Asset Management Plan

Town of Tillsonburg

2024

This Asset Management Plan was prepared in conjunction with Town of Tillsonburg staff:

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

Key Statistics

Replacement cost of asset portfolio
$362.4million

Replacement cost of infrastructure per household
$42,669 (2021)

Percentage of assets in fair or better condition
67%

Percentage of assets with assessed condition data
78%

Annual capital infrastructure deficit
$5.7 million

Recommended timeframe for eliminating annual infrastructure deficit
20 Years

Target reinvestment rate
2.53%

Actual reinvestment rate
0.94%

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Executive Summary

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

Scope

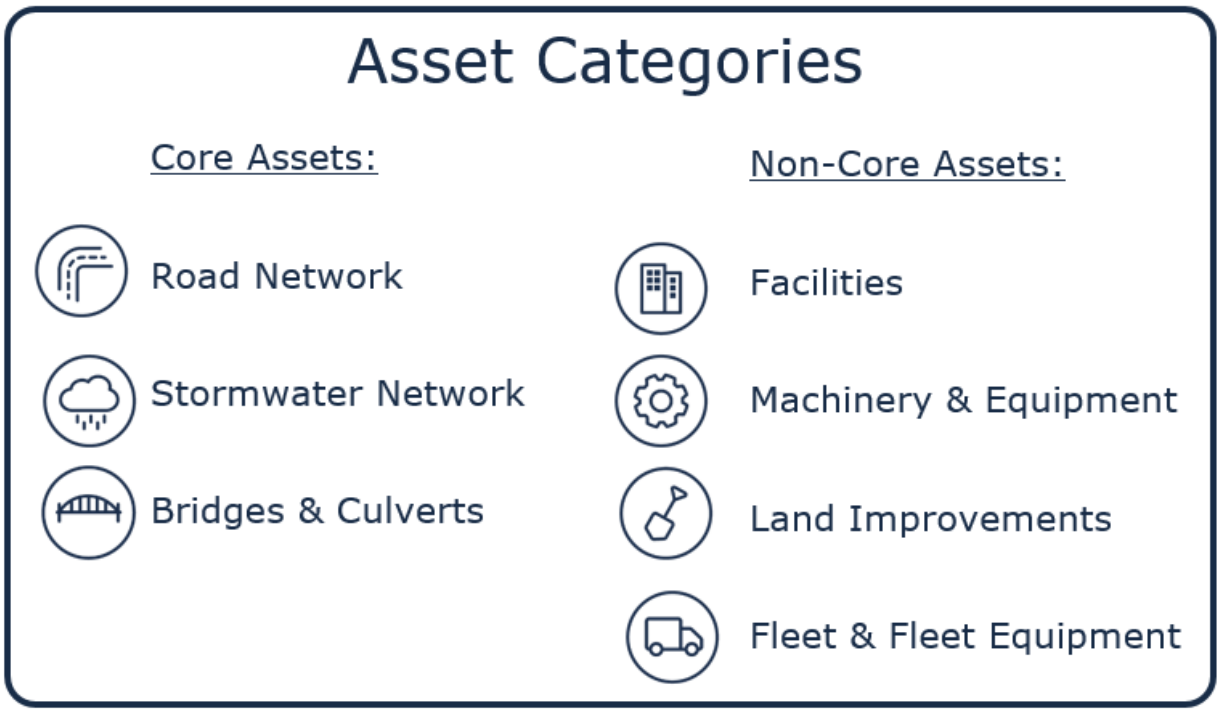
This Asset Management Plan (AMP) identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Town can ensure that public infrastructure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

The 2022 AMP encompassed only core infrastructure. This AMP now also includes non-core assets, with the current replacement value differential as follows:

Category	2022 AMP Current Replacement Value (CRV)	2024 AMP Current Replacement Value (CRV)
Road Network	$160,046,326	$157,763,035
Bridges & Culverts	$20,700,000	$30,933,500
Stormwater Network	$51,643,070	$57,420,013
Facilities	N/A	$95,060,744
Fleet & Fleet Equipment	N/A	$11,217,834
Machinery & Equipment	N/A	$1,702,541
Land Improvements	N/A	$6,393,350
Technology & Communication	N/A	$1,939,593
Total	**$232,389,396**	**$362,430,610**

The CRVs for this AMP are based on 2022 yearend data.

This AMP includes the following asset categories:



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

Findings

The overall replacement cost of the asset categories included in this AMP totals $362.4 million. Sixty-seven (67%) of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for seventy-eight (78%) of assets. For the remaining twenty-two (22%) 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, bridges & culverts, and facilities) 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 Town's average annual capital requirement totals $9.1 million. Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately $3.4 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $5.7 million.

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 Town. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources.

Recommendations

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

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

- Review data on a regular basis to update and maintain a complete and accurate asset register
- Where applicable, develop condition assessment strategies with a regular schedule
- Review and update lifecycle management strategies
- Develop and regularly review short- and long-term plans to meet capital requirements
- Measure current levels of service and identify sustainable proposed levels of service

1 Introduction & Context

Key Insights

The Town of Tillsonburg is located within the County of Oxford which is in southwestern Ontario

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 Town's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management

An asset management plan is a living document that should be updated regularly to inform long-term planning

Ontario Regulation 588/17 outlines several key milestone and requirements for asset management plans in Ontario due in July 2022, 2024, and 2025. This plan meets the 2024 requirements.

1.1 Tillsonburg Community Profile

Census Characteristic	Town of Tillsonburg	Ontario
Population 2021	18,615	14,223,942
Population Change 2016-2021	17.3	5.8
Total Private Dwellings	8,494	5,929,250
Population Density	838.6/km^2	15.9/km^2
Land Area	22.2 km^2	892,411.76 km^2

The Town of Tillsonburg is located 50 kilometres east of the City of London in Southwestern Ontario. The Town is surrounded by large amounts of farmland and Lake Erie to the south.

The region was settled in 1825 by newcomers from Massachusetts, and the village settlement was originally called Dereham Forge. In the mid-19th century, the municipality began to industrialize with a municipal water system developed that would provide power to a sawmill, planning mill, and tannery industries among others. By 1872, the Village was incorporated as the Town of Tillsonburg, and innovative developments continued with the first telephone established by 1885 and electric power available by 1912.

Today, the Town centre is active with a mall and several big box stores. Farming continues to be an important industry for the Town. Historically, the Town has experienced average population growth (i.e., 2011 to 2016, Town of Tillsonburg 3.6% vs Province of Ontario 4.6% growth) however between 2016 and 2021 the Town's population grew significantly (17.3%) especially in comparison to the Provincial growth rate (5.8%) over the same period.

The Town of Tillsonburg owns and manages a robust asset portfolio including roads, bridges & culverts, storm network, facilities, vehicles, machinery & equipment, land improvements, and various information technology assets. Water and wastewater assets are managed by the Town of Tillsonburg, however, are owned by the County of Oxford. Consequently, these asset classes are not included in this AMP.

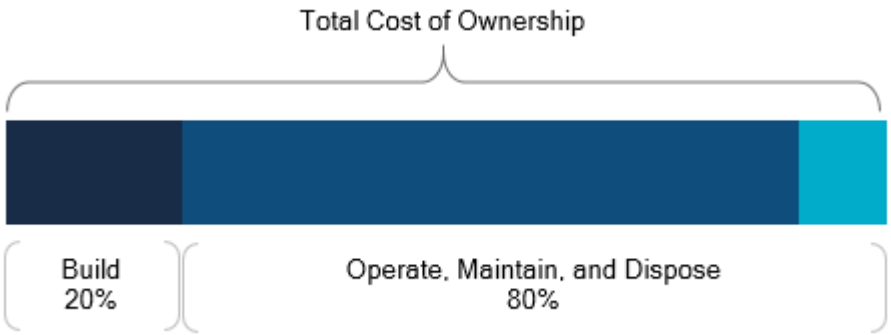
Risk-based project prioritization is essential for capital planning since major infrastructure projects are heavily reliant on the availability of grants. Staff intend to support continuous growth within the Town by investing in critical infrastructure and advancing their asset management program.

1.2 An Overview of Asset Management

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

Managing assets involves various activities beginning with asset acquisition, transitioning to asset maintenance and rehabilitation decisions, and ending with disposal decisions.

Often, asset acquisition costs are a primary consideration to lifecycle decisions. However, when reviewing total cost of ownership, operation, maintenance, and rehabilitation activities account for most cost throughout an asset's lifecycle and can significantly impact its performance, risk, and total cost of ownership. Generally, the acquisition of capital assets accounts for only 10-20% of their total cost of ownership. The remaining 80-90% derives from operations, maintenance, and rehabilitation. This report focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.



Asset lifecycle cost costs can (and often do) span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. This report and the analysis completed is critical to this planning, and an essential element of broader asset management program.

The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan. This should be supplemented by a long-range financial plan and a multi-year budgeting framework.

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

1.2.1 Asset Management Policy

An asset management policy represents a statement of the principles guiding the Town'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 Town adopted their Asset Management Policy on May 27th, 2019, in accordance with Ontario Regulation 588/17. The Policy outlines the Town's commitment to managing their assets with improved accountability and transparency using consistent standards that reflect the Town's present and future needs.

The Policy outlines four key themes to be applied to their asset management decisions, these are:

- Forward Thinking: A comprehensive approach to investment planning that considered the assets entire lifecycle alongside local factors (i.e., demographics, economics) and where possible uses innovation in technology, services, and practises.
- Planning Investment in Infrastructure: Informed infrastructure planning with clear priorities that ensure the provision of core public service while, where possible, promoting other social and economic benefits.
- Transparency: Decisions supported by evidenced, with supportive information provided to the public where permitted.
- Environmentally Conscious: Infrastructure decisions will seek to minimize environmental impacts and be resilient to the effects of climate change.

1.2.2 Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the activities required to meet these objectives. It provides greater detail than the

policy on how the Town plans to achieve asset management objectives through planned activities and decision-making criteria.

Several of the recommendations throughout this report highlight specific actions and practices that are expected to improve the Town of Tillsonburg's Asset management practices, internal capacity, cognizance, and asset decisions. Thus, these recommendations serve informally as an Asset Management Strategy and provide a framework of planned activities to operationalize and support the delivery of the asset management objectives.

1.2.3 Asset Management Plan

The asset management plan (AMP) presents the outcomes of the Town'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 Town to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

1.2.4 Strategic Plan Alignment

ISO 55000 defines asset management as the "*coordinated* activity of an organization to realize value from assets". Understanding what interventions, the Town's asset require, the timing and cost of those interventions, and the risks held are central to preserving assets so that they can be used to deliver value. Using infrastructure assets to deliver value requires an understanding of what is valued—commonly this is reflected by the asset owner's goals and objectives. In the case of the Town of Tillsonburg, the 2021-2030 Community Strategic Plan outlines the Town's vision, mission, goals, and progress measurements. Through the identification of strategic goals, asset management practices and decisions can be aligned to support strategic goal advancement.

The process of aligning an organization's strategic plan and asset management activities delivered by staff is referred to by the Institute of Asset Management (IAM) as the "line of Sight". Having a "line of sight" provides staff with an understanding of the purpose of their actions and why they are needed.

The Town of Tillsonburg's most recent Community Strategic Plan provides a roadmap for municipal projects, priorities, and initiatives that seek to identify, advance, and champion the Town's vision, mission, corporate values, and strategic goals. Key details from the Strategic Plan are as follows:

Vision: A Vibrant and engaged community built on partnerships and entrepreneurial spirit.

Mission: Excellence in local government by providing efficient and effective municipal services.

Corporate Value: Serving our Community and Working as one team.

The plan also identifies five strategic goals. These goals and their asset management applications are outlined below:

Strategic Goal	Asset Management Applications
Lifestyle and amenities for a balanced lifestyle	Asset management supports long-term strategic decisions based on the best available data and information. This supports sustainable management of infrastructure that performs reliably and provides foundational contributions to a good quality of life.
Excellence and accountability in government	Excellence in governance requires reliable information that can support prudent decision making. The development of an AMP enhances the quality, extent, and reliability of asset information and data which supports sound governance.
Attract and retain a diverse range of businesses	Just like residents, businesses rely on the Town's infrastructure for smooth operations. Asset management supports reliable infrastructure delivery and thereby advances this strategic goal.
Accommodate and support sustainable community growth	Growth requires infrastructure, including the management of existing, and an understanding of the costs to sustainably fund the Town's infrastructure. An AMP works to identify the long-term costs and assess the Town's current investment levels, which can help determine changes required to support the Town's existing and expected future population.
Effective infrastructure that supports connectivity	Traditional connectivity is heavily reliant on the road and bridge network. The AMP improves the access to data about these assets and this supports stronger analysis to identify interventions to support the network and their estimated cost.

The Community Strategic Plan also identified a series of metrics to evaluate the performance of the established goals. Many of these indicators are also reflected as Level of Service (LOS) metrics in this AMP under the respective asset categories.

