tables identify the Township's current level of service for land improvements. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the municipal services supported by land improvements	The Township strives to maintain parkland and trails on a schedule. The Township's goal is to maintain neighbourhood parks once every 7 days, parkettes once every 10 days, sports fields 2 times a week, junior outfields once a week, and diamonds groomed daily when booked.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Quality	Average condition of assets	32%
	% of assets in poor or worse condition	56%

Vehicles

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

- Fire rescue vehicles to provide emergency services
- Pick-up trucks and machines to support the maintenance of the transportation network and address service requests for public works, facility maintenance and parks and recreation
- Light duty vehicles to support operations of Building and By-law services
- Machines and trucks for winter control activities

Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Township's vehicles.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
By-Law	2	CPI	$78,000
Facilities	7	User Defined	$350,000
Fire	21	User Defined	$14,111,000
Parks and Recreation	9	User Defined	$471,000
Public Works	27	CPI	$5,197,000
			$20,206,000

Total Current Replacement Cost: $20,206,318
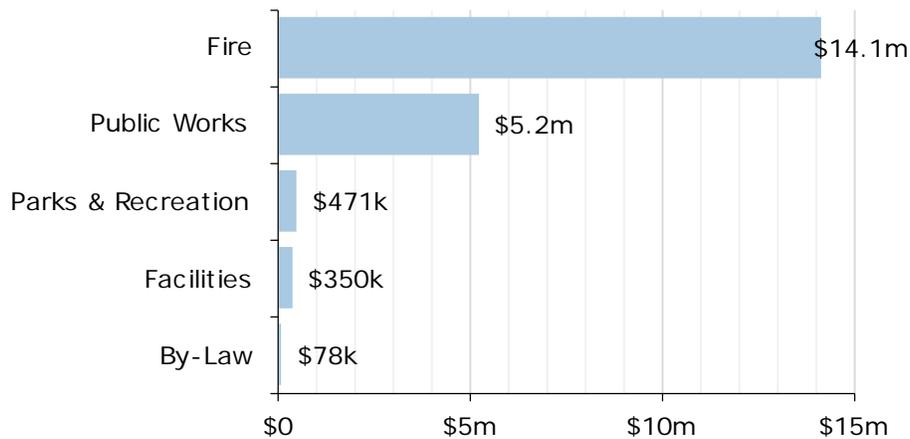
Asset Condition & Age

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.
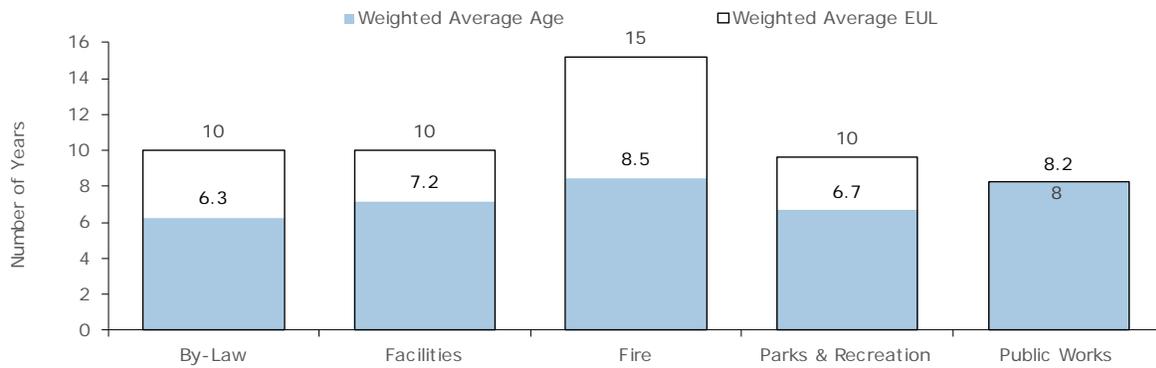
The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.
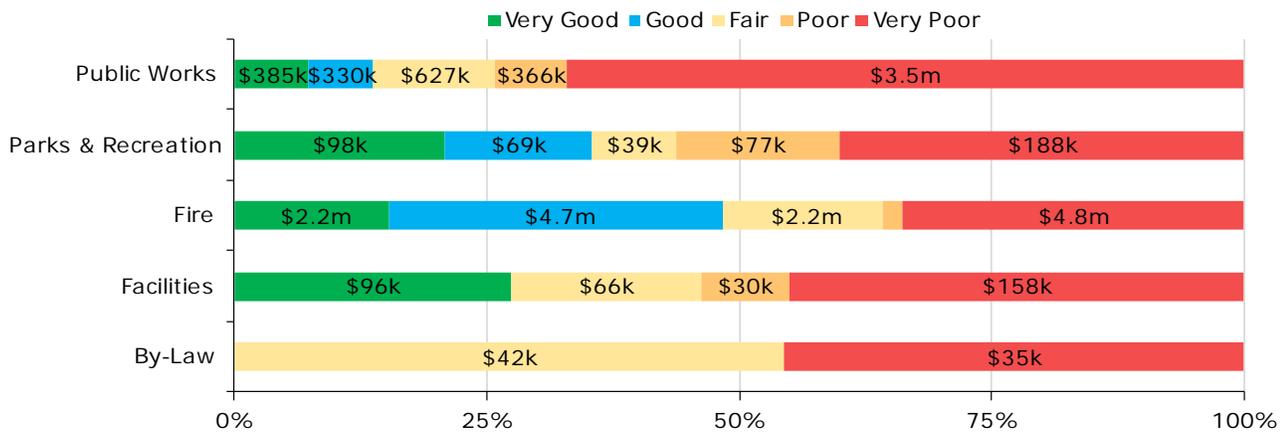
To ensure that the Township's vehicles continue to provide an acceptable level of service, the Township should monitor the average condition of all assets.

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 more confidently. The following describes the Township's current approach:

- Vehicles are assessed annually, with the last assessment performed in 2022. Specific tests for fire pumps and aerial apparatus are conducted annually, with Non-Destructive Testing every five years for specific vehicles.
- Assessments are primarily conducted by internal staff, with some external contractors involved.
- Vehicles are rated using a point scale (Condition I to IV), considering factors like age, kilometers/hours, type of service, reliability, maintenance, and repair costs. A simpler "good, fair, poor" condition scale is also used.
- There are no plans to expand the scope or frequency of these assessments.
- Condition data is crucial for budgeting, particularly for vehicles typically considered for replacement at the 10-year mark.

The Township uses the following condition rating system for Vehicles:

Under 18 Points	Condition I	Excellent
18 to 22 Points	Condition II	Good
23 to 27 Points	Condition III	Qualifies for replacement or reallocation
28 Points and higher	Condition IV	Needs immediate consideration

Estimated Useful Life & Service Life

The Estimated Useful Life for Vehicles assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
By-Law	10	7	3
Facilities	10	7	3
Fire	10-20	9	3
Parks & Recreation	10	7	3
Public Works	8-10	9	0
		7.8	2.4

Each asset's Estimated Useful Life should 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.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Lifecycle Management Strategies

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

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance includes oil changes, tire rotations, minor repairs, and activities specified in service manuals. Light-duty vehicles receive service every 7,500 km, small equipment every 250 hours, large equipment every 500 hours, and snow plows every 12,000 km. Monthly and annual inspections are conducted by firefighters and mechanics.
Rehabilitation	Larger equipment may undergo refurbishments, such as repainting snowplow boxes, but light-duty vehicles do not typically receive rehabilitation.
Replacement	Replacement is considered when repair costs exceed the vehicle's value, after 25 years (20 years frontline, 5 years reserve), or when a low condition rating is received. The capital budget for replacements fluctuates based on annual needs, with the operating budget for maintenance and repairs being consistent year-over-year. There is no contingency budget for unexpected maintenance or replacements.

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.

This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 21 assets, $1,481,632.
- Blue (5-7): 22 assets, $3,492,501.
- Yellow (8-9): 3 assets, $872,984.
- Orange (10-14): 5 assets, $5,333,486.
- Red (15-25): 15 assets, $9,025,715.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
21 Assets	22 Assets	3 Assets	5 Assets	15 Assets
$1,481,632.00	$3,492,501.00	$872,984.00	$5,333,486.00	$9,025,715.00
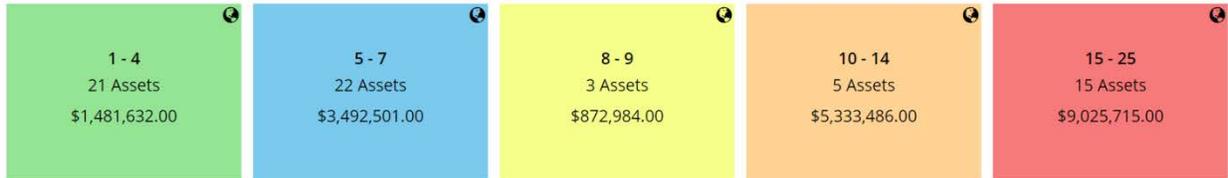
This is a high-level model developed for the purposes of this AMP and Township staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Risk Analysis

- Confidence in the asset data is strong, although there is a need for centralized and standardized data across different groups.
- Current lifecycle management strategies are effective, especially when the 10-year replacement schedule is followed.
- Staff have the necessary knowledge for asset management but may lack the capacity due to current staffing levels and lack of consistency in the Asset Management Coordinator role.
- Previous design and reliability concerns have been addressed, improving future specifications.
- Some vehicles are nearing the end of their useful life, but there are no significant aging concerns.
- Climate change and extreme weather events have a slight impact on vehicles.
- The current fleet does not have the capacity to support projected community growth.
- Further analysis is needed to determine if the current investment level is sufficient to maintain a good state of repair.