Asset Management Success Factors

It takes considerable time and resources to develop an AMP and associated Asset Management Program. Implementing an AMP requires resources to support ongoing implementation, review, update, and continuous improvement efforts. The International Infrastructure Management Manual (IIMM) identifies three (3) critical factors to success in asset management program implementation. These factors are detailed below alongside examples of how the Town of Tillsonburg is demonstrating the success factors and considerations for continuous improvement:

1 Governance and Leadership: To implement an AMP significant resources and cooperation across an organization are required; typically requiring leadership from the top.

Current Success:

- The Town of Tillsonburg recognizes the importance of asset management and accordingly in early 2019 created a permanent position for an Asset Management Coordinator.
- In 2023, asset management was moved under Finance in the corporate structure.
- The Town of Tillsonburg's project team for this AMP had considerable involvement from the Town's Asset Management Coordinator with support from other leadership staff, including:
    - Director of Finance
    - Director of Operations and Development
    - Manager of Engineering
    - Manager of Public Works
    - Director of Recreation, Culture, and Parks
- The Town's Strategic Plan directly identifies the importance of an AMP in the advancement of the Town's goals. For example, the AMP is directly referenced in the Strategic Directions supporting the Lifestyle and Amenities, Connectivity and Transportation goal. Further, the AMP provides key information to support, evidence, and bolster the Town's other goals.

Continuous Improvement Considerations:

- Work towards embedding asset management into everyday practices and decisions so that it remains an integral part of decisions.

- Identify any training requirements to support staff in developing their asset management knowledge.

2 Involving the Whole Organization: asset management is a practice that many people within an organization affect, and that necessitates significant coordination. Asset requirements must be understood and directly considered when developing budgets, operational practices must support lifecycle maximization, capital projects require long-term cost considerations and coordination, and all decisions must seek to align with strategic objectives.

Current Success:

- In addition to the senior leadership involved in the AMP development, additional staff were directly consulted and involved. This includes:
    - Asset Management Coordinator
    - Manager of Public Works
    - Manager of Engineering
    - Manager of Parks and Facilities
    - IT Project Manager
    - Facilities Supervisor
    - Parks and Cemetery Supervisor
    - Fleet Technician
    - GIS Technician/Transit Coordinator

Continuous Improvement Considerations:

- Work with staff to disseminate asset management information across the organization, especially to operational staff who may not have been involved in the AMP's development.
- Work to help staff understand the asset management "line of sight", how their contributions relate to and affect asset management, and why they are needed.

3 Resourcing the Asset Management System: Sufficient and appropriately trained staff and system resources with the capacity to manage data, convey information, and align processes and systems is critical to the success of asset management.

Current Success:

- The Town recognizes the importance of investing in staff training and resourcing and accordingly has registered 7 staff members in various training programs including:
    - NAMS+ Professional Certificate in Asset Management Planning
    - Citywide Asset Training

    - MFOA Levels of Service Workshops
    - MFOA Asset Management Seminars

Continuous Improvement Considerations:

- Align asset management training investments with operational needs. For example, if the intention is to improve asset management data practices focus on training specific to data management.
- Ensure infrastructure focused staff have the skills and training needed to utilize the asset management program.
- Review existing asset and information management systems to ensure they provide appropriate and valuable outputs. If not, explore what adjustments may be feasible to deliver stronger data and information outputs.

1.3 Key Concepts in Asset Management

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

1.3.1 Lifecycle Management Strategies

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

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

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

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

Depending on initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation, but at some point, replacement is required. Understanding what effect these activities will have

on the lifecycle of an asset, and their cost, will enable staff to make better recommendations.

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

1.3.2 Risk Management Strategies

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

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

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

1.3.3 Levels of Service

A level of service (LOS) is a measure of what the Town 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 Town as worth measuring and evaluating. The Town measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (roads, bridges and culverts, 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 Town 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 Town's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For the Town's core asset categories (roads, bridges and culverts, and 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 Town has determined the technical metrics that will be used to determine the technical level of service provided. These metrics can be found in the Levels of Service subsection within each asset category.

Current and Proposed Levels of Service

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

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

1.4 Ontario Regulation 588/17

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

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

2019

Strategic Asset Management Policy

2022

Asset Management Plan for Core Assets with the following components:

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

2024

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

2025

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

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

1.4.1 O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2024. Next to each requirement a page or section reference is included in addition to any necessary commentary.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1.1 - 5.2.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1.1 - 5.2.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.1.3 - 5.2.3	Complete
Condition of assets in each category	S.5(2), 3(iv)	4.1.2 – 5.2.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.1.2 – 5.2.2	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.1.6 - 5.2.6	Complete
Current performance measures in each category	S.5(2), 2	4.1.6 - 5.2.6	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.1.4 - 5.2.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix B	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	6.1-6.2	Complete

2 Scope and Methodology

Key Insights

This asset management plan includes eight (8) categories

The source and recency of replacement costs impacts the accuracy and reliability of the asset portfolio’s valuation.

Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life

2.1 Asset Categories Included in this AMP

This asset management plan for the Town of Tillsonburg 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 asset categories.

The AMP summarizes the state of the infrastructure for the Town'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
Road Network
Bridges & Culverts
Stormwater Network
Facilities
Fleet & Fleet Equipment
Machinery & Equipment
Land Improvements
Technology & Communication

2.2 Deriving Replacement Costs

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

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

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost Inflated User Defined Costs tends to be fairly accurate as well, provided that the cost being inflated is relatively recent. 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 Town incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.3 Estimated Useful Life and Service Life Remaining

The estimated useful life (EUL) of an asset is the period over which the Town 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 Town can determine the service life remaining (SLR) for each asset. Using condition data and the asset's SLR, the Town can more accurately forecast when it will require replacement. The SLR is calculated as follows:

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

2.4 Reinvestment Rate

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

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

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

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

2.5 Deriving Asset Condition

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

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the Town'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.

3 Portfolio Overview

Key Insights

The total replacement cost of the Town's asset portfolio is $362.4 million

The Town's target re-investment rate is 2.53%, and the actual re-investment rate is 0.94%, contributing to an expanding infrastructure deficit

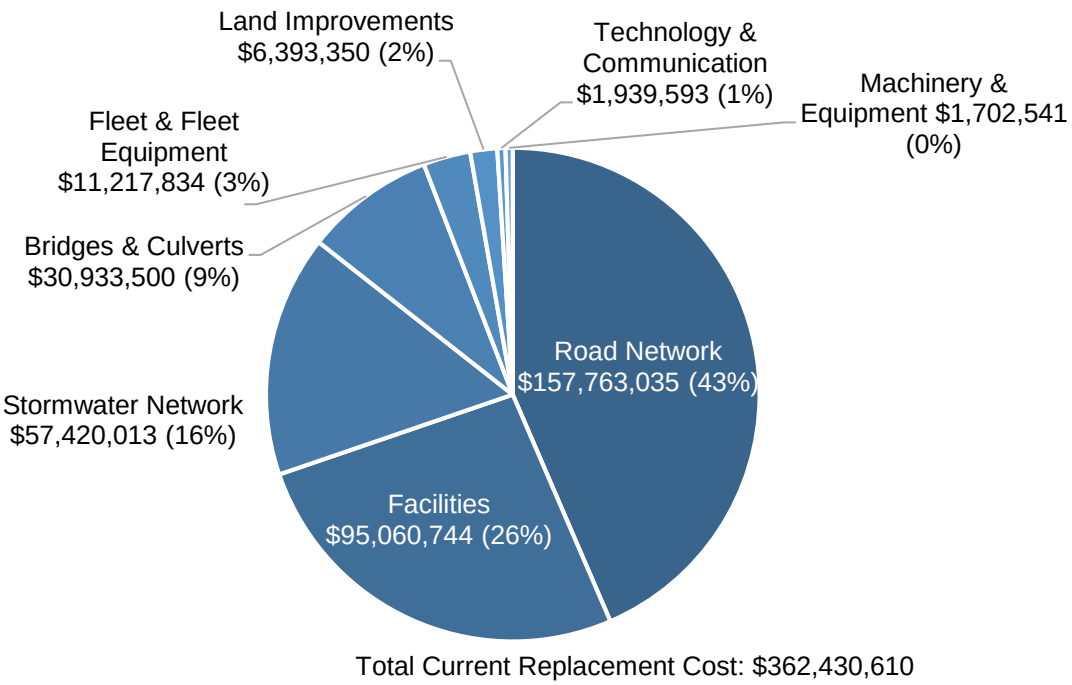
67% of all assets are in fair or better condition

26% of assets are projected to require replacement in the next 10 years

Average annual capital requirements total $9.1 million per year across all assets

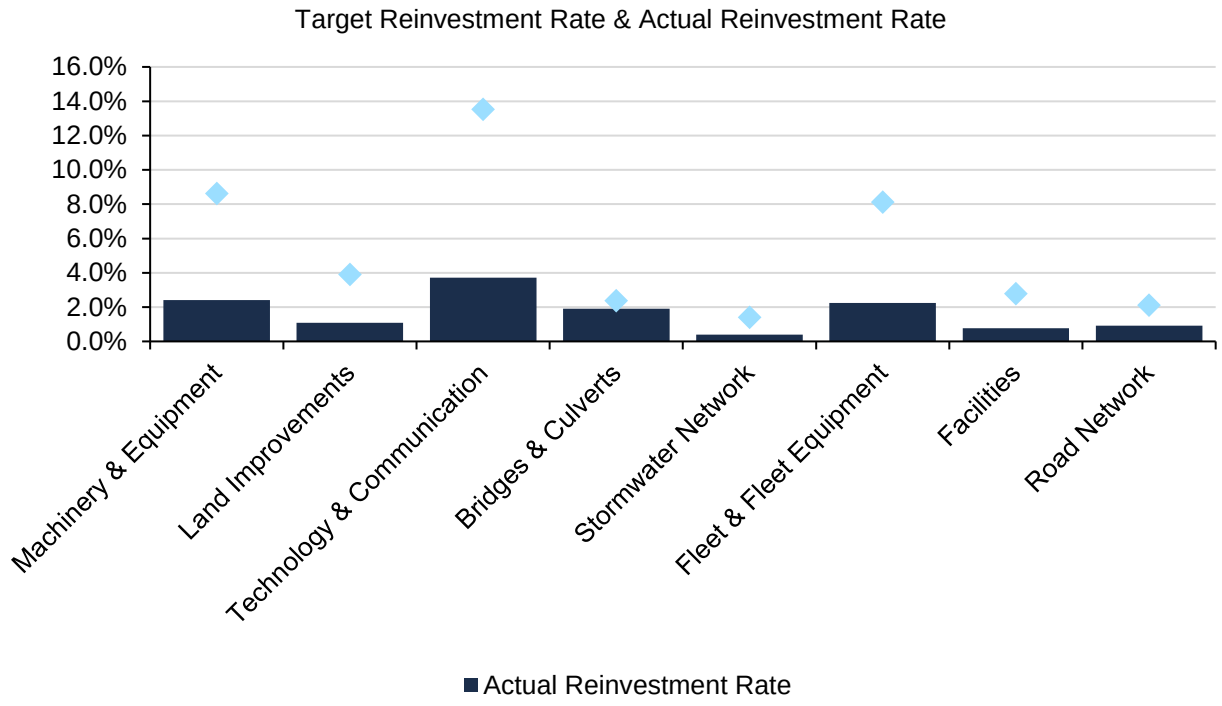
3.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of $362 million based on inventory data from 2022. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.



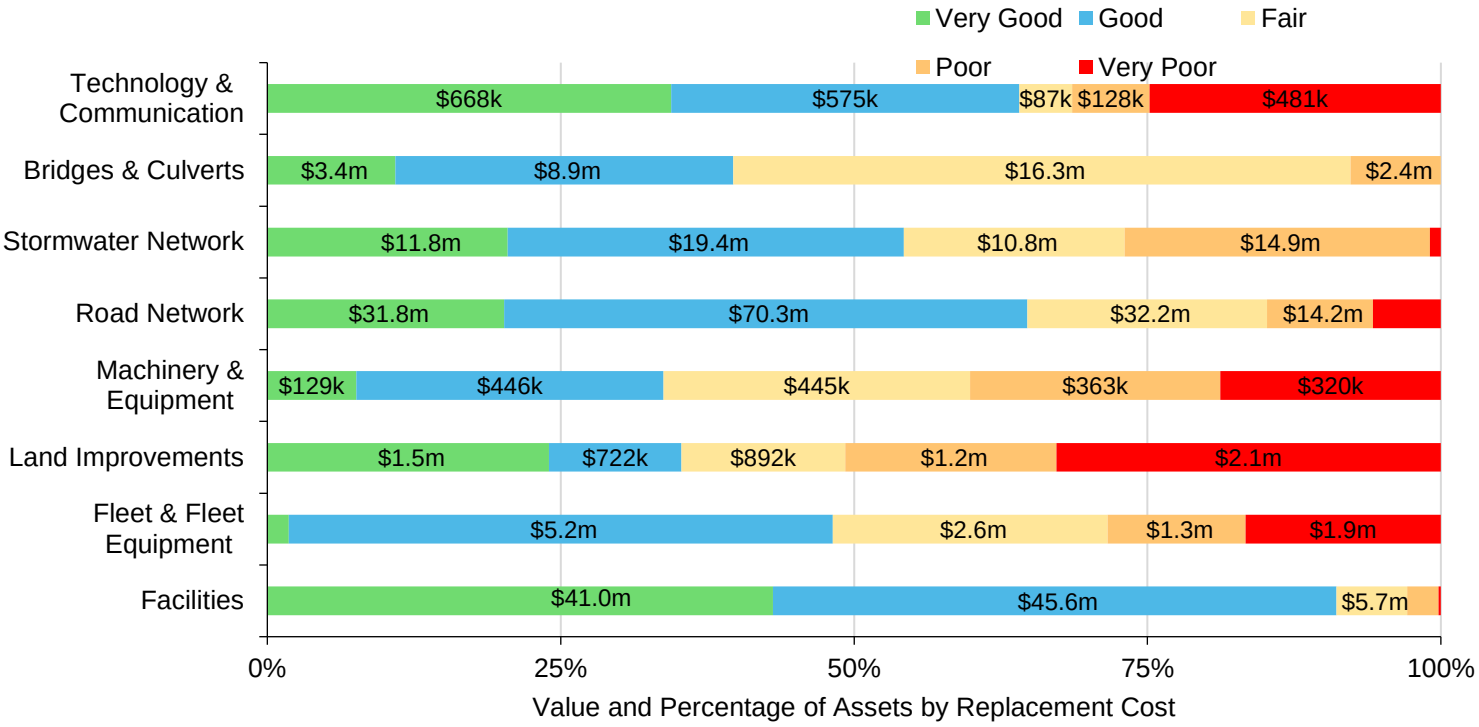
3.2 Target vs. Actual Reinvestment Rate

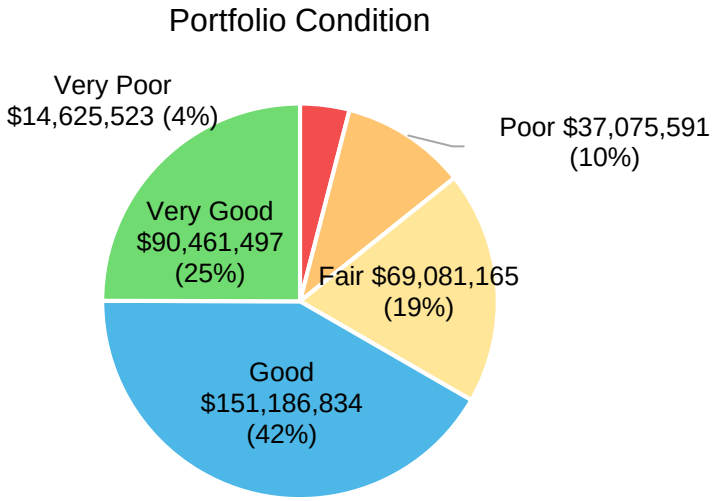
The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Town should be allocating approximately $9.1 million annually, for a target reinvestment rate of 2.53%. Actual annual spending on infrastructure totals approximately $3.4 million, for an actual reinvestment rate of 0.94%



3.3 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 67% of assets in Tillsonburg are in fair or better condition. This estimate relies on both age-based and field condition data.



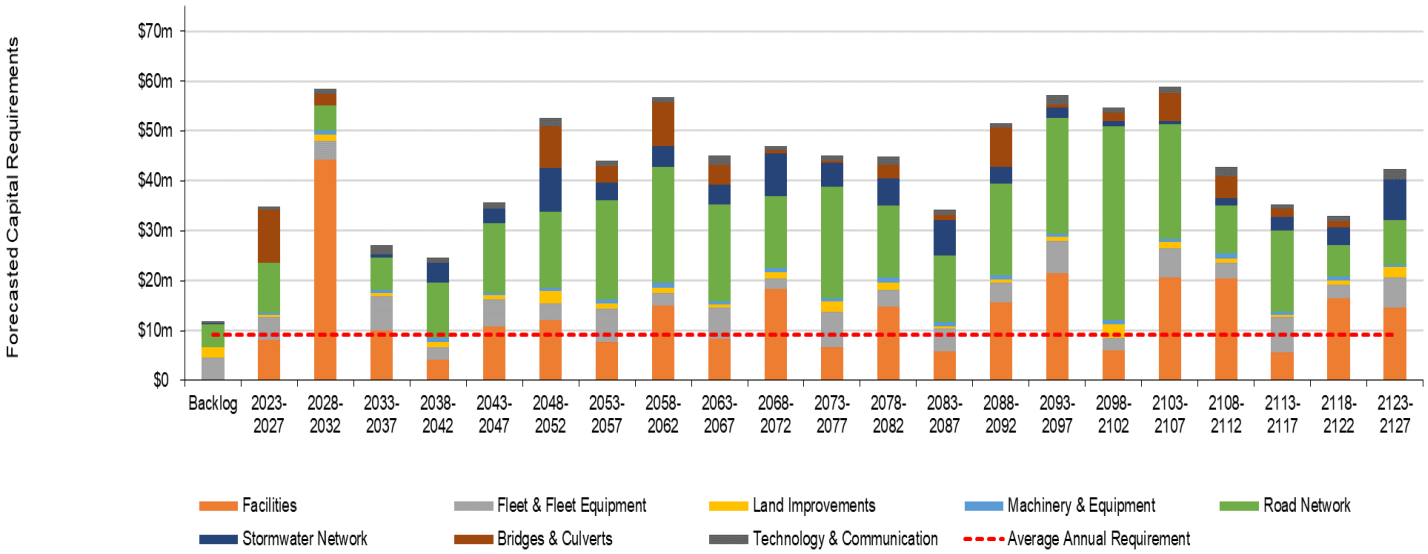


This AMP relies on assessed condition data for 78% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	Paved Roads	100%	2021 PCI Assessments
Bridges & Culverts	Bridges	100%	2023 OSIM Report
	Culverts	100%	2023 OSIM Report
Storm Water	All	0%	N/A
Facilities	All	96%	2021 BCA
Fleet & Fleet Equipment	All	100%	Staff Assessments
Machinery & Equipment	All	36%	Staff Assessments
Land Improvements	All	17%	Staff Assessments
Technology & Communication	All	0%	N/A

3.4 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 Town can produce an accurate long-term capital forecast. The following graph identifies capital requirements over the next 100 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



4 Assets Analysis

Key Insights

The total replacement cost of the Town's asset portfolio is $362.4 million

67% of assets are in fair or better condition

The average annual capital requirement to sustain the current level of service for the Town's asset portfolio is approximately $9.1 million

Critical assets should be evaluated to determine appropriate risk mitigation activities and treatment options

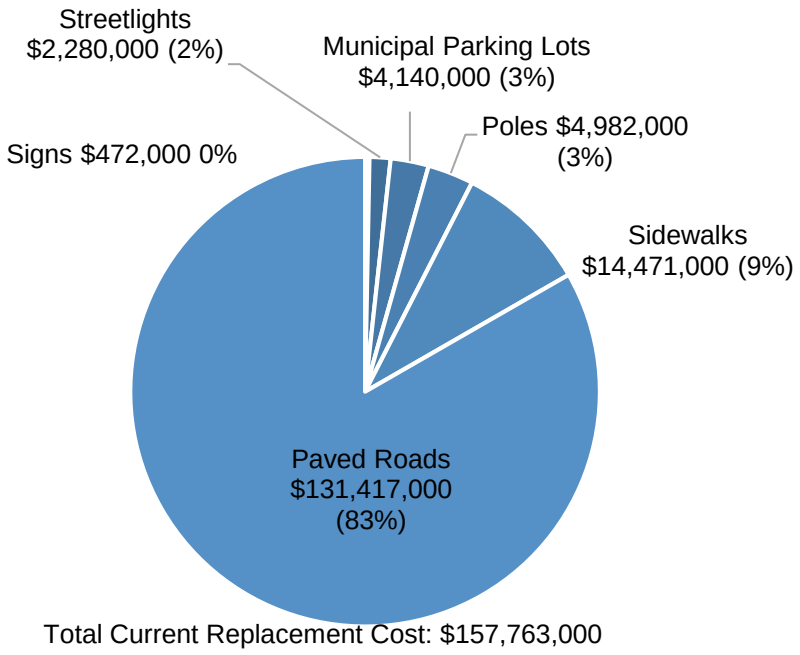
4.1 Road Network

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 Town's asset portfolio. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including sidewalks, signs, streetlights, poles, and municipal parking lots.

4.1.1 Asset Inventory & Replacement Cost

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Municipal Parking Lots	23	Assets	$4,140,279	CPI
Paved Roads	231,000[1]	Meters	$131,416,744	Cost per unit
Poles	1,529	Assets	$4,982,399	CPI
Sidewalks	138,000	Meters	$14,471,199	Cost per unit
Signs	21	Assets	$471,999	CPI
Streetlights	2,503	Assets	$2,280,415	CPI

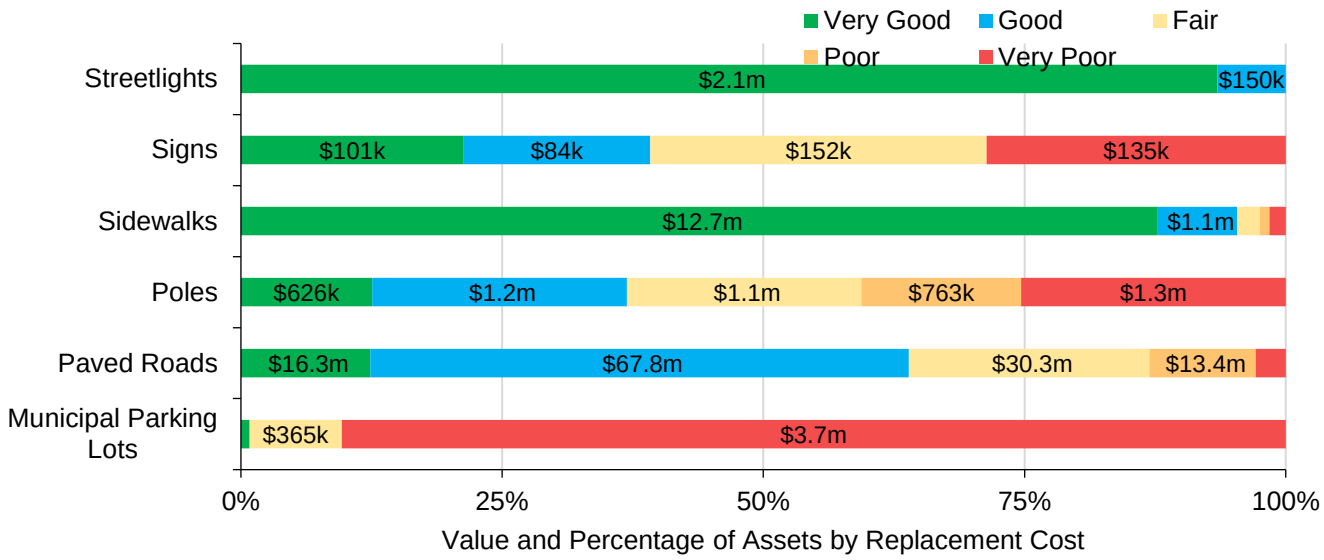


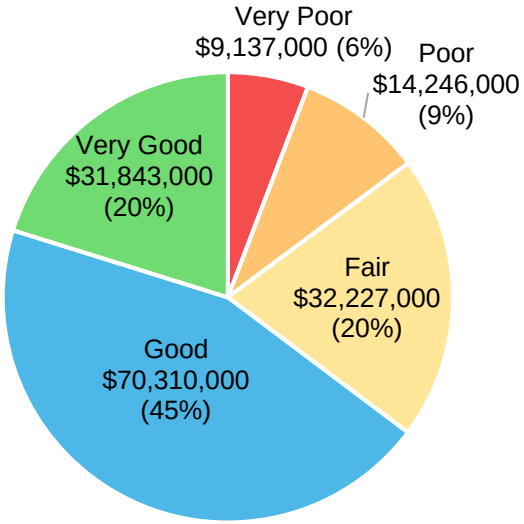
[1] The Town of Tillsonburg owns and manages 231 *lane kilometers* of paved surfaces

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

4.1.2 Asset Condition

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





To ensure that the Town's continues to provide an acceptable level of service, the Town 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 road network.