Levels of Service

The following table outlines the performance service indicator for vehicles assets:

Very Good, $2,744,000, 13%

Very Poor, $8,635,000, 43%

Good, $5,056,000, 25%

Poor, $765,000, 4%

Fair, $3,007,000, 15%
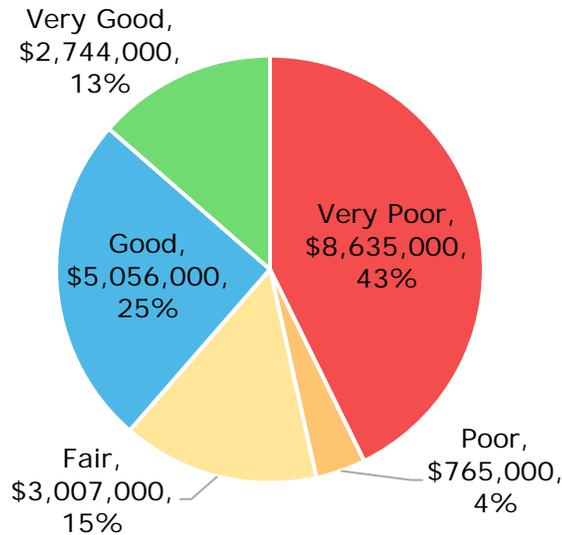
The following tables identify the Township's current level of service for vehicles. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the municipal services supported by vehicles and equipment	The Township has vehicles that support community services, administration, fire services, and parks and recreation.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Quality	% of vehicles in poor or worse condition	47%
	Average condition of vehicles	37%

Machinery & Equipment

Machinery and equipment allow staff to efficiently deliver municipal services to residents. Municipal machinery and equipment are used to support several service areas, including:

- Facilities
- Fire Services
- Administration
- Parks and Recreation
- Public Works

Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Arena	8	CPI	$432,000
Facilities Management	7	CPI	$703,000
Fire	13	CPI	$1,073,000
Furniture & Fixtures	5	CPI	$211,000
General Administration	22	CPI	$1,203,000
Library	9	CPI	$511,000
Parks and Recreation	20	CPI	$528,000
Public Works	13	CPI	$1,067,000
Water	12	CPI	$1,531,000
			$7,260,000

Total Current Replacement Cost: $7,259,851

Segment	Value
Water	$1.5m
General Administration	$1.2m
Fire	$1.1m
Public Works	$1.1m
Facilities Management	$703k
Parks and Recreation	$528k
Library	$511k
Arena	$432k
Furniture & Fixtures	$211k

Asset Condition & Age

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

Legend: ▪ Weighted Average Age ▫ Weighted Average EUL

Segment	Weighted Average Age	Weighted Average EUL
Arena	10	10.2
Facilities Management	8	10.6
Fire	12	12.2
Furniture & Fixtures	10	16.0
General Administration	7	8.5
Library	5.4	8
Parks and Recreation	8	8.8
Public Works	6.9	10
Water	6.1	20

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

Legend: ■ Very Good ■ Good ■ Fair ■ Poor ■ Very Poor

Segment	Very Good	Good	Fair	Poor	Very Poor
Water	$70k	$1.1m	$310k		
Public Works	$39k		$579k	$193k	$240k
Parks and Recreation	$23k	$28k	$173k		$304k
Library	$61k	$63k	$106k	$56k	$225k
General Administration		$327k	$49k	$205k	$622k
Furniture & Fixtures					$211k
Fire			$344k	$324k	$406k
Facilities Management			$254k	$43k	$389k
Arena	$25k		$76k		$331k

To ensure that the Township's machinery and equipment continue to provide an acceptable level of service, the Township should monitor the average condition of all assets.

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 more confidently. The following describes the Township's current approach:

- Machinery and equipment are assessed annually, with more thorough evaluations conducted in the off-season.
- Assessments are conducted by internal staff.
- A "good, fair, poor" condition rating scale is used, based on criteria such as hours on equipment, age, and any safety issues.
- There are no plans to expand the scope or frequency of these assessments.
- Condition data is crucial for prioritizing replacements.

Estimated Useful Life & Service Life

The Estimated Useful Life for Machinery and Equipment assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Arena	8-10	10	0
Facilities Management	7-10	7	<1
Fire	7-18	16	0
Furniture & Fixtures	7-10	16	0
General Administration	7	5	1
Library	7-8	6	1
Parks and Recreation	5-8	9	0
Public Works	7-20	9	0
Water	10-20	5	13

Each asset's Estimated Useful Life should 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.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Lifecycle Management Strategies

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

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance includes tracking hours, regular visual inspections, routine oil changes, and servicing filters. Maintenance frequency depends on hours of service and usage.
Rehabilitation	Rehabilitation may involve getting quotes for overhauls and determining feasibility, though it is typically not conducted due to the risks associated with equipment failure.
Replacement	Replacement is considered when there is significant downtime, safety concerns, or high upkeep and repair costs. Budget allocation is based on asset condition assessments, with contingency budgets set aside for emergency maintenance or replacements.

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.
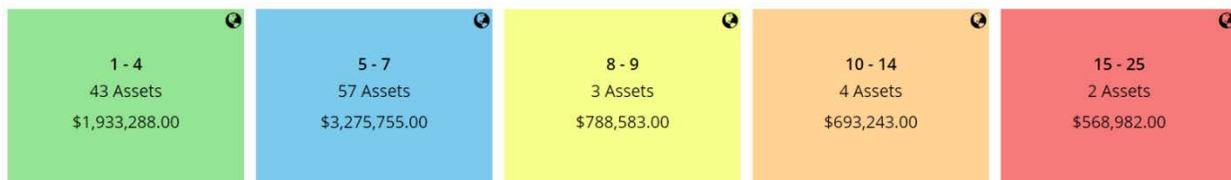
This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 43 assets, $1,933,288.
- Blue (5-7): 57 assets, $3,275,755.
- Yellow (8-9): 3 assets, $788,583.
- Orange (10-14): 4 assets, $693,243.
- Red (15-25): 2 assets, $568,982.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
43 Assets	57 Assets	3 Assets	4 Assets	2 Assets
$1,933,288.00	$3,275,755.00	$788,583.00	$693,243.00	$568,982.00

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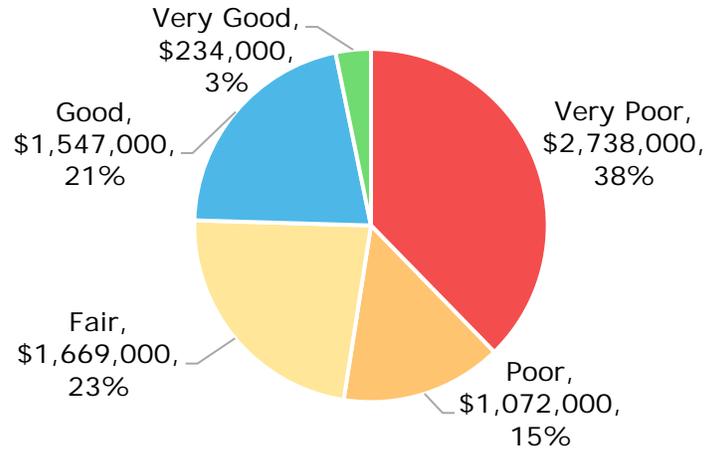
Risk Analysis

- Confidence in asset data is high.
- There is a desire to renegotiate lifecycle management strategies to optimize costs and condition.
- More education and training for staff are needed.
- A significant portion of machinery and equipment is nearing the end of its useful life.
- Climate change impacts the capacity and flow of equipment, affecting service levels.

- The current machinery and equipment do not support projected community growth.
- Investment levels may need to be adjusted to handle extra wear and hours of service on equipment.

Levels of Service

The following table outlines the performance service indicator for machinery and equipment assets:

Very Good, $234,000, 3%
Good, $1,547,000, 21%
Very Poor, $2,738,000, 38%
Fair, $1,669,000, 23%
Poor, $1,072,000, 15%

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the municipal services supported by vehicles and equipment	The Township has machinery and equipment that support community services, administration, fire services, water services, and parks and recreation.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Quality	Average condition of machinery and equipment	34%

Storm Network

The Township is responsible for owning and maintaining a storm network consisting of storm water management facilities and storm sewer mains and other supporting infrastructure.

Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Catch Basins	932	Inflated 2022 Unit Price	$10,195,000
Storm Ponds[4]	30	N/A	N/A
Storm Sewer Mains	32,419	Inflated 2022 Unit Price	$57,577,000
			$67,772,000

Note: Information for the diameter of the storm sewer main is not available for much of the asset segment. Based on known diameters, an average of 375mm was used to determine cost except for the segments that were inspected in 2024. Information on catch basin types (i.e., single, double) is not available. To determine the cost, single catch basins were assumed for the known inventory based on current replacement costs. Storm Ponds are not planned for replacement. They only receive operational treatments.

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[4] Moving forward the rehabilitation of storm wet ponds will be conducted in two phases. Design and approvals year 1 ($50,000 each) followed by construction in year 2 ($300,000 to $400,000 each). These requirements would be considered capital.

Total Current Replacement Cost: $67,772,438
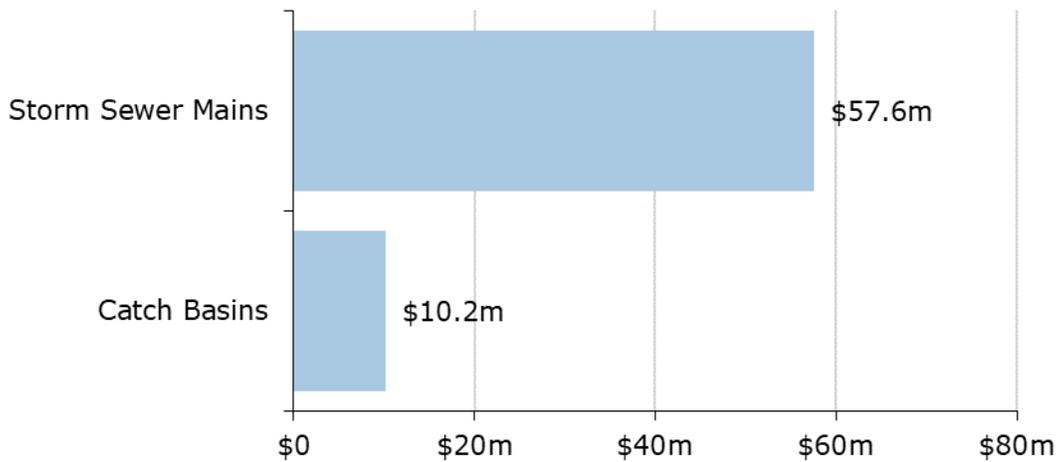
Storm Sewer Mains — $57.6m

Catch Basins — $10.2m

(Horizontal axis: $0, $20m, $40m, $60m, $80m)

Asset Condition & Age

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

Legend: ■ Weighted Average Age □ Weighted Average EUL

	Catch Basins	Storm Sewer Mains
Weighted Average EUL	60	60
Weighted Average Age	20.0	25.3

(Vertical axis: Number of Years, 0 to 70)

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

Legend: ■ Very Good ■ Good ■ Fair ■ Poor ■ Very Poor

Storm Sewer Mains: $10.1m | $26.8m | $9.2m | $10.0m | $1.5m

Catch Basins: $10.2m

(Horizontal axis: 0%, 25%, 50%, 75%, 100%)
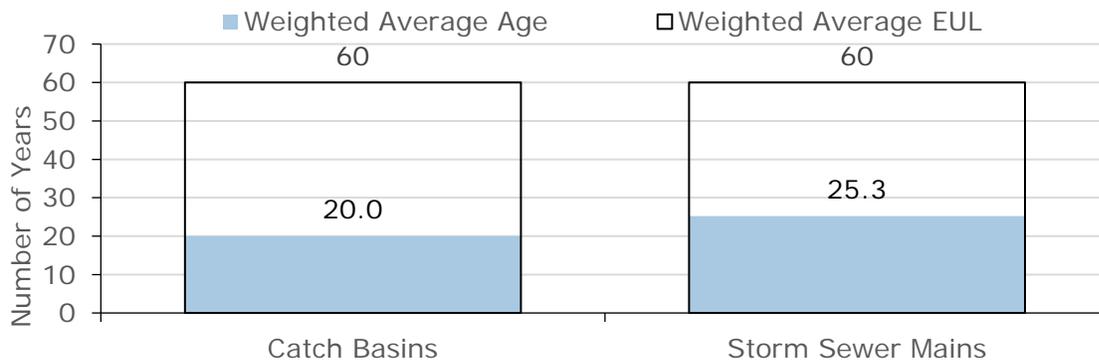
To ensure that the Township's Storm Network continues to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Storm Network.