Current Approach to Condition Assessment

Accurate and reliable condition data is important to estimating the remaining service life of assets and identifying the most cost-effective approach to managing assets. The following describes the Town's current approach:

- A Pavement Condition assessment was completed in 2021. The purpose of the study was to establish the surface condition of each paved road segment. In addition, the structural capacity was evaluated for a portion of the road network. Condition was surveyed using a multi-function data collection vehicle equipped with a series of cameras and profilers to measure cracking, rutting, and road profile data (i.e., potholes and raveling). This data informed the assessed condition rating. This information was updated in the Town's asset management software program and reflected in this report.
- The Town intends to procure third-party road condition assessments every three to four years.
- In 2022, the Town's sidewalks were assessed for condition by Streetscan. Like the roads assessment, sidewalks were reviewed for condition using a data collection vehicle. At the time of the study additional data on surface material, sidewalk direction, and sidewalk quantities was collected. This information was updated in the Town's asset management software program and reflected in this report.
- Other road network assets rely on age-based condition which is calculated based on the assets age relative to its estimated useful life.

The following table outlines the Town's current lifecycle management strategy for road network assets, excluding paved roads and sidewalks.

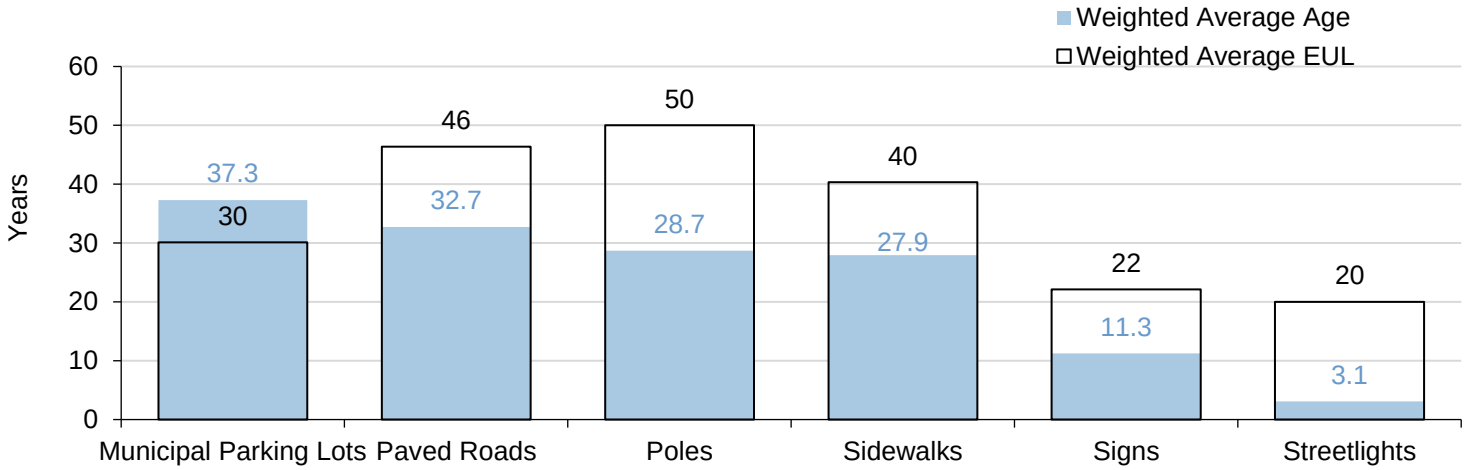
Activity Type	Description of Current Strategy
Maintenance	Roads are maintained to at least the Minimum Maintenance Standard (O. Reg. 239/02) for municipal roads. To meet this standard, the Town commonly completes sweeping, pot hole patching, vegetation management, and snow and ice removal.
Inspection	Roads are regularly patrolled by the public works department. These patrols, alongside public complaints are the primary trigger for maintenance activities.
Rehabilitation	The Town has a robust rehabilitation strategy, which takes into account various factors including road surface, road classification, AADT, etc. Refer to 4.1.4.

Replacement	Replacement is considered when an asset's condition has deteriorated significantly, and rehabilitation is no longer cost-effective as well as assessing increased operational needs and resident complaints.

4.1.3 Estimated Useful Life & Average Age

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. Assessed condition may increase or decrease the average service life remaining.

Each asset's Estimated Useful Life should be reviewed periodically to determine



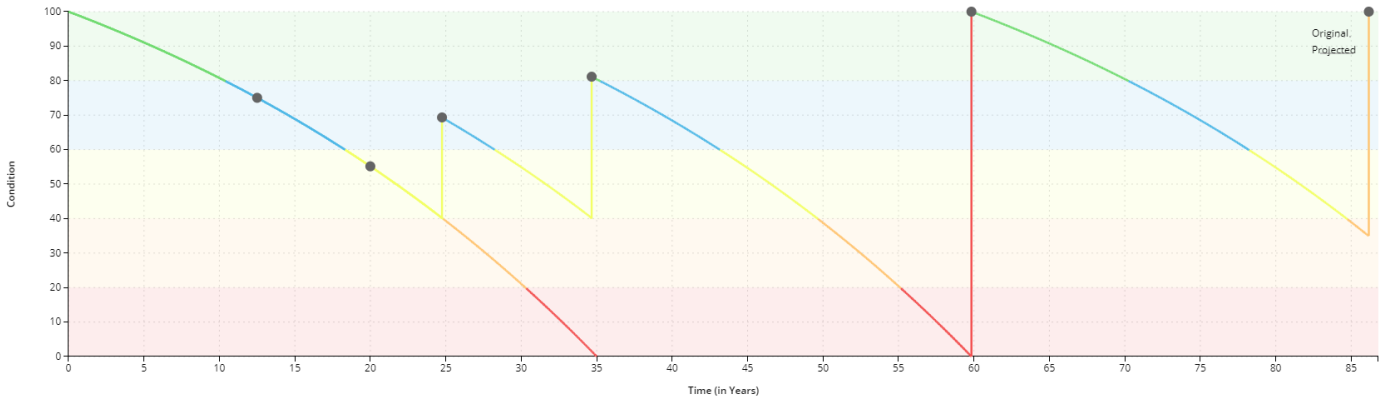
whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.1.4 Lifecycle Management Strategy

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

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of the Town's 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.

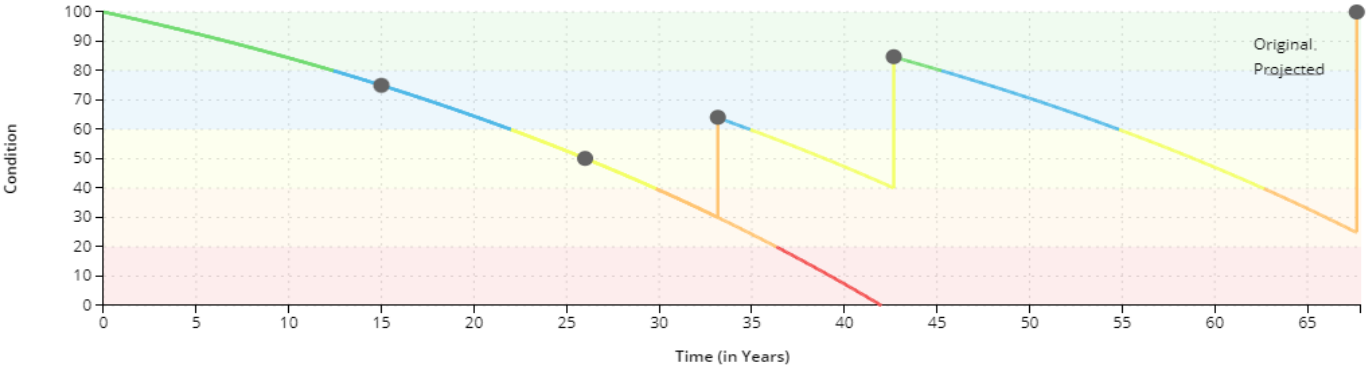
Roads – Arterial		
Event Name	**Event Class**	**Event Trigger**
1st Crack Seal	Maintenance	Condition: 75-90
2nd Crack Seal	Maintenance	Condition: 55-75
Partial Depth Rehabilitation[2]	Rehabilitation	Condition: 40-55
Full Depth Rehabilitation [3]	Rehabilitation	Condition: 40-55
Asset Replacement/Reconstruction	Rehabilitation	Condition: 0-40



[2] Top Layer

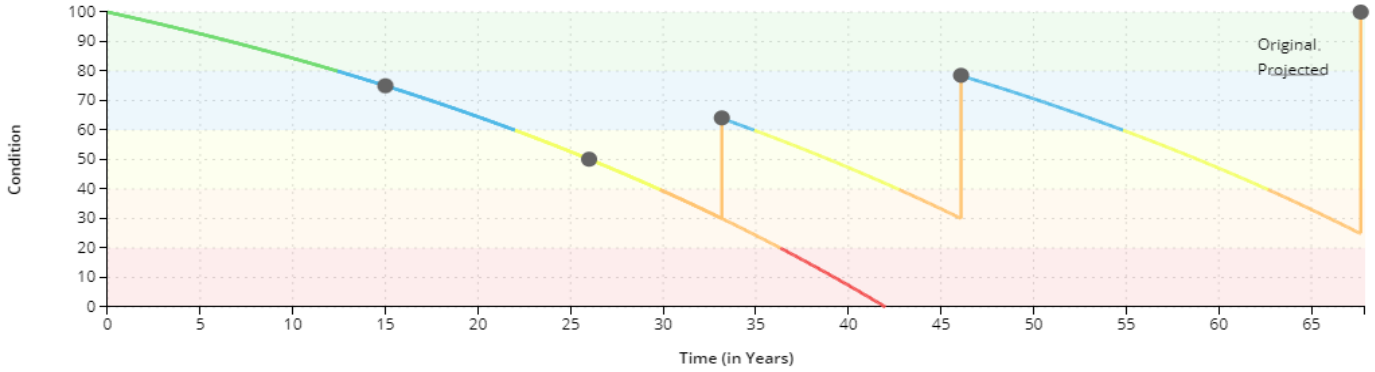
[3] Top & Bottom Layers, with spot curb & gutter repairs

Roads – Collector Commercial & Industrial		
Event Name	**Event Class**	**Event Trigger**
1st Crack Seal	Maintenance	Condition: 75-90
2nd Crack Seal	Maintenance	Condition: 50-75
Partial Depth Rehabilitation[4]	Rehabilitation	Condition: 30-50
Full Depth Rehabilitation [5]	Rehabilitation	Condition: 40-55
Asset Replacement	Rehabilitation	Condition: 25-29

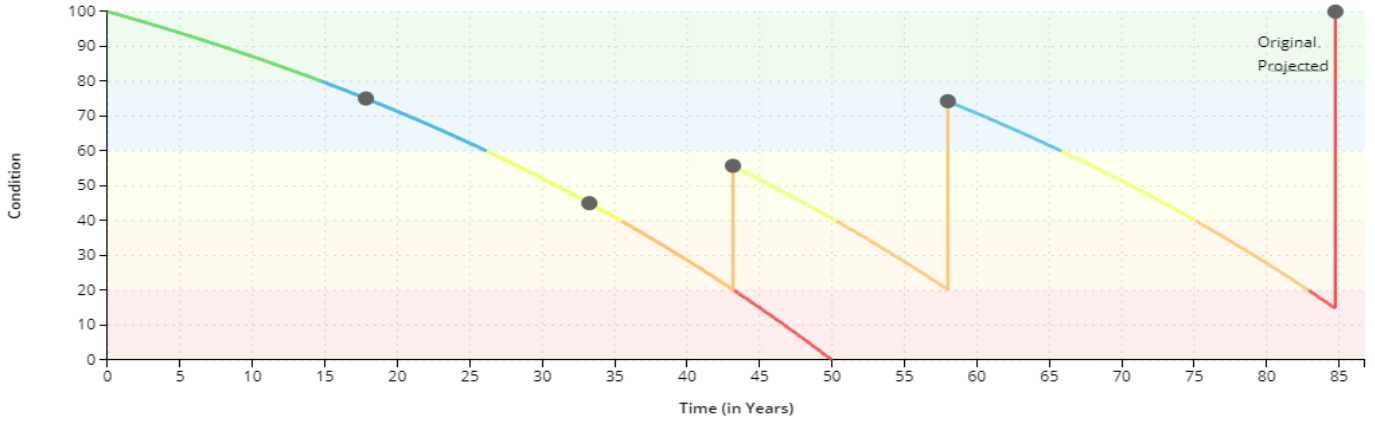


Roads – Collector Residential		
Event Name	**Event Class**	**Event Trigger**
1st Crack Seal	Maintenance	Condition: 75-90
2nd Crack Seal	Maintenance	Condition: 50-75
Partial Depth Rehabilitation[6]	Rehabilitation	Condition: 30-50
Full Depth Rehabilitation [7]	Rehabilitation	Condition: 30-50
Asset Replacement	Rehabilitation	Condition: 25-29

[4] Top Layer
[5] Top & Bottom Layers, with spot curb & gutter repairs
[6] Top Layer
[7] Top & Bottom Layers, with spot curb & gutter repairs



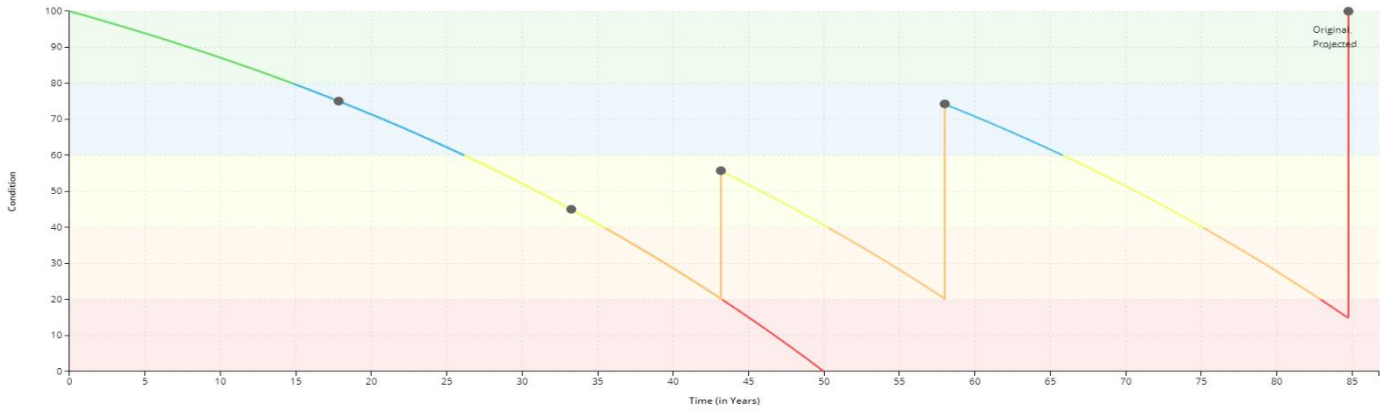
Roads – Local Commercial & Industrial		
Event Name	**Event Class**	**Event Trigger**
1st Crack Seal	Maintenance	Condition: 75-90
2nd Crack Seal	Maintenance	Condition: 45-75
Partial Depth Rehabilitation[8]	Rehabilitation	Condition: 20-45
Full Depth Rehabilitation [9]	Rehabilitation	Condition: 20-45
Asset Replacement	Rehabilitation	Condition: 15-19



[8] Top Layer

[9] Top & Bottom Layers, with spot curb & gutter repairs

Roads – Local Residential		
Event Name	**Event Class**	**Event Trigger**
1st Crack Seal	Maintenance	Condition: 75-90
2nd Crack Seal	Maintenance	Condition: 45-75
Partial Depth Rehabilitation[10]	Rehabilitation	Condition: 20-45
Full Depth Rehabilitation [11]	Rehabilitation	Condition: 20-45
Asset Replacement	Rehabilitation	Condition: 15-19



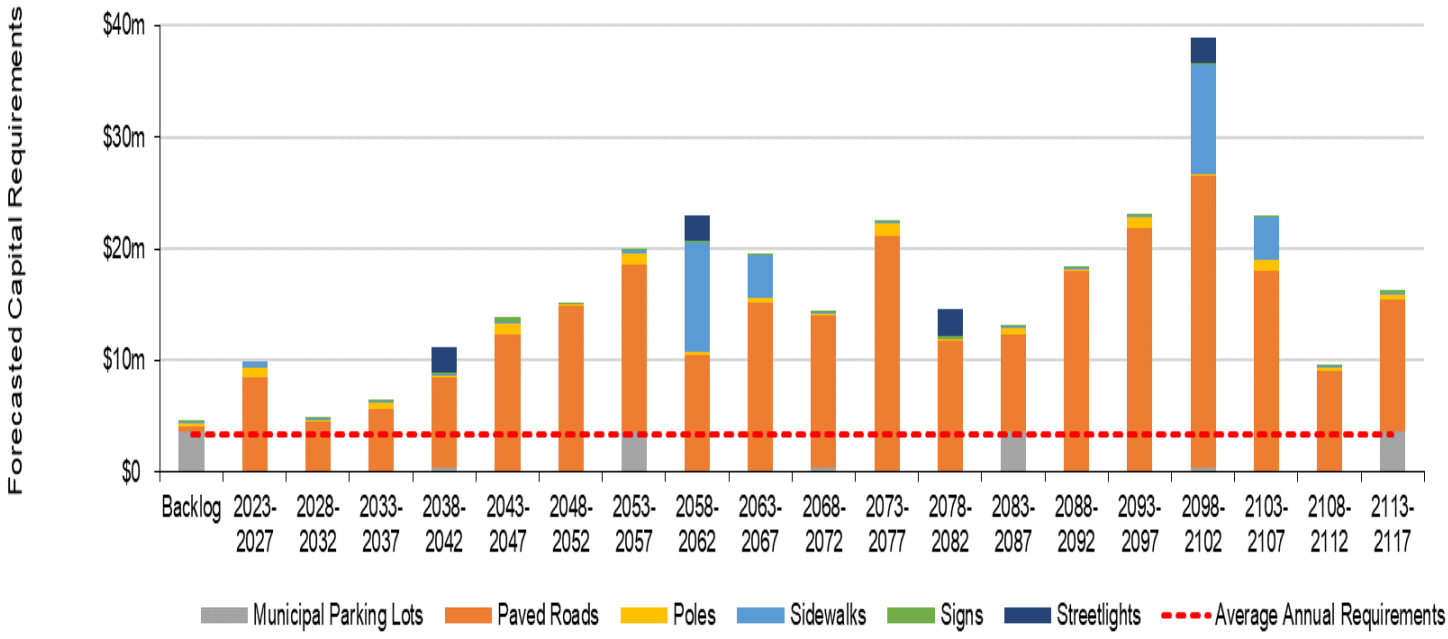
Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for the Town's various road profiles, and assuming the end-of-life replacement of all other assets in this category, the following graph forecasts capital requirements for the road network.

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 100 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.

[10] Top Layer

[11] Top & Bottom Layers, with spot curb & gutter repairs



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

4.1.5 Risk & Criticality

Risk Matrix

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

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
4,359 Assets	768 Assets	224 Assets	256 Assets	65 Assets
70,699.90 m, unit(s)	58,972.61 m, unit(s)	32,584.39 m, unit(s)	42,031.47 m, unit(s)	9,795.11 m, unit(s)
$28,820,097.68	$35,426,429.42	$32,140,975.86	$47,441,690.12	$13,933,842.41

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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (%) (Economic)	Roadside Environment (Environmental)
	AADT (Service Delivery)
	Functional Class (Social)
	Maintenance Class (Legal & Regulatory)

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events
An increase in freeze/thaw cycles causes road pavement to heave and settle. This can cause the accelerated deterioration of road surface pavement which leads to an increased need for maintenance and rehabilitation. The uncertainty surrounding the impact of extreme weather events can make changing conditions difficult to plan for. Other significant climate change impacts may result from increasing temperatures. For example, higher temperatures can accelerate the deterioration of road surfaces and weaken the foundation.

Infrastructure Re-Investment
Town staff have expressed concern that going into the future, larger road rehabilitation or replacement projects will be deferred depending on the availability of grant funding opportunities, which are not guaranteed. A long-term capital funding strategy can reduce dependency on grant funding and help prevent deferral of necessary capital works.

4.1.6 Levels of Service

The following tables identify the Town'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 Town 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 (2022)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	The Town completed a Pavement Condition assessment in 2021. Roads were assessed for overall condition on a 0-100 scale. Condition is classified and defined as follows: Very good (80-100): Good (60-79): Fair (40-59): Poor (20-39): Very Poor (0-19): See Appendix C for photos

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	16
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	92
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	123
Quality	Average pavement condition index for paved roads in the municipality	PCI:66
	Average surface condition for unpaved roads in the municipality (e.g., excellent, good, fair, poor)	N/A

4.1.7 Recommendations

Asset Inventory

- Regularly review and update the inventory for accuracy and comprehensiveness. Specifically, curbs, streetlights, street signs, and traffic signals.
- The sidewalk inventory includes several pooled assets that should be broken into discrete segments to allow for detailed planning and analysis.
- A thorough review of roadside appurtenances is recommended in the coming years. Specifically, poles and guiderails should be reviewed and updated (engineering estimates useful life, unit costing, condition, material type, etc.).

Condition Assessment Strategies

- Complete prompt updates to the asset management system with report data and information so that the most recent, accurate, and comprehensive information on the Town’s asset is available and considered in decisions.

Lifecycle Management Strategies

- Review the identified lifecycle management strategies for the Town's roads, to realize potential cost avoidance and maintain a high quality of road pavement condition.
- Evaluate the efficacy of the Town's lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk.

Risk Management Strategies

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

Levels of Service

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

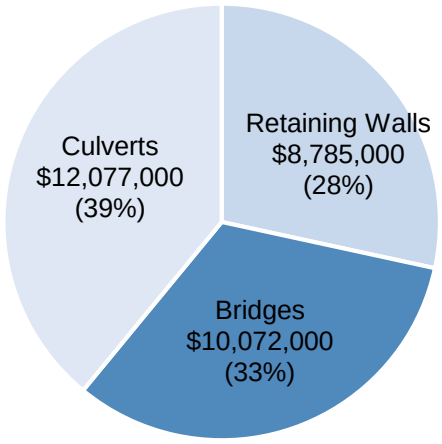
4.2 Bridges & Culverts

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

4.2.1 Asset Inventory & Replacement Cost

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Bridges	8	Assets	$10,072,000	User-defined
Culverts	16[12]	Assets	$12,077,000	User-defined
Retaining Walls	8	Assets	$8,785,000	User-defined



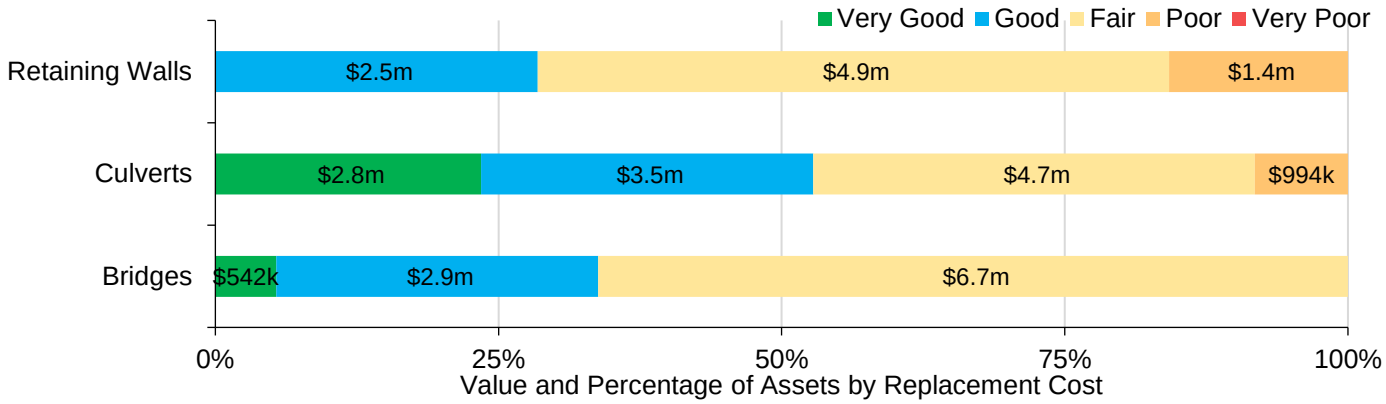
Total Current Replacement Cost: $30,934,000

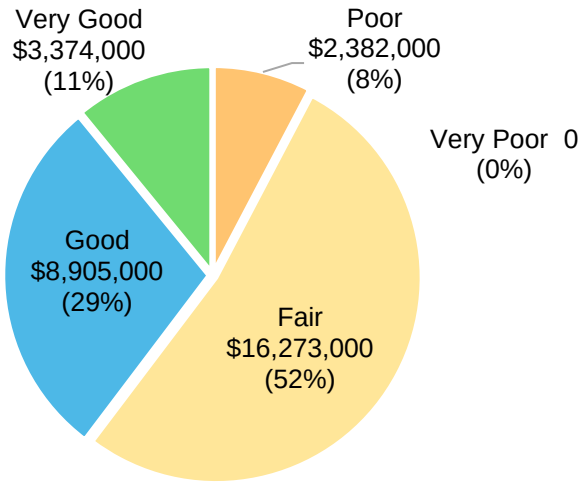
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

[12] Comprised of both structural (>3 meters) and non-structural (<3 meters) culverts that are assessed biennially. 9 of the 16 culvert structures are sub-three meters.

4.2.2 Asset Condition

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





To ensure that the Town's continues to provide an acceptable level of service, the Town 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 bridges and culverts.