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 more confidently. The following describes the Township's current approach:

- The Township of Springwater does not have a formal condition assessment process or program in place for most of the storm network. Stormwater Pond assessments are completed annually, inhouse, and are used to determine maintenance needs. The new Municipal Consolidated Linear Infrastructure Environmental Compliance Approvals requirements include operation/ maintenance manuals and annual audits that would be assigned to consultants.
- The Township has started an inspection program using CCTV technology. 4% of the stormwater mains have been inspected so far.

Estimated Useful Life & Service Life

The Estimated Useful Life for Storm Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Catch Basins	60	21	39
Storm Ponds	100	26	74
Storm Sewer Mains	60	25	35

Each asset's Estimated Useful Life should 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.
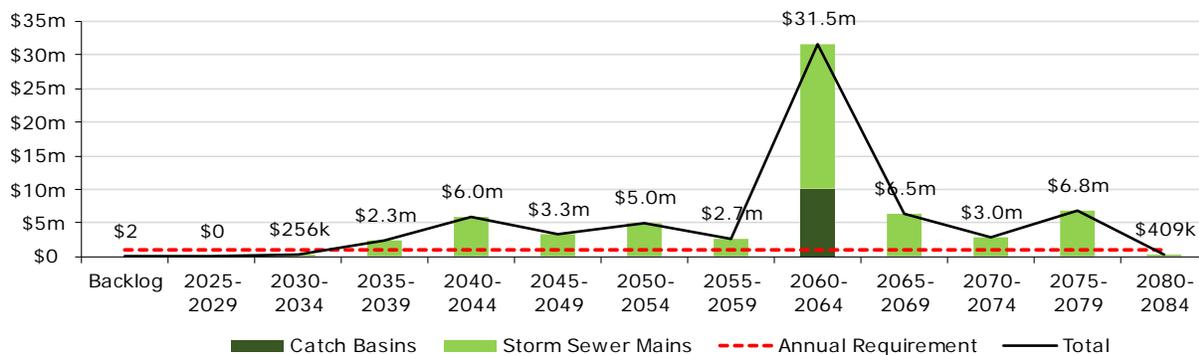
Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance	Currently, there is no formal maintenance strategy for all the assets except the storm ponds.
Rehabilitation	Currently, there is no formal strategy adopted by the Township.
Replacement	Currently, there is no formal strategy adopted by the Township.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.

This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The

assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 1,557 assets, $41,045,107.
- Blue (5-7): 46 assets, $8,440,016.
- Yellow (8-9): 35 assets, $10,237,870.
- Orange (10-14): 10 assets, $5,014,168.
- Red (15-25): 3 assets, $3,035,277.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
1,557 Assets	46 Assets	35 Assets	10 Assets	3 Assets
$41,045,107.40	$8,440,016.00	$10,237,869.64	$5,014,168.19	$3,035,276.95

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

Levels of Service

The following table outlines the performance service indicator for Storm assets:

Pie chart for Storm assets performance service indicator:
- Very Good, $10,084,000, 15%
- Very Poor, $1,540,000, 2%
- Poor, $10,034,000, 15%
- Fair, $9,161,000, 13%
- Good, $36,953,000, 55%
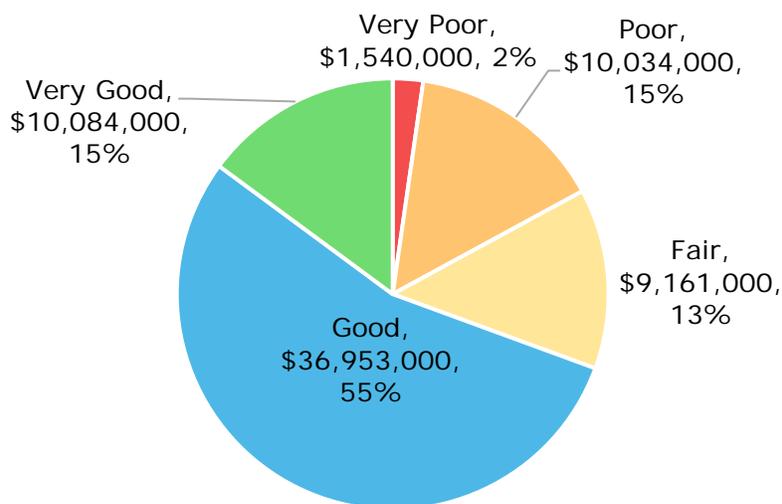
The following tables identify the Township's current level of service for the Storm Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include 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	The settlement areas of Elmvale, Hillsdale, Midhurst, Phelpston and Centre Vespra have stormwater systems comprised of catch basins, stormwater mains and storm ponds. Other areas within the Township are primarily managed by ditches and culverts.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of properties in Township resilient to a 100-year storm	TBD
	% of the municipal storm sewer management system resilient to a 5-year storm	TBD
Quality	% of the stormwater Network that is in good or very good condition	69%
	% of the stormwater Network that is in poor or very poor condition	17%

Analysis of Rate-funded Assets

Rate-funded assets are valued at $313.7 million with 91% of assets that are in fair or better condition. The average annual capital requirement to sustain the current level of service for rate-funded assets is approximately $4.3 million.

Water Network

The water services provided by the Township are overseen by the Public Works Department and the Ontario Clean Water Agency (OCWA).

Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Linear Assets	122,655 m	CPI	$171,700,000
Non-Linear Assets	97	CPI	$40,272,000
			$211,972,000

Note: A Geographic Information System Spatial Joint was utilized to estimate in-service dates for some of the linear assets
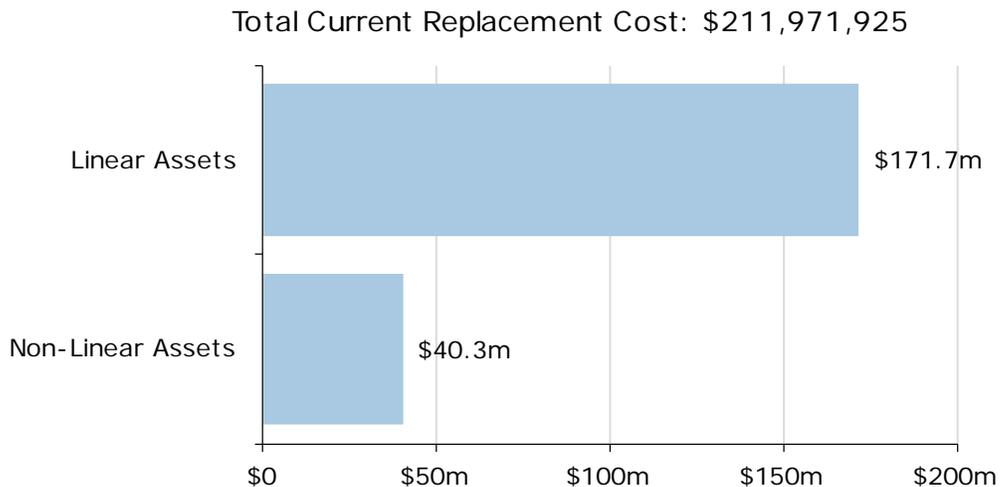
Total Current Replacement Cost: $211,971,925

Asset Condition & Age

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

Weighted Average Age ■   **Weighted Average EUL** □

Chart: Number of Years

- Linear Assets: Weighted Average Age 28.0, Weighted Average EUL 75
- Non-Linear Assets: Weighted Average Age 30.4, Weighted Average EUL 70

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

■ Very Good   ■ Good   ■ Fair   ■ Poor   ■ Very Poor

Non-Linear Assets: $1.6m (Very Good), $18.1m (Good), $12.9m (Fair), $4.2m (Poor), $3.5m (Very Poor)

Linear Assets: $2.6m (Very Good), $144.6m (Good), $22.0m (Fair)
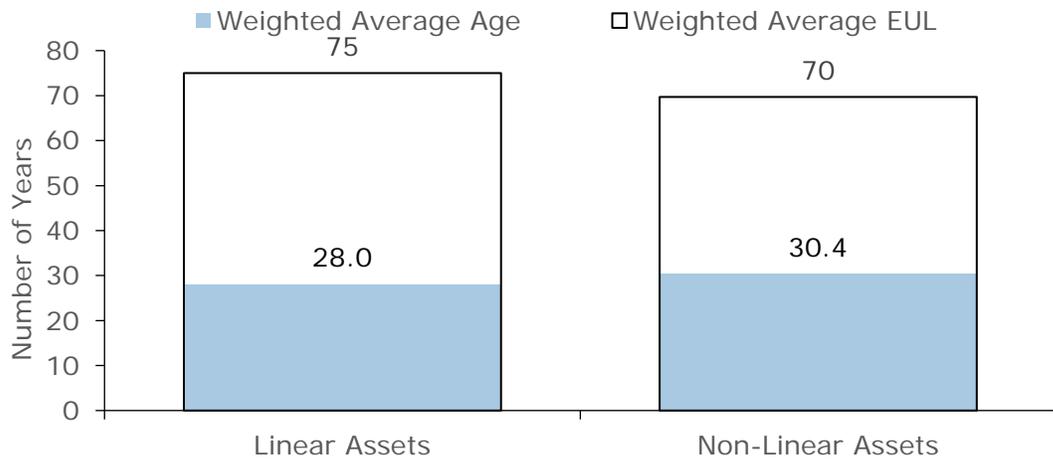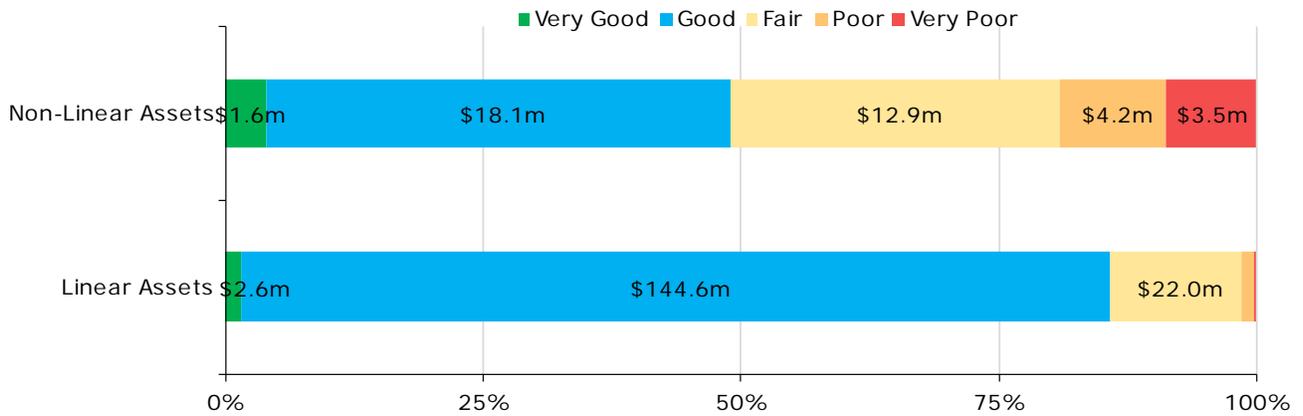
To ensure that the Township's Water Network continues to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Water Network.

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 more confidently. The following describes the Township's current approach:

- Aside from the inspections required under O. Reg. 170/3, there are no formal condition assessment programs in place for the water network.

Estimated Useful Life & Service Life

The Estimated Useful Life for Water Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Linear Assets	75	29	46
Non-Linear Assets	10-100	33	24

Each asset's Estimated Useful Life should 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.
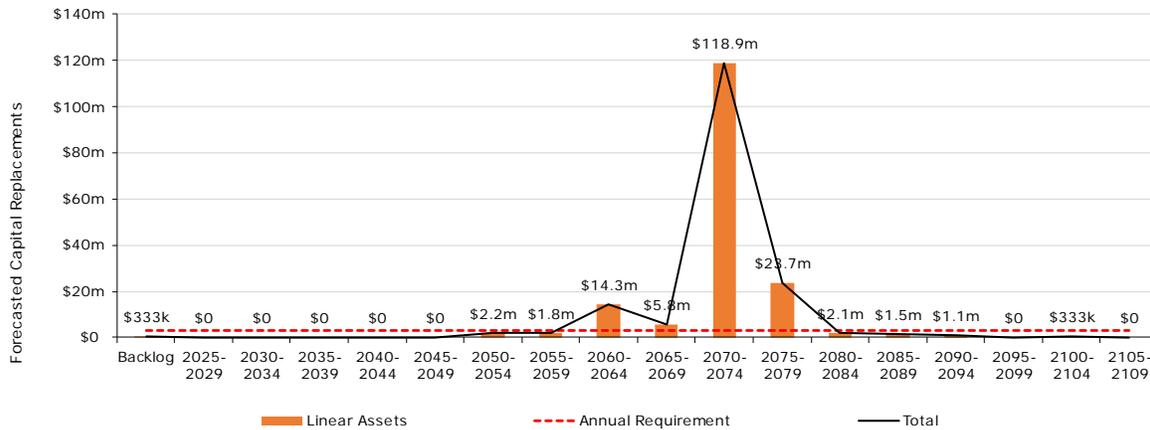
Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance	Currently, there is no formal maintenance strategy for the assets.
Rehabilitation	Currently, there is no formal strategy adopted by the Township.
Replacement	Currently, there is no formal strategy adopted by the Township.

Forecasted Capital Requirements
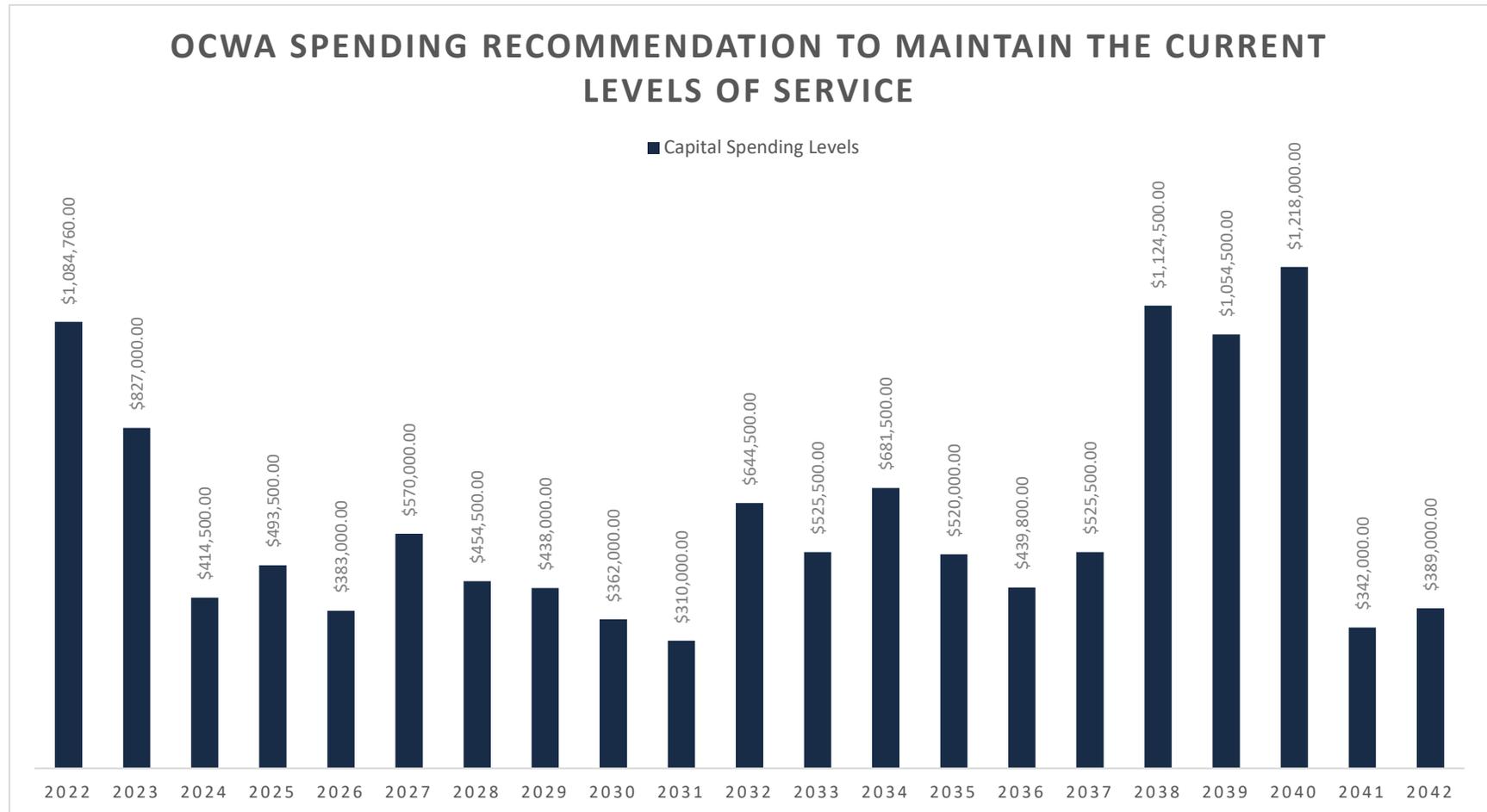
The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Furthermore, Ontario Clean Water Agency (OCWA) has produced a Water and Wastewater Capital Plan report for the Township of Springwater that identifies the spending recommendation to maintain the current levels of service for non-linear assets. The Capital plan addresses 14 water and wastewater systems owned by the Township and operated by OCWA. OCWA's report recommends the following levels of spending on non-linear assets over the next 20 years, with an average annual capital requirement of $0.6 million

OCWA SPENDING RECOMMENDATION TO MAINTAIN THE CURRENT LEVELS OF SERVICE

■ Capital Spending Levels

Year	Capital Spending Levels
2022	$1,084,760.00
2023	$827,000.00
2024	$414,500.00
2025	$493,500.00
2026	$383,000.00
2027	$570,000.00
2028	$454,500.00
2029	$438,000.00
2030	$362,000.00
2031	$310,000.00
2032	$644,500.00
2033	$525,500.00
2034	$681,500.00
2035	$520,000.00
2036	$439,800.00
2037	$525,500.00
2038	$1,124,500.00
2039	$1,054,500.00
2040	$1,218,000.00
2041	$342,000.00
2042	$389,000.00

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.
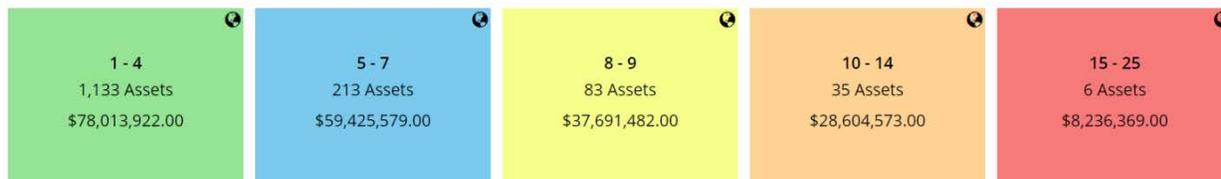
This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 1,133 assets, $78,013,922.
- Blue (5-7): 213 assets, $37,691,482.
- Yellow (8-9): 83 assets, $28,604,573.
- Orange (10-14): 35 assets, $28,604,573.
- Red (15-25): 6 assets, $8,236,369.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
1,133 Assets	213 Assets	83 Assets	35 Assets	6 Assets
$78,013,922.00	$59,425,579.00	$37,691,482.00	$28,604,573.00	$8,236,369.00

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

Levels of Service

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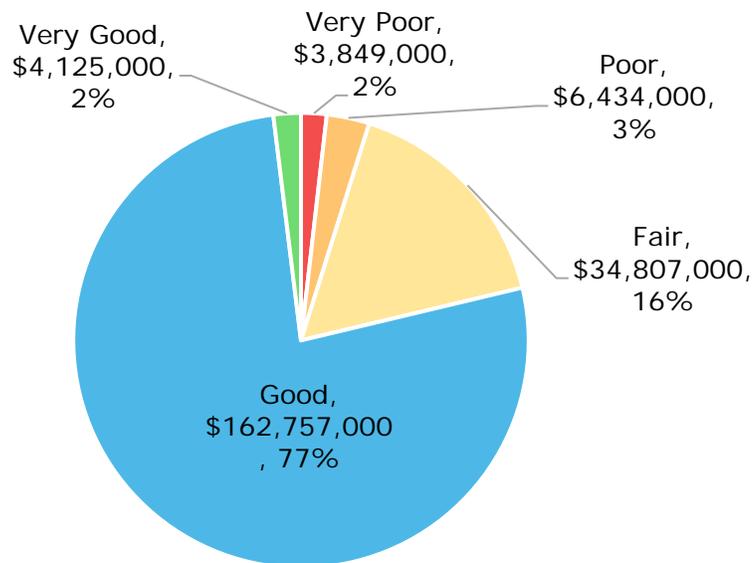
The following tables identify the Township's current level of service for the Water Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the user groups or areas of the Township that are connected to the municipal water system	Appendix B
	Description, which may include maps, of the user groups or areas of the Township that have fire flow	Hydrants are limited to the areas in the Township that are serviced with water. Where hydrants are not available, private cisterns are available for emergency use for fire.
Reliability	Description of boil water advisories and service interruptions	One boil water advisory for the Phelpston Water System, reported on July 30, 2020, due to a testing error

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2018)
Scope	% of properties connected to the municipal water system	Residential: 41.9% Commercial: 1.8%
	% of properties where fire flow is available	Unknown
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
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0

Sanitary Network

The Sanitary services provided by the Township are overseen by the Public Works Department and Ontario Clean Water Agency (OCWA).

Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Linear Assets	46,468 m	User Defined	$65,049,000
Non-Linear Assets	7	CPI	$36,717,000
			$101,766,000
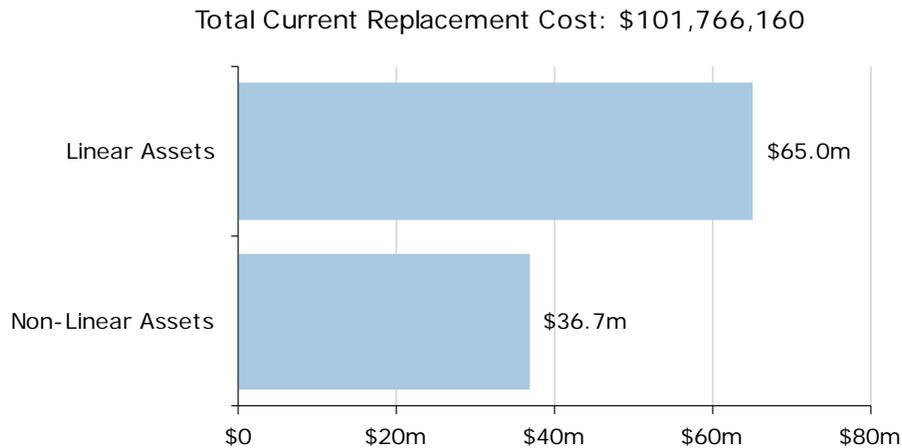
Total Current Replacement Cost: $101,766,160

Asset Condition & Age

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.
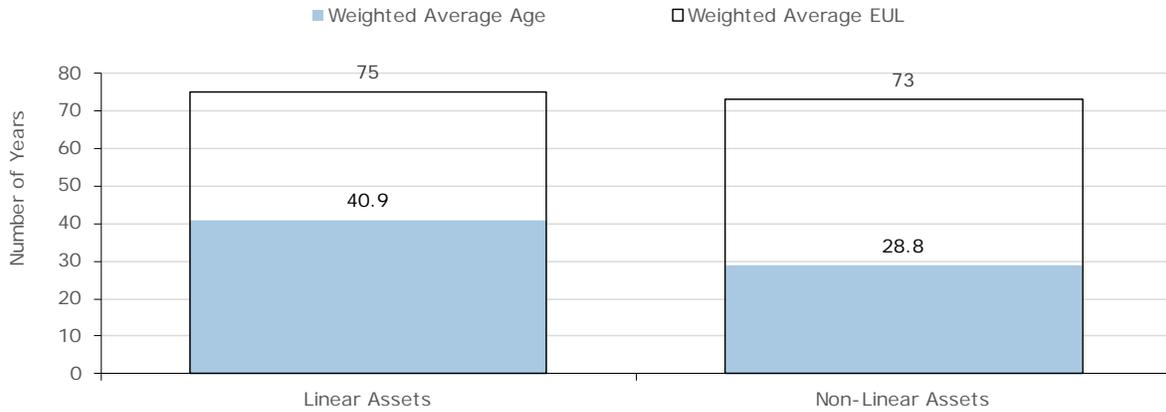
The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

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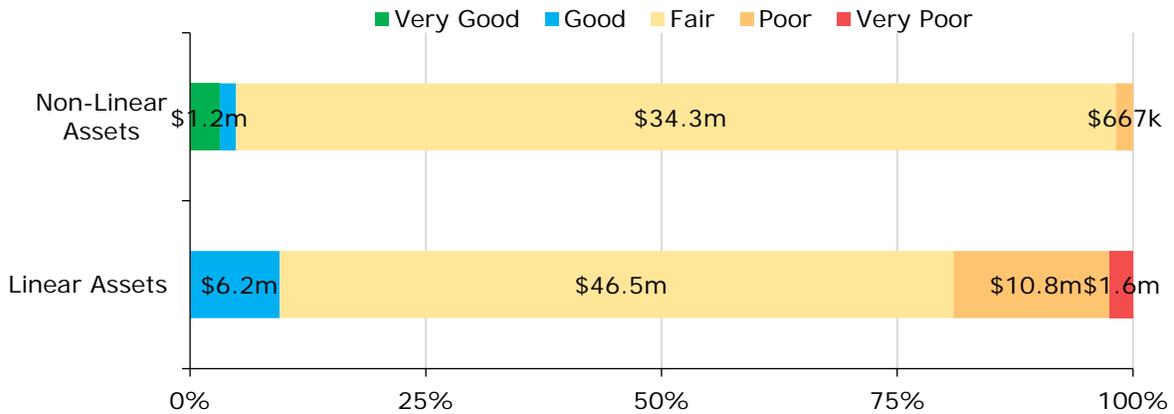
Current Approach to Condition Assessment

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 more confidently. The following describes the Township's current approach:

- Aside from the inspections required under O. Reg. 129/04, there are no formal condition assessment programs in place for the sanitary network.

Estimated Useful Life & Average Age

The Estimated Useful Life for Sanitary Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Linear Assets	75	41	34
Non-Linear Assets	25-75	18	34

Each asset's Estimated Useful Life should 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.

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

Activity Type	Description of Current Strategy
Maintenance	Currently, there is no formal maintenance strategy for the assets.
Rehabilitation/ Replacement	Currently, there is no formal strategy adopted by the Township.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.

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

Furthermore, Ontario Clean Water Agency (OCWA) has produced a Water and Wastewater Capital Plan report for the Township of Springwater that identifies the spending recommendation to maintain the current levels of service for non-linear assets. The Capital plan addresses 14 water and wastewater systems owned by the Township and operated by OCWA. The OCWA report recommends the following levels of spending on non-linear assets over the next 20 years, with an average annual capital requirement of $1.19 million:

OCWA SPENDING RECOMMENDATION TO MAINTAIN THE CURRENT LEVELS OF SERVICE

■ Capital Spending Levels

Year	Amount
2022	$3,854,000.00
2023	$4,056,000.00
2024	$748,000.00
2025	$4,404,500.00
2026	$839,000.00
2027	$375,000.00
2028	$636,000.00
2029	$1,657,000.00
2030	$679,000.00
2031	$456,000.00
2032	$486,000.00
2033	$637,500.00
2034	$636,000.00
2035	$534,500.00
2036	$834,000.00
2037	$820,000.00
2038	$1,393,500.00
2039	$640,500.00
2040	$527,000.00
2041	$354,000.00
2042	$479,000.00

Risk & Criticality

The following figure 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 2024 inventory data. See Appendix C for the criteria used to determine the risk rating of each asset.
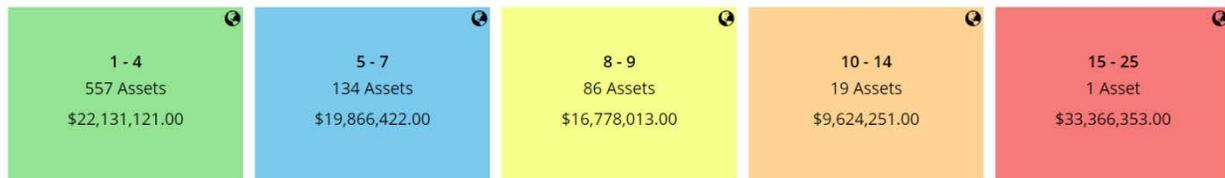
This visual represents a risk matrix for asset management based on the probability of failure (PoF) and consequence of failure (CoF), both scored on a scale of 1-5. The assets are categorized into five color-coded risk groups, each reflecting increasing severity:

- Green (1-4): 557 assets, $22,131,121.
- Blue (5-7): 134 assets, $19,866,422.
- Yellow (8-9): 86 assets, $16,778,013.
- Orange (10-14): 19 assets, $9,624,251.
- Red (15-25): 1 asset, $33,366,353.

The colors represent escalating risk levels:

- Green: Low risk, minimal urgency.
- Blue: Low to moderate risk, needing attention.
- Yellow: Moderate risk, requiring proactive action.
- Orange: High risk, demanding prompt attention.
- Red: Critical risk, requiring immediate intervention.

Assets in the red Critical Risk category can be found in Appendix E.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
557 Assets	134 Assets	86 Assets	19 Assets	1 Asset
$22,131,121.00	$19,866,422.00	$16,778,013.00	$9,624,251.00	$33,366,353.00

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

Levels of Service

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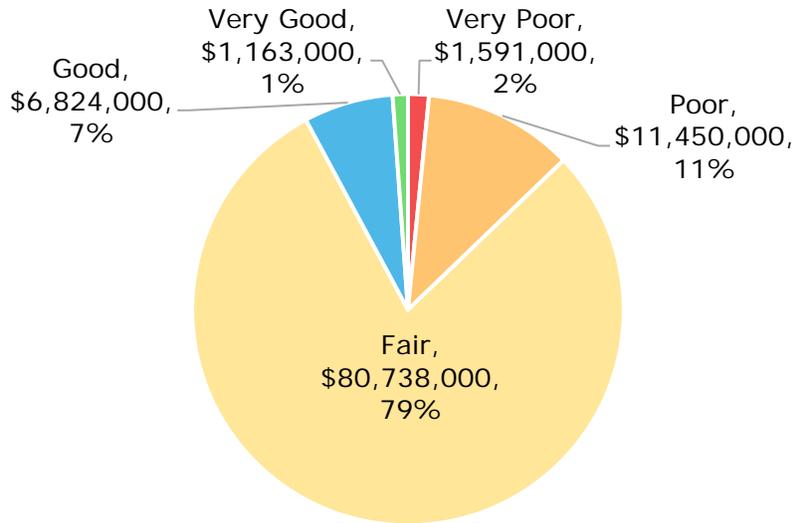
The following tables identify the Township's current level of service for the Sanitary Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Township has selected for this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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the user groups or areas of the Township that are connected to the municipal sanitary sewer system	See Appendix B
Reliability	Description of how combined sewers in the municipal sanitary sewer system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	The Township does not own any combined sewers
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	The Township does not own any combined sewers
	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter the sanitary sewer system from cracks in mains. Indirect connections (i.e., weeping tiles) are not permitted in the Township. In significant rainfall events, sanitary sewers may experience greater volume than the designed capacity. As the Township does not own any combined sewers, it is unlikely that a significant rain event would cause overflow or backup.
	Description of how sanitary sewers in the municipal sanitary sewer system are designed to be resilient to stormwater infiltration	The Township follows engineered design standards that integrate service requirements and land use when constructing or replacing sanitary sewers. The design standards minimize sewage overflows and backups. Newer sanitary mains are PVC piping which reduce potential leaks due to cracking. All sanitary construction and redesign are completed by outsourced engineers specializing in wastewater infrastructure.
	Description of the effluent that is discharged from sewage treatment plants in the municipal sanitary sewer system	Wastewater effluent is discharged from the wastewater treatment plants and may include suspended solids, total phosphorus and biological oxygen demand. The Environmental Compliance Approval (ECA) outlines the effluent criteria for the Township's wastewater treatment plants.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of properties connected to the municipal wastewater system	20.3%
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 sanitary sewer system	0
	# of connection-days per year having sanitary sewer backups compared to the total number of properties connected to the municipal sanitary sewer system	0
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal sanitary sewer system	0

Impacts of Growth

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

Description of Growth Assumptions

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

Growth Management Strategy (2018)

The Springwater Growth Management Strategy (GMS) outlines assumptions regarding future changes in population and economic activity and the impacts these changes may have on infrastructure.