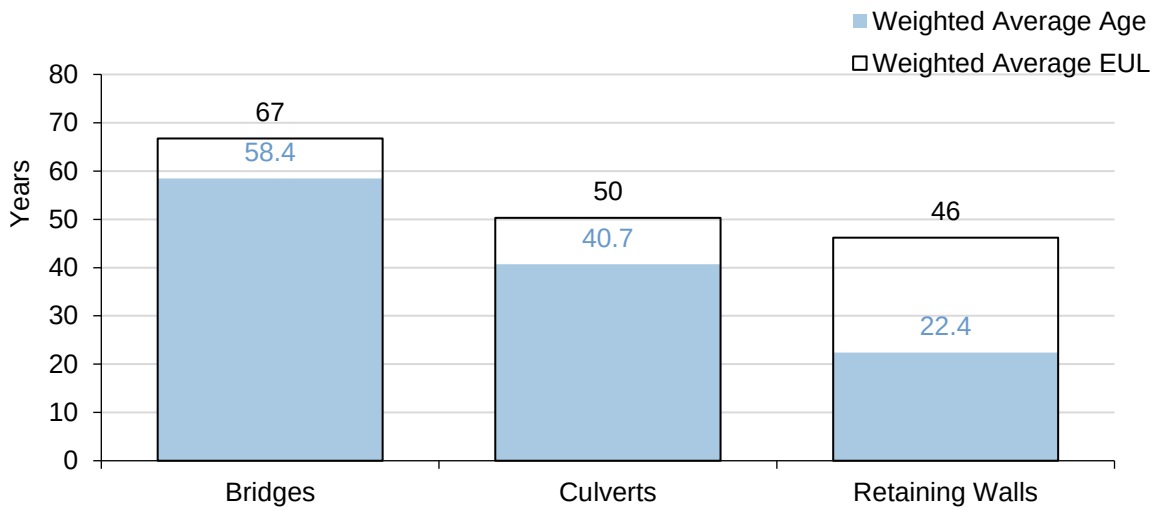
Current Approach to Condition Assessment

Accurate and reliable condition data is important to estimating the remaining service life of assets and identifying the most cost-effective approach to managing assets. The following describes the Town's current approach:

- In August 2023 the Town's Bridges, structural culverts, and some retaining walls were assessed in accordance with the Ontario Structure Inspection Manual (OSIM).
- Assets were reviewed and assigned a bridge condition index (BCI) score which ranged from 0-100. In addition, bridge attribute information including the structure width, current load limits as applicable, recommended capital works including their estimated cost and recommended timing were detailed.
- This information has been updated in the asset management software system and is reflected in the AMP.

4.2.3 Estimated Useful Life & Average Age

The Estimated Useful Life for bridge and culvert 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. Assessed condition may increase or decrease the average service life remaining.



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.

4.2.4 Lifecycle Management Strategy

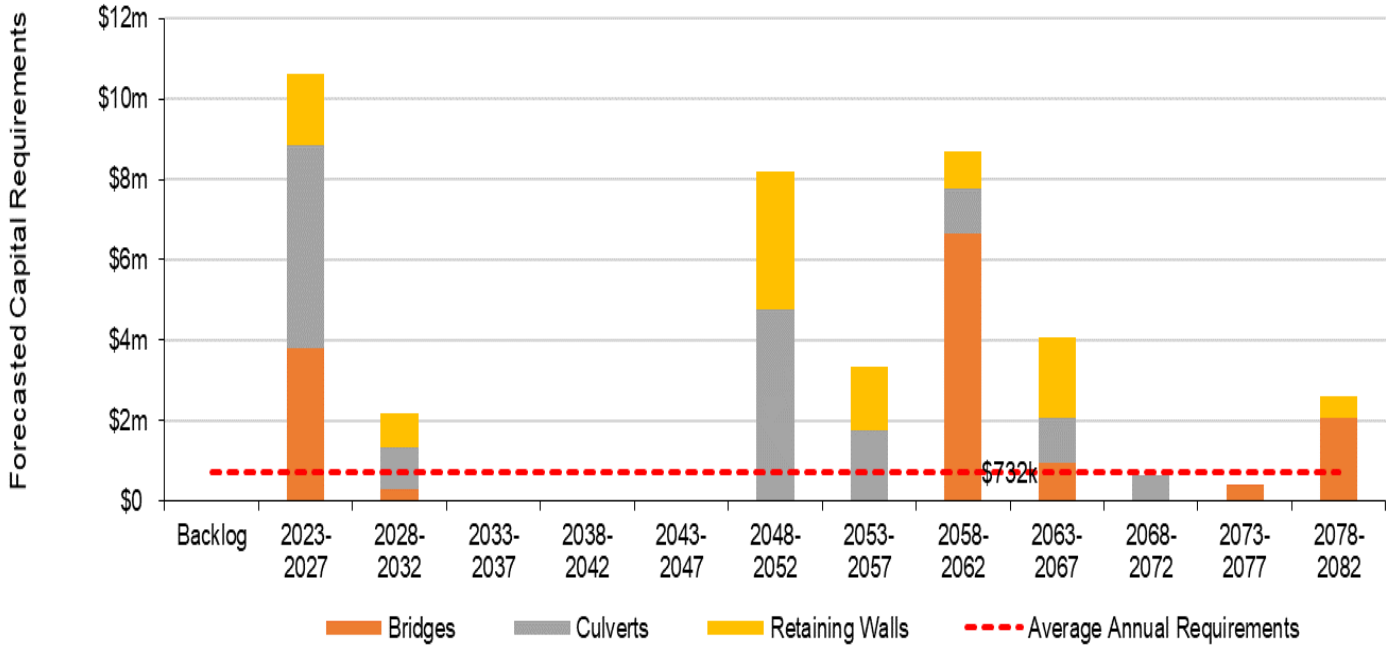
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities primiarly include cleaning, deck/surface sweeping, vegetation management and anti-icing.
	Minor repairs may be included when the required maintenance falls under the skills and capabilities of the staff; otherwise, the maintenance will be consulted and contracted, where appropriate.
Inspection	Staff complete regular patrols of bridges and structural culverts which in some cases triggers routine maintenance activities. Public complaints may also trigger maintenance activities.
	The most recent inspection Ontario Structure Inspection Manual (OSIM) report was completed in 2023 by GM Blue Plan Engineering.
Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the OSIM report findings. Investment is prioritized based on the Bridge Condition Index (BCI) score and the critical needs.
	Replacement is generally conducted when the asset has deteriorated significantly and rehabilitation is no longer a viable option.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 60 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



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

4.2.5 Risk & Criticality

Risk Matrix

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

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
3 Assets	8 Assets	4 Assets	15 Assets	2 Assets
49.27 unit(s), m	8.00 unit(s)	4.00 unit(s)	15.00 unit(s)	128.90 unit(s), m
$2,751,000.00	$4,458,500.00	$6,111,000.00	$13,102,000.00	$4,511,000.00

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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (%) (Economic)	Roadside Environment (Environmental)
	Maintenance Class (Service Delivery)
	Number of Lanes (Service Delivery)
	Functional Class (Social)
	Asset Identifier (Legal & Regulatory)

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events

Flooding and extreme weather cause damage to multiple components of the Town's bridges including the deck, superstructure, substructure, and approaches. The rising levels of freshwater and the increased frequency and intensity of precipitation events are likely to increase the deterioration of bridge components. Staff should identify and monitor effected bridges and culverts. The Town also should prioritize infrastructure maintenance, rehabilitation, and replacement based on susceptibility to climate impacts.

Capital Funding Strategies

Town staff have expressed concern that major capital rehabilitation projects for bridges and culverts may be dependant on the availability of grant funding opportunities, which are not guaranteed. When grants are not available, bridge rehabilitation projects may be deferred. An

annual capital funding strategy reduce dependency on grant funding and help prevent deferral of capital works.

4.2.6 Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of the municipal transportation network. None of the Town's structures have loading or dimensional restrictions meaning that most types of vehicles, including heavy transport, motor vehicles, emergency vehicles and cyclists can cross them without restriction.
Quality	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	See Appendix C

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% of bridges in the Town with loading or dimensional restrictions	0%
Quality	Average bridge condition index value for bridges in the Town	BCI:65
	Average bridge condition index value for structural culverts in the Town	BCI:58

4.2.7 Recommendations

Data Review/Validation

- Continue to review and validate inventory data, assessed condition data and replacement costs for all bridges and structural culverts upon the completion of OSIM inspections every 2 years. Incorporate any repair and capital rehabilitation recommendations into the database so that forecasted costs are accurately reflected.

Risk Management Strategies

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

Lifecycle Management Strategies

- The Town should work towards integrating projected capital rehabilitation and renewal costs for bridges and culverts for long-term planning purposes.

Levels of Service

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

4.3 Stormwater Network

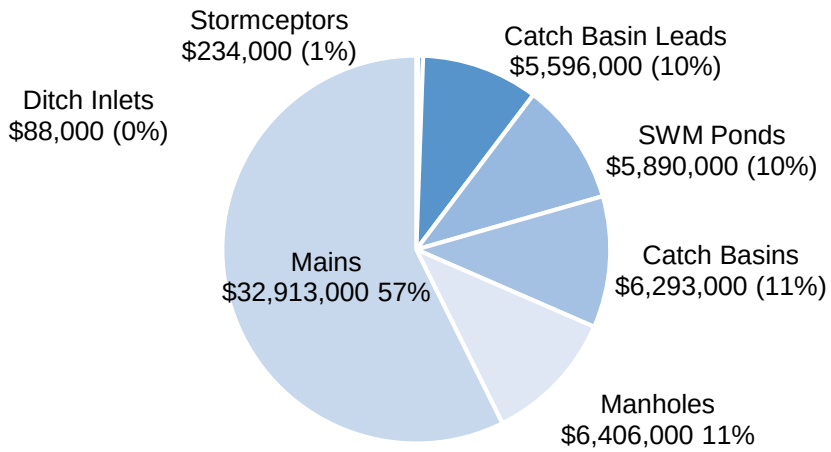
The Town owns and maintains a stormwater network which consists of storm mains, catch basins and other supporting infrastructure.

Staff are working towards improving the accuracy and reliability of their stormwater network inventory to assist with long-term asset management planning.

4.3.1 Asset Inventory & Replacement Cost

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Catch Basin Leads	24,600	Meters	$5,596,000	User-defined
Catch Basins	2,552	Assets	$6,293,000	User-defined
Ditch Inlets	31	Assets	$88,000	User-defined
Mains	79,156	Meters	$32,913,000	User-defined
Manholes	1,143	Assets	$6,406,000	User-defined
Stormceptors	6	Assets	$234,000	User-defined
SWM Ponds	18	Assets	$5,890,000	User-defined

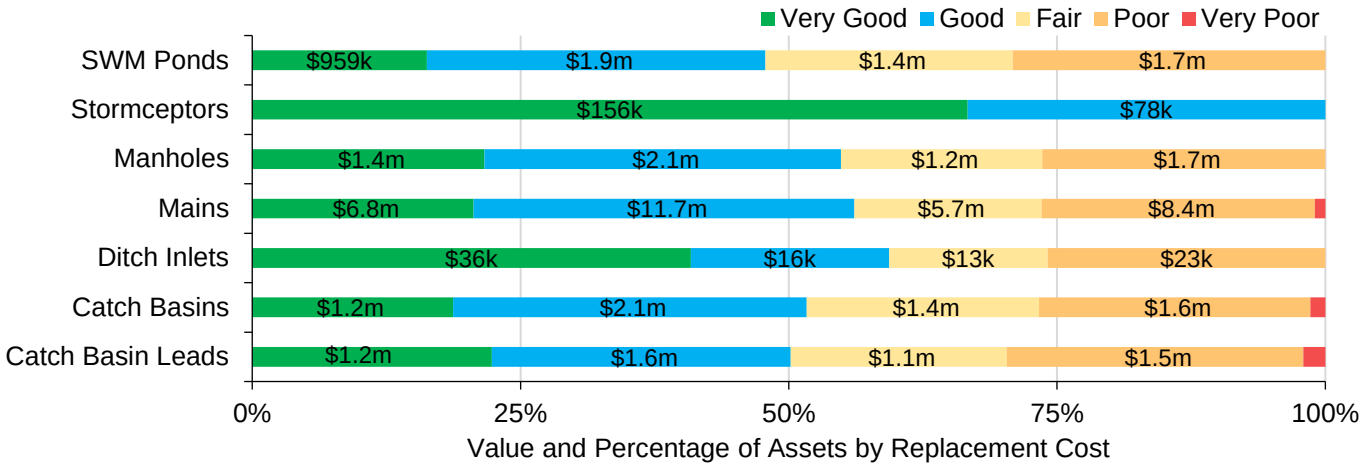


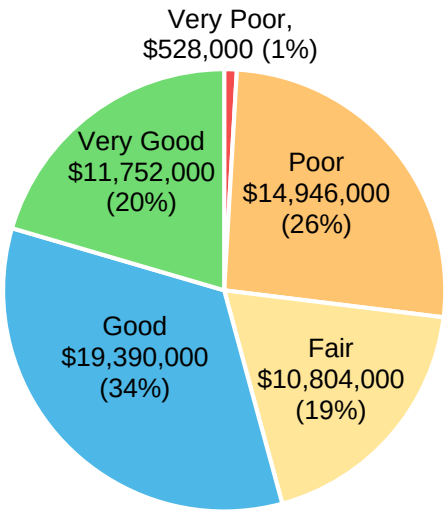
Total Current Replacement Cost: $57,420,000

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

4.3.2 Asset Condition

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





To ensure that the Town's stormwater network continues to provide an acceptable level of service, the Town 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 stormwater network.