Assumptions on Future Changes:

1. **Population Growth**:

   - The GMS projects significant population growth in the Township of Springwater, increasing from 19,600 in 2016 to an estimated 37,800 by 2031. This growth is driven by the development of residential areas, particularly in the Midhurst Secondary Plan area, which is expected to see substantial population increases due to planned developments.

   - The 2031 population projection of 37,800 exceeds the official forecast of 24,000, indicating a faster growth rate than previously anticipated.

2. **Economic Activity and Employment**:

   - Employment is expected to increase significantly, from 6,200 jobs in 2016 to 11,800 jobs by 2031. This growth is associated with both Employment Serving and Population Serving job categories.

   - Employment Serving jobs will require specialized non-residential land use, often needing larger parcels and proximity to transportation infrastructure, while Population Serving jobs will cater to the local population, occurring in both residential and non-residential designated lands.

Impacts on Infrastructure:

1. **Servicing Capacity**:

   - The projected growth necessitates a review and potential upgrade of existing infrastructure, including municipal water supply, wastewater management, and transportation systems. The GMS identifies the need to ensure that infrastructure development is aligned with intensification and density targets.

   - The infrastructure must support the planned population and employment growth, particularly in areas like Midhurst, which will see significant development.

2. **Land Use and Development**:

   - The GMS outlines the need for sufficient residential and non-residential land to accommodate the projected growth. This includes ensuring that designated green-field areas (areas planned for future development) are developed efficiently to meet the minimum density targets of 32 residents and jobs per hectare.

   - There is an emphasis on planning for compact, transit-supportive development to minimize the strain on infrastructure and to ensure sustainable growth.

3. **Policy Recommendations**:

   - The GMS recommends updating policies to better manage growth, including revisiting settlement area boundaries, enhancing land use designations, and ensuring that employment areas are protected and efficiently used.

   - It also suggests monitoring growth trends and revising land needs assessments every five years to adapt to changes in population and economic activity.

Overall, the GMS underscores the importance of proactive infrastructure planning and policy adjustments to accommodate the anticipated growth in population and economic activity in Springwater, ensuring that the Township develops as a complete, well-balanced, and sustainable community. Currently, the Township is in the process of engaging a third-party consultant for the development of an updated GMS

Current and Potential Growth Map (2022)

The Township of Springwater maintains an updated map of current and potential residential growth which can be viewed on the Township website:
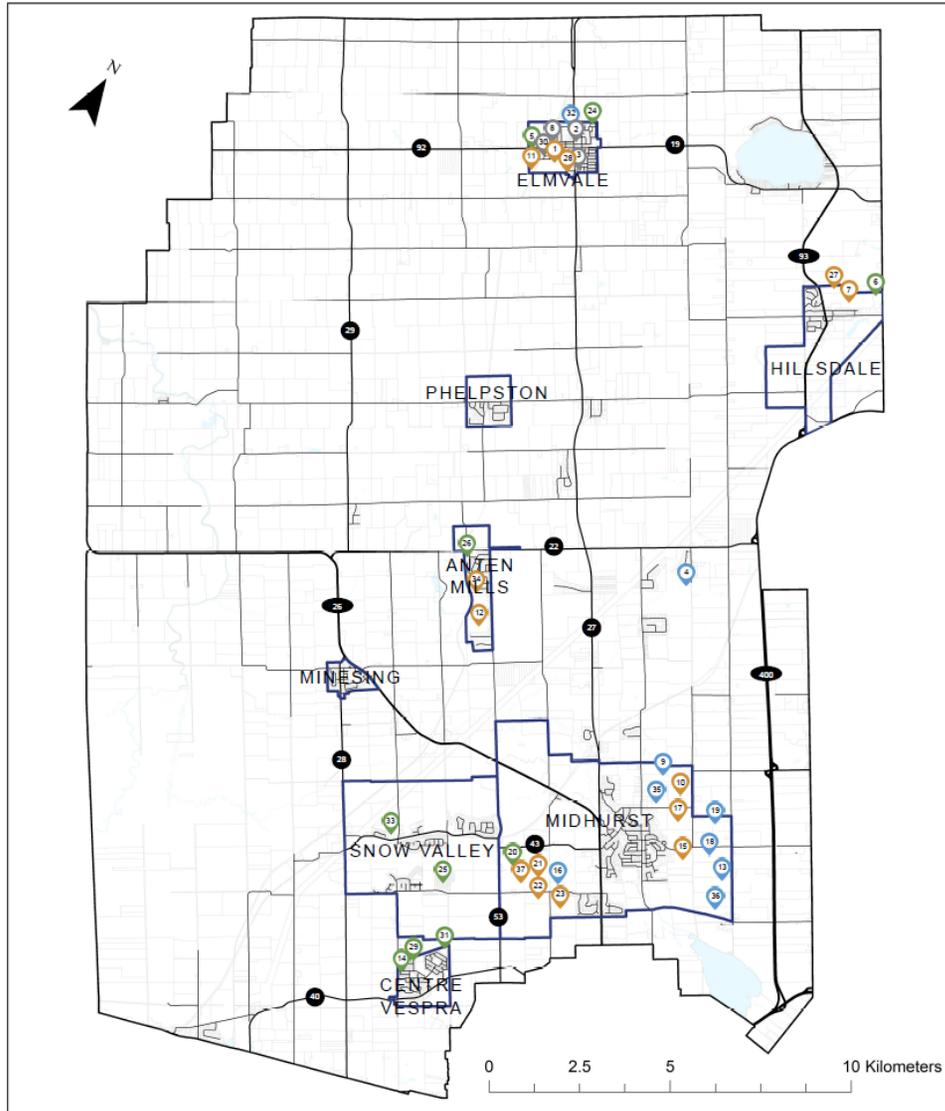
Township of Springwater

Current & Potential Residential Growth Map 2022

1 Wye River Estates
139 Queen St W
Phase 1: 43 SDUs
Phase 2: 28 SDUs

2 Kerr Street Apartments
6 Kerr St
5 Apartment Units

3 Train Avenue
11 Train Ave E
23 Apartment Units

4 Springlakes Adult Lifestyle Community
Fox Farm Rd
800 Single Dwelling Units

5 Elmvale Village Phase 1
175 Queen St W
75 Single Dwelling Units

6 Scarlett Line
114 Scarlett Line
15 Single Dwelling Units

7 Heritage Village
4627 Penetanguishene Rd
233 Single Dwelling Units

8 Sajed
138 Queen St W &
10 Copeland Rd
33 Single Dwelling Units

9 Johns
2212 Russell Rd
217 Single Dwelling Units

10 Midhurst Heights
2290 Russel Rd, 2275 & 2347 Gill Rd & 154 Doran Rd
992 SDUs, 360 Townhomes, 82 Apartment Units, 6 Blocks

11 Elmvale Village Phase 2
175 Queen Street W
81 Single Dwelling Units

12 Estates of Anten Mills
1426 & 1442 Wilson Dr
76 Single Dwelling Units

13 Walton
2872 Old Second S
101 Single Dwelling Units

14 Stonemanor Woods Phase 2
Barrie Hill Rd
323 Single Dwelling Units

15 Midves II
1443 Pooles Rd
45 Single Dwelling Units

16 Carson Trail
1224 Carson Rd
52 Single Dwelling Units, 27 Townhomes & 40 Apartment Units

17 Bell/Rusdor/Coutts
155 Doran Rd & 2572 Russell Rd
569 Single Dwelling Units
341 Townhomes

18 Coutts-Jones
2680 Old Second Rd
488 Single Dwelling Units
293 Townhomes

19 Wright
2536 Old Second S
212 Single Dwelling Units
102 Townhomes

20 Micks
2683 Wilson Rd
342 Single Dwelling Units

21 D. Hickling
1404 Carson Rd
791 Single Dwelling Units

22 A & R Hickling
1361 Carson Rd & 549 Anne St
506 Single Dwelling Units
186 Townhomes

23 Rome
1193 Carson Rd
315 Single Dwelling Units
114 Townhomes

24 Green Meadows
Ritchie Cres
103 Single Dwelling Units

25 Cameron Estates
Seadon Rd
87 Single Dwelling Units

26 Marshall
14 Alexander St
11 Single Dwelling Units

27 Sarjeant Lands
206 Scarlett Line
114 Single Dwelling Units

28 Sunrise Homes
5 & 6 Train Ave W
65 Townhomes

29 Stonemanor Phase 3
3207 Barrie Hill Rd
8 Single Dwelling Units

30 Elmvale Village Condo
175 Queen St W
30 Townhomes & 13 Bungalofts

31 Stonemanor Phase 4
Trail Blvd
47 Single Dwelling Units

32 Sertson
60 Yonge St N
24 Apartment Units

33 Vespra Valley Phase 3
2184 Snow Valley Rd
13 Single Dwelling Units

34 Springwater Development
1256 Wilson Drive
14 Single Dwelling Units

35 Frankcom
124 Doran Road
178 SDUs, 8 Semi, 88 Multi-Residential, 2 Future Units

36 Old Second South
3024 Old Second South
37 Single Dwelling Units

37 Thompson Lands
Calypso Avenue
167 Single Dwelling Units

In Progress | OPA Complete | Draft Plan Approved | Registered Subdivision

Impact of Growth on Lifecycle Activities

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

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

Recommendations

To support the Township of Springwater in achieving sustainable asset management, the following tailored recommendations are proposed for each major asset group:

Road Network

- **Data Refinement:** Ensure the completeness and accuracy of condition data by expanding the assessment program to include sidewalks and streetlights. Prioritize updating the inventory and conducting regular condition assessments, particularly for those segments currently lacking formal evaluation.

- **Lifecycle Strategies:** Implement proactive maintenance strategies for high-condition-rated roads (HCB and LCB) to extend their service life. Consider incorporating a more granular approach to rehabilitation, including microsurfacing and mill-and-pave techniques, based on the condition thresholds outlined in the AMP.

- **Capital Planning:** Align capital expenditure with the recommended lifecycle interventions, ensuring funds are allocated to maximize road network longevity while addressing critical needs identified in the Road Needs Study.

Bridges & Culverts

- **Condition Assessment:** Continue bi-annual Ontario Structure Inspection Manual (OSIM) assessments and address any identified high-risk structures promptly. Explore additional structural assessments or monitoring for bridges nearing the end of their expected service life.

- **Risk-Based Prioritization:** Prioritize investment in bridges with high consequences of failure, particularly those with loading restrictions. Consider targeted rehabilitation to extend the life of these structures and mitigate risk.

- **Lifecycle Management:** Develop a more detailed lifecycle management plan that includes preventative maintenance schedules and early interventions to avoid costly replacements.

Buildings

- **Ongoing Condition Monitoring:** Build on the 2022 Facility Assessment by implementing a regular condition monitoring schedule, focusing on older community halls and high-use facilities. Ensure that upcoming structural integrity studies are completed on larger buildings.

- **Proactive Rehabilitation:** Prioritize rehabilitation activities such as HVAC system upgrades and roof replacements to prevent deferred maintenance from escalating into more significant issues.

- **Climate Adaptation:** Incorporate climate resilience measures into building maintenance and capital planning, particularly for facilities vulnerable to extreme weather events.

Land Improvements

- **Condition Data Enhancement:** Establish a standardized condition assessment protocol for parks, recreation structures, and public works facilities. Regularize visual inspections and implement a formalized rating system to improve data accuracy.

- **Lifecycle Planning:** Develop a systematic approach to the rehabilitation and replacement of assets, particularly those at the end of their service life. Focus on assets with significant public usage or safety implications, such as playground equipment and sports fields.

- **Growth Readiness:** Plan for the expansion and enhancement of recreational facilities to meet the needs of a growing population, ensuring alignment with projected community growth.

Vehicles

- **Condition Assessment Improvement:** Strengthen the vehicle condition assessment program by incorporating external audits and expanding the scope of assessments, particularly for fire and emergency service vehicles.

- **Lifecycle Strategy:** Revise the 10-year replacement schedule based on condition assessment results, focusing on extending the service life of vehicles through enhanced maintenance and timely refurbishments.

- **Fleet Modernization:** Explore opportunities for fleet modernization to improve fuel efficiency and reduce environmental impact, particularly in the context of climate change adaptation.

Machinery & Equipment

- **Comprehensive Assessments:** Implement more thorough, off-season condition assessments for high-use machinery and equipment. Consider integrating advanced diagnostic tools to better predict failures and schedule preemptive maintenance.

- **Replacement Planning:** Establish a more predictable and proactive replacement schedule based on detailed condition assessments, prioritizing machinery that supports essential services such as public works and emergency response.

- **Training and Capacity Building:** Enhance staff training on equipment maintenance and management to improve operational efficiency and extend asset life.

Storm Network

- **Condition Data Collection:** Expand the CCTV inspection program to cover a larger portion of the storm sewer mains The whole network should be assessed every 5-10 years. Develop a formal condition assessment protocol for all stormwater assets, including catch basins and storm ponds.

- **Lifecycle Management:** Introduce a formal lifecycle management strategy for stormwater assets, focusing on regular maintenance of storm ponds and timely rehabilitation of sewer mains.

- **Flood Resilience:** Integrate climate change projections into stormwater management, prioritizing upgrades and enhancements that increase the system's resilience to more frequent and severe storm events.

Water Network

- **Formalize Condition Assessments:** Beyond the required inspections under O. Reg. 170/3, establish a more comprehensive condition assessment program for both linear and non-linear assets within the water network.

- **Proactive Maintenance:** Develop and implement a formal maintenance strategy for water assets to prevent failures and extend service life, particularly in areas with aging infrastructure.

- **Long-Term Capital Planning:** Use the OCWA's Water and Wastewater Capital Plan as a baseline to develop a long-term financial strategy that addresses both linear and non-linear asset needs, ensuring that funding aligns with lifecycle requirements.

- **Assess Underground Infrastructure**: Assess the underground infrastructure and confirm the accuracy of the database that is currently used.

- **Reconcile Point Asset Data**: Reconcile the point asset data between the OCWA database and the Township's database to ensure data consistency and accuracy.

Sanitary Network

- **Condition Monitoring:** Enhance the condition monitoring program for sanitary assets, using a combination of CCTV inspections and other diagnostic tools to identify potential issues before they escalate.

- **Lifecycle Planning:** Implement a lifecycle management strategy that balances maintenance, rehabilitation, and replacement activities, focusing on sustaining service levels and reducing long-term costs.

- **Risk Mitigation:** Prioritize investments in areas with the highest risk of failure, particularly where sanitary systems are critical to community health and safety.

- **Assess Underground Infrastructure**: Assess the underground infrastructure and confirm the accuracy of the database that is currently used.
- **Reconcile Point Asset Data**: Reconcile the point asset data between the OCWA database and the Township's database to ensure data consistency and accuracy.

General Data and Service Level Recommendations

- **Centralized Inventory:** Focus on building and maintaining a centralized asset inventory that integrates data across all asset categories. This centralized system should serve as the single source of truth for all asset data, facilitating more accurate and efficient decision-making across the Township's asset management activities.

- **Proposed Levels of Service:** Begin preparation for establishing proposed levels of service across all asset categories in line with Ontario Regulation 588/17 requirements. Engage with stakeholders to determine realistic and achievable service levels that reflect community expectations, regulatory standards, and the Township's financial capacity.

Appendix A: 10-year Capital Requirements

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

Road Network											
Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Paved Roads - HCB	$2.1m	$12.6m	$5.4m	$4.7m	$6.7m	$16.6m	$9.1m	$11.1m	$14.1m	$8.9m	$401k
Paved Roads - LCB	$1.1m	$1.9m	$6.1m	$3.6m	$10.0m	$3.7m	$7.8m	$15.5m	$19.4m	$11.8m	$929k
Sidewalks	$12.1m	$0	$438k	$587k	$0	$0	$0	$0	$415k	$374k	$0
Streetlights	$9.9m	$0	$11k	$389k	$670k	$97k	$1.1m	$205k	$1.0m	$713k	$0
	$25.2m	$14.5m	$12.0m	$9.4m	$17.4m	$20.4m	$18.0m	$26.7m	$35.0m	$21.8m	$1.3m

Bridges & Culverts											
Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Bridges	$0	$0	$0	$0	$770k	$557k	$825k	$0	$0	$0	$0
Culverts	$0	$1.2m	$277k	$658k	$0	$0	$0	$0	$0	$0	$0
	$0	$1.2m	$277k	$658k	$770k	$557k	$825k	$0	$0	$0	$0

Storm Network											
Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Catch Basins	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Storm Ponds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Storm Sewer Mains	$0	$0	$0	$0	$0	$0	$204k	$0	$0	$52k	$0
	$0	$0	$0	$0	$0	$0	$204k	$0	$0	$52k	$0

Buildings											
Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Administration Centre	$1k	$0	$11k	$1k	$1k	$15k	$1k	$1k	$34k	$12k	$11k
Arena	$1k	$0	$1k	$13k	$77k	$1k	$108k	$1k	$820k	$1k	$5k
Community Facilities	$13k	$0	$26k	$19k	$212k	$23k	$52k	$42k	$139k	$70k	$35k
Fire Stations	$4k	$0	$13k	$4k	$29k	$23k	$17k	$8k	$471k	$24k	$10k
Pavilions & Outdoor Rinks	$14k	$2k	$16k	$17k	$32k	$42k	$25k	$18k	$62k	$45k	$14k
Public Libraries	$15k	$0	$9k	$4k	$16k	$7k	$2k	$6k	$9k	$17k	$86k
Storage Facilities & Yards	$8k	$0	$11k	$4k	$13k	$10k	$31k	$24k	$117k	$10k	$11k
	$57k	$2k	$88k	$63k	$381k	$121k	$236k	$101k	$1.7m	$179k	$172k

Vehicles

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
By-Law	$0	$35k	$0	$0	$0	$0	$42k	$0	$0	$0	$0
Facilities	$158k	$0	$0	$30k	$0	$66k	$0	$0	$0	$96k	$0
Fire	$4.7m	$0	$0	$111k	$265k	$0	$0	$1.5m	$791k	$65k	$0
Parks & Recreation	$148k	$0	$40k	$0	$77k	$39k	$0	$69k	$0	$187k	$0
Public Works	$2.5m	$618k	$355k	$281k	$411k	$300k	$283k	$0	$431k	$2.7m	$307k
	$7.5m	$654k	$395k	$423k	$753k	$405k	$326k	$1.6m	$1.2m	$3.0m	$307k

Machinery & Equipment

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Arena	$331k	$0	$0	$0	$76k	$0	$0	$25k	$0	$0	$0
Facilities Management	$389k	$0	$43k	$0	$254k	$0	$0	$0	$0	$351k	$0
Fire	$406k	$0	$0	$0	$0	$324k	$344k	$0	$51k	$355k	$0
Furniture & Fixtures	$211k	$0	$0	$0	$0	$0	$0	$0	$25k	$0	$0
General Administration	$603k	$19k	$56k	$148k	$49k	$229k	$98k	$0	$622k	$56k	$148k
Library	$106k	$61k	$58k	$56k	$52k	$54k	$63k	$61k	$43k	$123k	$58k
Parks and Recreation	$245k	$40k	$19k	$173k	$28k	$0	$18k	$23k	$25k	$242k	$19k
Public Works	$240k	$0	$0	$0	$193k	$249k	$269k	$39k	$74k	$241k	$0
Water	$0	$0	$10k	$0	$0	$0	$0	$0	$0	$0	$0
	$2.5m	$121k	$187k	$378k	$653k	$857k	$792k	$149k	$840k	$1.4m	$226k

Land Improvements

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Parks and Recreation	$3.3m	$33k	$3.0m	$199k	$123k	$144k	$330k	$134k	$193k	$1.0m	$1.2m
Public Works	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$3.3m	$33k	$3.0m	$199k	$123k	$144k	$330k	$134k	$193k	$1.0m	$1.2m

Water Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Linear Assets	$333k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Linear Assets	-	-	-	-	-	-	-	-	-	-	-
	$333K	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Sanitary Sewer Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Linear Assets	$1.4m	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Linear Assets	-	-	-	-	-	-	-	-	-	-	-
	$1.4m	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix B: Level of Service Maps