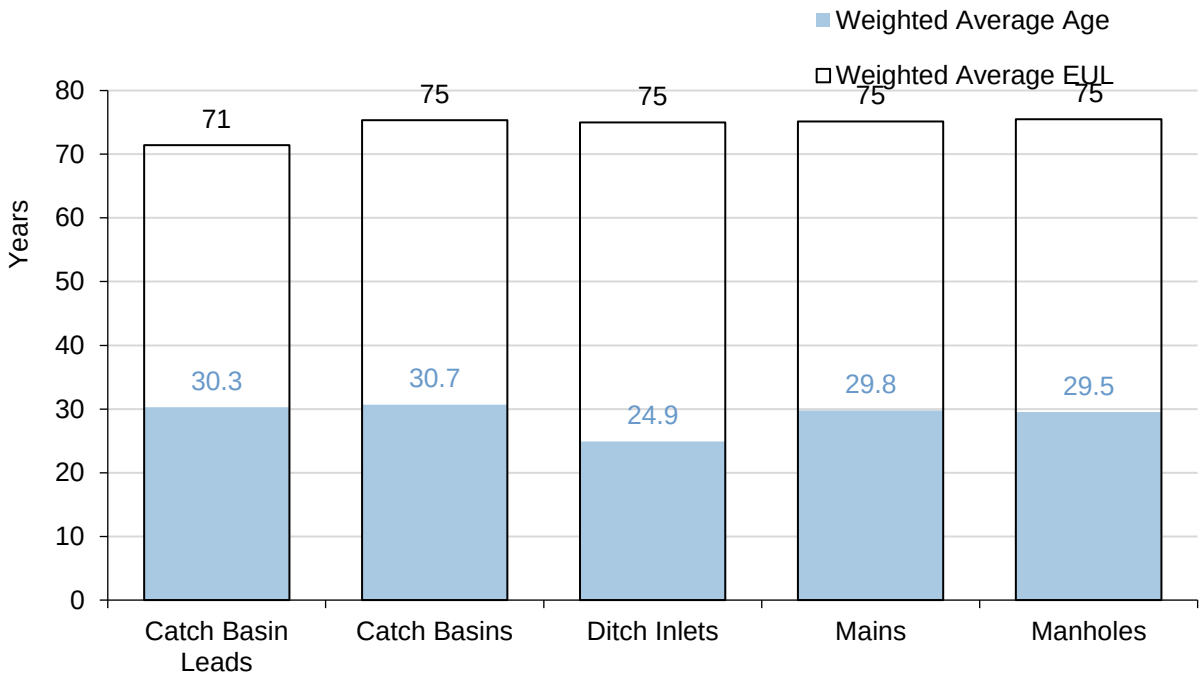
Current Approach to Condition Assessment

Accurate and reliable condition data is important to estimating the remaining service life of assets and identifying the most cost-effective approach to managing assets. The following describes the Town's current approach:

- Currently, the town does not conduct condition assessments on storm mains or storm maintenance access holes. Assessments are only conducted when there is an upcoming construction project(s) or when a known concern through failure, is identified.
- Storm Management Ponds are internally inspected yearly through the Stormwater Management Operation and Maintenance Program.
- As the Town refines the available asset inventory for the stormwater network a regular assessment cycle should be established.

4.3.3 Estimated Useful Life & Average Age

The Estimated Useful Life for stormwater 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. Assessed condition may increase or decrease the average service life remaining.



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.

4.3.4 Lifecycle Management Strategy

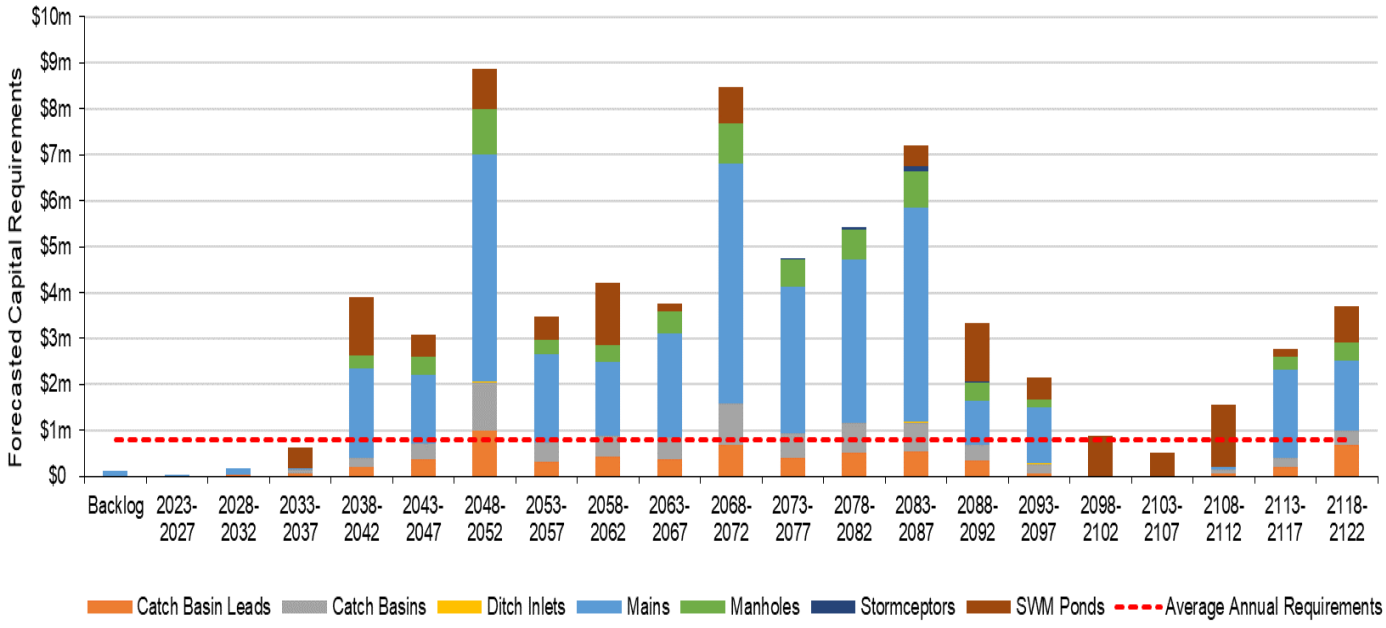
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Inspection	Stormwater mains and maintenance access holes are assessed for condition when there is an upcoming construction project(s) or when a known concern through failure is identified. The town does not currently fund an inspection program.
Maintenance	Maintenance activities are completed to a lesser degree compared to other underground linear infrastructure
	Primary activities include catch basin cleaning and storm main flushing, but only a small percentage of the entire network is completed per year
	Maintenance activities may be triggered by staff inspection, functional issues, and resident concerns.
	CCTV inspections and cleaning is completed as budget becomes available and this information will be used to drive forward rehabilitation and replacement plans
Rehabilitation	The Town currently conducts trenchless re-lining where viable. Other rehabilitation activities include structural repairs.
Replacement	The condition, history and cost of repairs, and critical need of an asset is the primary consideration for asset replacement. Additionally, the Town considers coordinated replacement with other assets.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 100 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.

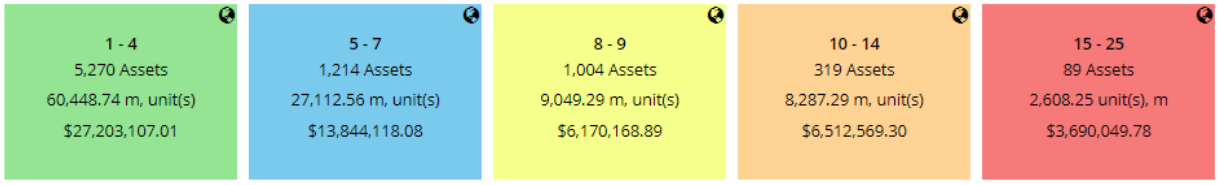


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.3.5 Risk & Criticality

Risk Matrix

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



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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (Economic)	Surrounding Environment (Environmental)
Material (Economic)	Diameter (mm) (Social)

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events
Staff need a better sense of the impacts of climate change on the Stormwater Network to inform retrofitting and replacement planning. Additional data will help address concerns with system capacity and the ability of the stormwater network to handle any potential increase in the intensity, frequency, and duration of rainfall events. Incorporating a monitoring and maintenance program for all stormwater infrastructure

into the asset management plan can further support infrastructure resiliency and reduce risk.

Capital Funding Strategies

Staff have expressed concern that major capital rehabilitation projects for the Stormwater Network may be dependant on the availability of grant funding opportunities, which are not guaranteed. When grants are not available, Storm Network rehabilitation projects may be deferred. An annual capital funding strategy can reduce dependency on grant funding and help prevent deferral of capital works.

4.3.6 Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include map, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater system	See Appendix C

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% of the municipal stormwater management system resilient to a 2-year storm	50%

% of the municipal stormwater management system resilient to a 5-year storm	10%
% of properties in municipality resilient to a 100-year storm	1%

4.3.7 Recommendations

Asset Inventory

- The Town's stormwater network inventory remains at a basic level of maturity and staff do not have a high level of confidence in its accuracy or reliability. The development of a comprehensive inventory of the stormwater network should be priority.
- The Town should continue refining its database by updating pertinent attribute details, including unit costing, quantities, material, diameter, etc.

Condition Assessment Strategies

- The development of a comprehensive inventory should be accompanied by a system-wide assessment of the condition of all assets in the stormwater network through CCTV inspections.

Risk Management Strategies

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

Lifecycle Management Strategies

- Document and review lifecycle management strategies for the stormwater network on a regular basis to achieve the lowest total cost of ownership while maintaining adequate service levels.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

4.4 Facilities

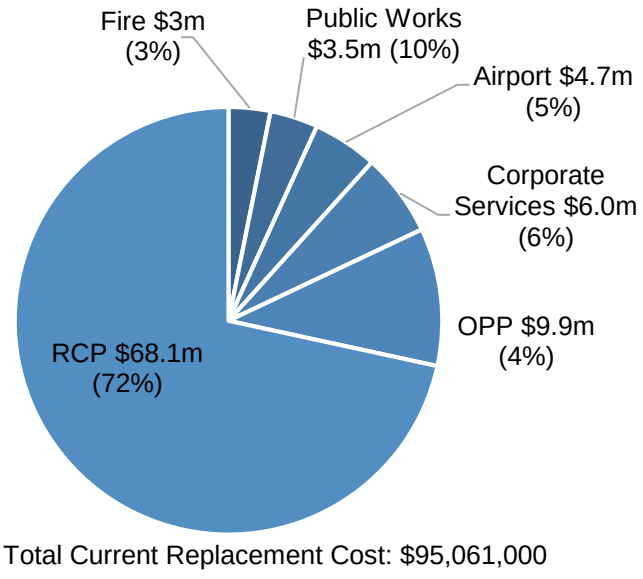
The Town of Tillsonburg owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- administrative offices
- fire halls
- police station
- community centres
- museums
- fairgrounds and waterparks

4.4.1 Asset Inventory & Replacement Cost

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

Segment	Components	Unit of Measure	Replacement Cost	Primary RC Method
Airport	58	Assets	$4,662,000	CPI
Corporate Services	88	Assets	$5,968,000	CPI
Fire	64	Assets	$3,005,000	User-defined
OPP	169	Assets	$9,909,000	User-defined
Public Works	58	Assets	$3,454,000	User-defined
RCP	644	Assets	$68,062,000	CPI