Road Network Map
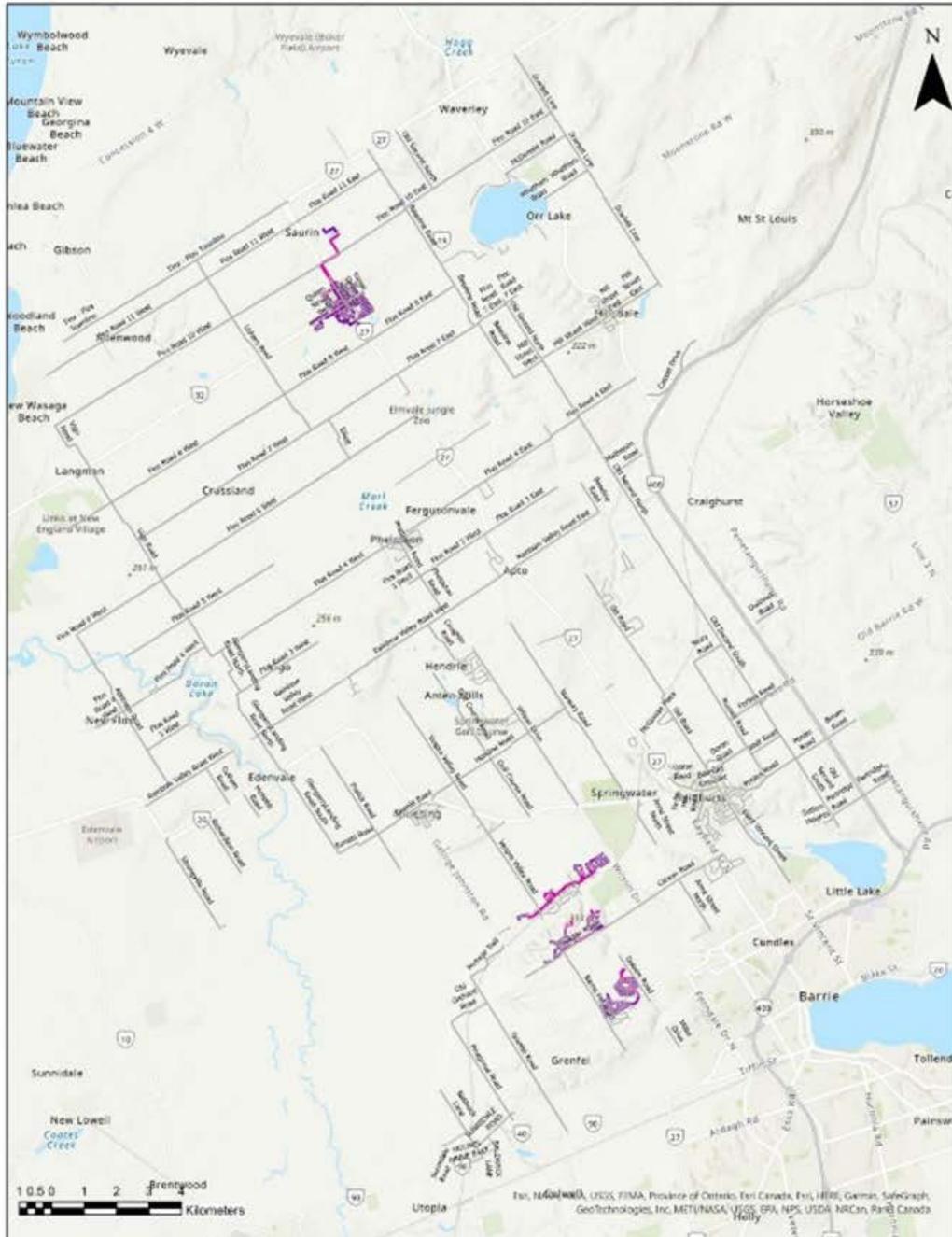
Storm Water Network Map

Water Network Map
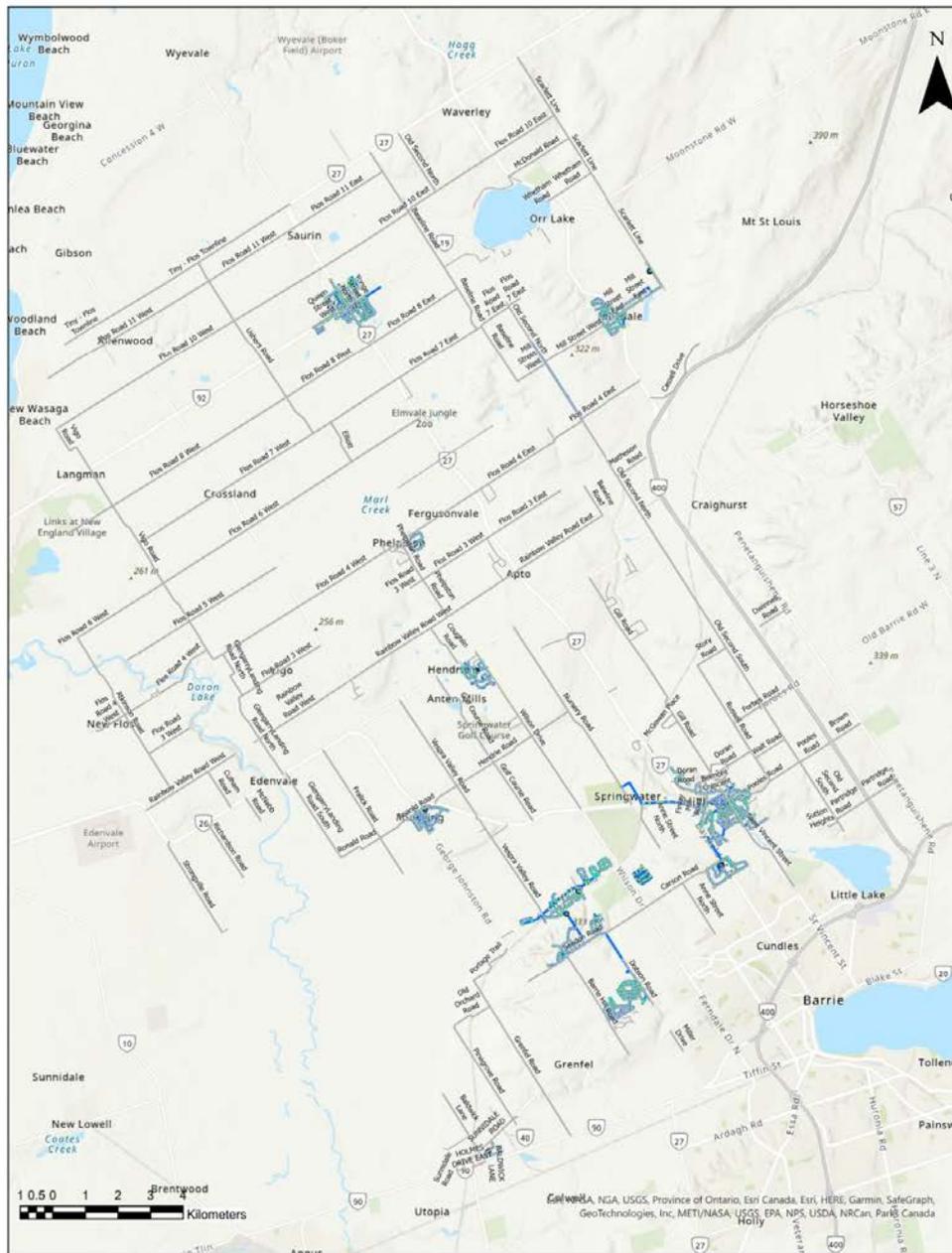
Appendix C: Risk Rating Criteria

Probability of Failure

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
All Assets	Condition	100%	0-19	5
			20-39	4
			40-59	3
			60-79	2
			80-100	1

Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Paved Roads	Economic (65%)	Replacement Cost (100%)	$0-100,000	1
			$100,001-250,000	2
			$250,001-500,000	3
			$500,001-1,000,000	4
			$1,000,001+	5
	Operational (10%)	Road Type (100%)	LCB	3
			HCB	4
	Social (25%)	Average Annual Daily Traffic (100%)	0-100	
			101-250	
			251-500	
			501-1000	
			1000+	
All Other Assets	Economic (100%)	Replacement Cost (100%)	$0-100,000	1
			$100,001-250,000	2
			$250,001-500,000	3
			$500,001-1,000,000	4
			$1,000,001+	5

Appendix D: Condition Assessment Guidelines

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

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

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

Role of Asset Condition Data

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

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

Guidelines for Condition Assessment

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

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

criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project.

There are many options available to the Township to complete condition assessments. In some cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure. In other cases, internal staff may have sufficient expertise or training to complete condition assessments.

Developing a Condition Assessment Schedule

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

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

Appendix E: Critical Risk Assets

Asset ID	AMP Category	AMP Segment	Name
2985	Bridges & Culverts	Culverts	Culvert 202
3007		Bridges	Bridge 16
3009			Bridge 18
10124	Buildings (BCA)	Elmvale Arena	EPDM Roofing
11602	Land Improvements	Parks and Recreation	Hunter Russell Trail - 3 Bridges
11604			Nursery Park Ball Diamonds
11460	Machinery and Equipment	Facilities Management	Landmanager
11496		General Administration	Diamond Financial Software
2220	Road Network	Paved Roads - HCB	Cassell Drive
2229			Saint Vincent Street
2231			Bertram Drive
2235			Willow Landing Road
2239			Ceder Creek Road
2262			Park Trail
2273			Noraline Avenue
2281			Flos Road 4 West
2285			Archer Crescent
2288			Frid Boulevard
2291			Coles Court
2309			Russell Road
2324			Idlewood Drive
2329			Cassell Drive
2342			Kerr Street
2366			Finlay Mill Road
2378			Seadon Road
2381			Huron Street
2408			Golf Course Road
2411			Wilson Drive
2412			Wilson Drive
2420			Flos Road 4 West
2423			Flos Road 10 East
2426			Peter Street
2431			Woods Drive
2435			Gill Road
2446			Anne Street North
2455			Flos Road 4 West
2457			Flos Road 10 East
2458			Flos Road 10 East
2489			Carson Road
2536			Gill Road

Asset ID	AMP Category	AMP Segment	Name
2561			Flos Road 3 West
2582			Scarlett Line
2584			Scarlett Line
2716			Snow Valley Road
2585		Paved Roads - LCB	Scarlett Line
2586			Scarlett Line
2587			Scarlett Line
2614			Old Second South
2625			Baseline Road
2628			Old Second North
2244			Miller Drive
2246			Dobson Road
2300			Flos Road 7 West
2361			Walt Road
2363			Doran Road
2393			Phelpston Road
2394			Phelpston Road
2445			Sunnidale Road
2501			Old Second North
2539			Story Road
2553			Lawrence Avenue
2562			Flos Road 3 West
2568			Flos Road 6 West
2571			Flos Road 10 West
4492		Sidewalks	Albert Street East
2898	Sanitary Network	Non-Linear Assets	Large Plant
6160			Marni Lane
6195	Storm Network	Storm Sewer Mains	Cardinal Crescent
11758			Maria Street
11659			Freightliner
11661			Freightliner
11664		Fire	International
11665			Spartan
11684			Pierce
11660			Freightliner
11667			Freightliner
11670	Vehicles		Freightliner
11671			Freightliner
11677			Freightliner
11683		Public Works	Freightliner
11687			Western Star
11692			Western Star
11693			Western Star
11702			Western Star

Asset ID	AMP Category	AMP Segment	Name
2073	Water Network	Non-Linear Assets	Valves & Chambers
2087			Valves & Chambers
2091			MIDHURST Elevated Storage Tank
2109			MINESING Elevated Storage Tank
2112			MIDHURST Elevated Storage Tank
7725		Linear Assets	148