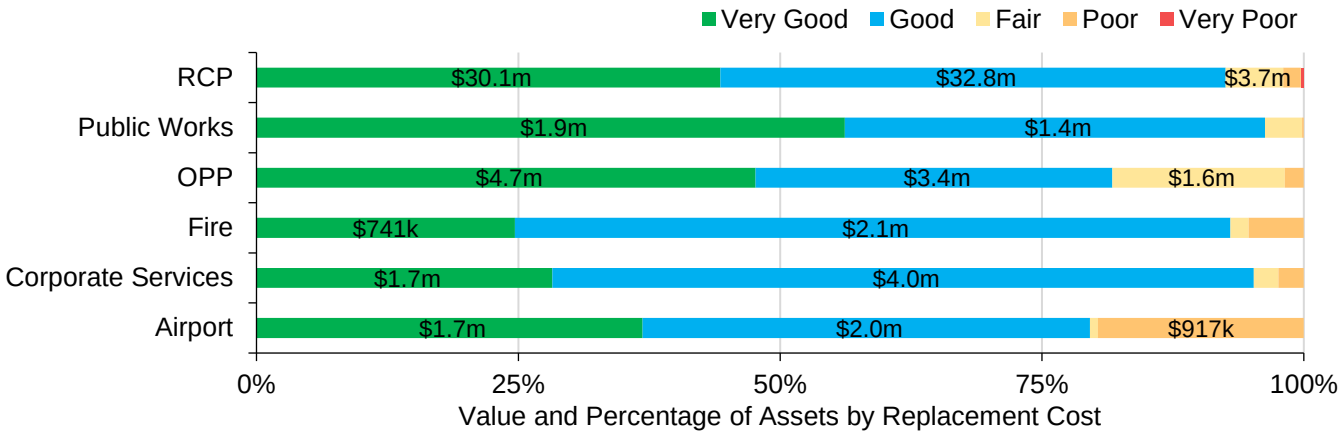


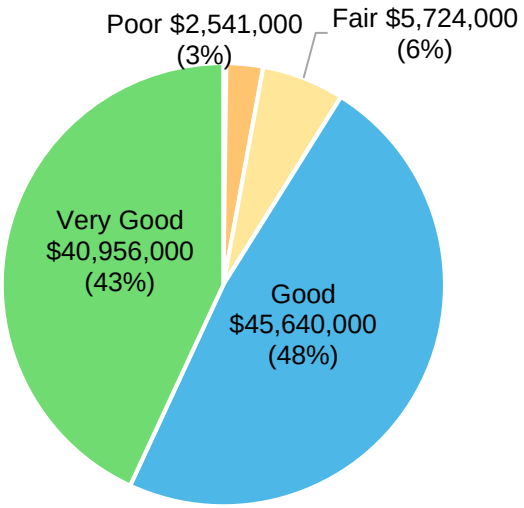
Total Current Replacement Cost: $95,061,000

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

4.4.2 Asset Condition

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





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

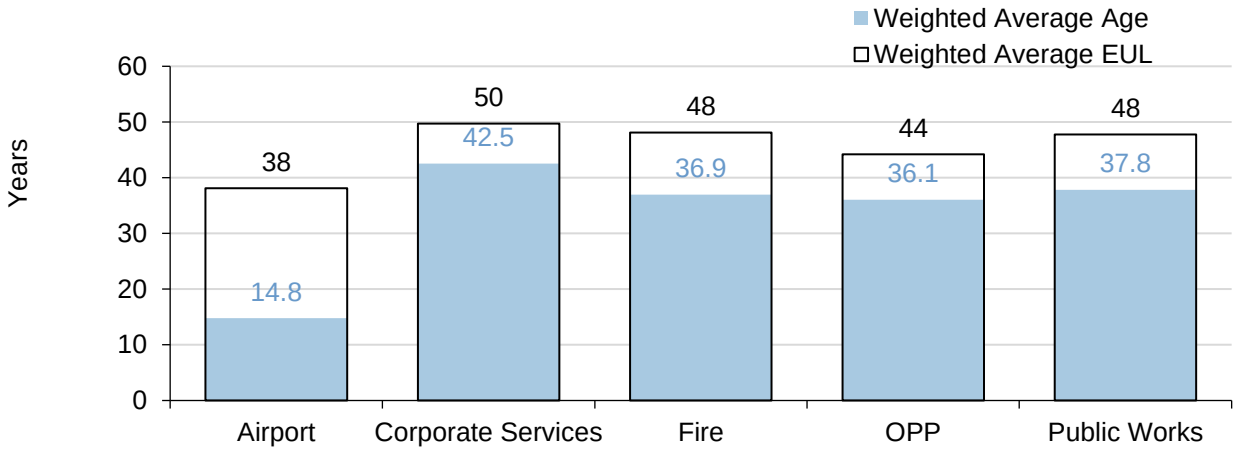
Current Approach to Condition Assessment

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 Town's current approach:

- In 2022, the Town procured portfolio-wide Building Condition Assessments (BCAs) which were completed by Roth IAMS. These assessments componentized each facility to a Uniformat Level III categorization and provided an opinion of assessed condition, replacement cost, recommended studies and rehabilitation events including their estimated costs, and additional site inspections details.
- Staff conduct scheduled, routine assessments to ensure that facility components are operating sufficiently.

4.4.3 Estimated Useful Life & Average Age

The Estimated Useful Life for buildings and facilities 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. Assessed condition may increase or decrease the average service life remaining.



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.

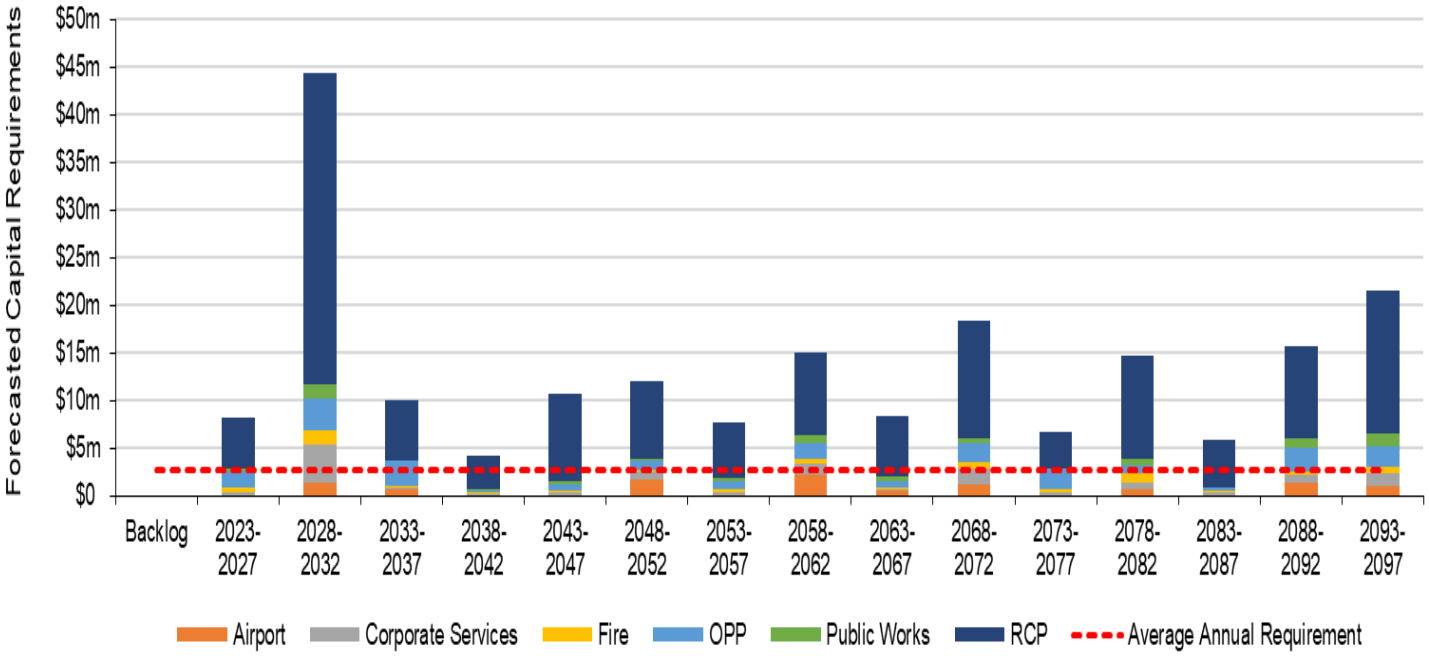
4.4.4 Lifecycle Management Strategy

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

Activity Type	***Description of Current Strategy***
Inspection	Building Condition Assessments (BCA) to componentize facilities to a Uniformat Level III categorization, which in turn, provide details regarding condition, replacement cost, recommended studies, and rehabilitation events.
Maintenance	Municipal staff generally complete most minor repairs to buildings; larger and more complex repairs are typically contracted out. Excluding routine maintenance, other maintennace activities are most often triggered by asset failure.
	Routine maintenance activities are generally conducted by municipal staff and external contractors at required intervals.
Rehabilitation	The initiation of the rehabilitation program occurs when assets begin to show signs of failure. This reactive approach involves identifying deteriorating or malfunctioning assets through regular inspections, maintenance records, or reports from the community. Once an asset is deemed in need of rehabilitation due to performance issues or safety concerns, the rehabilitation program is commenced.
	Historically, building assessments in Tillsonburg have not directly influenced budget allocations. Despite valuable insights gained from these assessments, there hasn't been a clear connection between the assessment findings and budgeting for infrastructure repairs. To enhance transparency with Council, there is a renewed effort to relay the critical importance of incorporating assessment data into the budgeting process. By establishing a more direct correlation, the town aims to underscore the significance of allocating sufficient funds to address identified issues, ensuring the longevity and safety of its infrastructure.
Replacement	Replacement is considered when an asset's condition has deteriorated significantly, and maintenance and rehabilitation is no longer cost-effective

Forecasted Capital Requirements

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



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

4.4.5 Risk & Criticality

Risk Matrix

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

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
670 Assets	296 Assets	87 Assets	24 Assets	4 Assets
176,861.70 m, unit(s), m2, litres	152,627.00 unit(s), m, m2, litres	91,451.00 m2, unit(s), litres, m	19,781.00 unit(s), m2, m	417.00 unit(s), m2
$37,875,702.94	$30,188,846.70	$13,453,007.00	$11,347,746.00	$2,195,441.00

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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (Economic)	Level 2 – Component Group (Economic)
	Difficulty Factor (Service Delivery)

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

Risks to Current Asset Management Strategies

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

Lifecycle Management Strategies

The current lifecycle management strategy for Facilities is considered more reactive than proactive. This is due to the aged state of the infrastructure in the Town. Staff find it challenging to keep on-track with a defined lifecycle management strategy when many asset components unexpectedly fail and need emergency replacement. With the recent Building Condition Assessments completed, staff hope to formally adopt better defined strategies that will minimize unexpected expenditures.

Aging Infrastructure and Materials

A portion of the infrastructure is reaching its end of useful life, however; staff believe they have a mix of both old and new units. There have been concerns identified with the past materials used in Facilities, such as asbestos in older buildings. Identifying assets that are reaching their end of useful life is a priority for staff. Many of the facilities have undergone Building Condition Assessments, and staff will continue to

prioritize the proactive replacement of asset components to avoid unexpected costs and comply with safety standards.

Capital Funding Strategy
Major capital rehabilitation projects for Facilities are very dependant on the availability of grant funding opportunities. When grants are not available, projects may be deferred. Moreover, Town staff have expressed that they are severely underfunded and don't have available funds to maintain a good state of repair or prepare for anticipated levels of growth. An annual capital funding strategy reduce dependency on grant funding and help prevent deferral or capital works.

4.4.6 Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include maps, of the types of facilities that the Town operates and maintains	Refer to section 4.4.1
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to sections 4.4.4 & 4.4.5

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of facilities in poor or worse condition	3%
	% of facilities in fair or better condition	97%

4.4.7 Recommendations

Asset Inventory

- The Town's asset inventory should be reviewed on a semi-annual to annual basis, to ensure that the database is kept up to date. With the completion of the building condition assessments in 2022, it is recommended that projected capital forecasts and completed events be reviewed/updated on a cyclical basis.

Replacement Costs

- Gather accurate replacement costs and update on a regular basis to ensure the accuracy of capital projections, for facilities which were not subject to the 2022 building condition assessments.

Risk Management Strategies

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

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

4.5 Fleet & Fleet Equipment

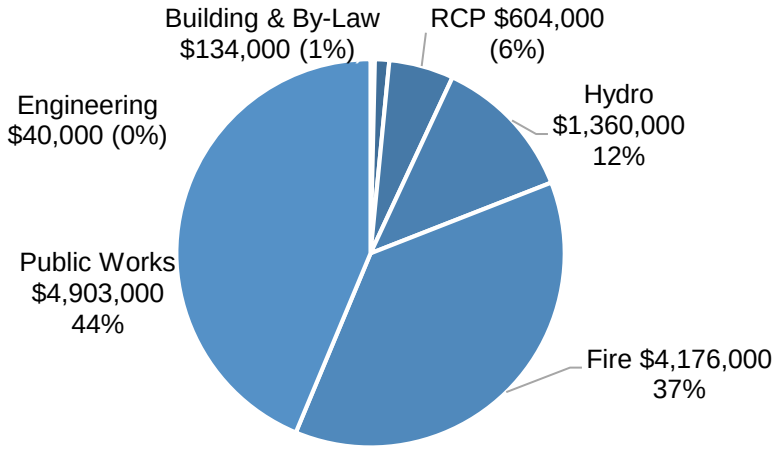
Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- public works vehicles for winter control activities
- fire rescue vehicles to provide emergency services
- various vehicles to support the maintenance of the transportation network and address service requests for Environmental Services and Parks & Recreation

4.5.1 Asset Inventory & Replacement Cost

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Building & By-Law	3	Assets	$134,000	User-defined
Engineering	1	Assets	$40,000	User-defined
Fire	7	Assets	$4,176,000	User-defined
Hydro	9	Assets	$1,360,000	User-defined
Public Works	52	Assets	$4,903,000	User-defined
RCP	12	Assets	$604,000	User-defined

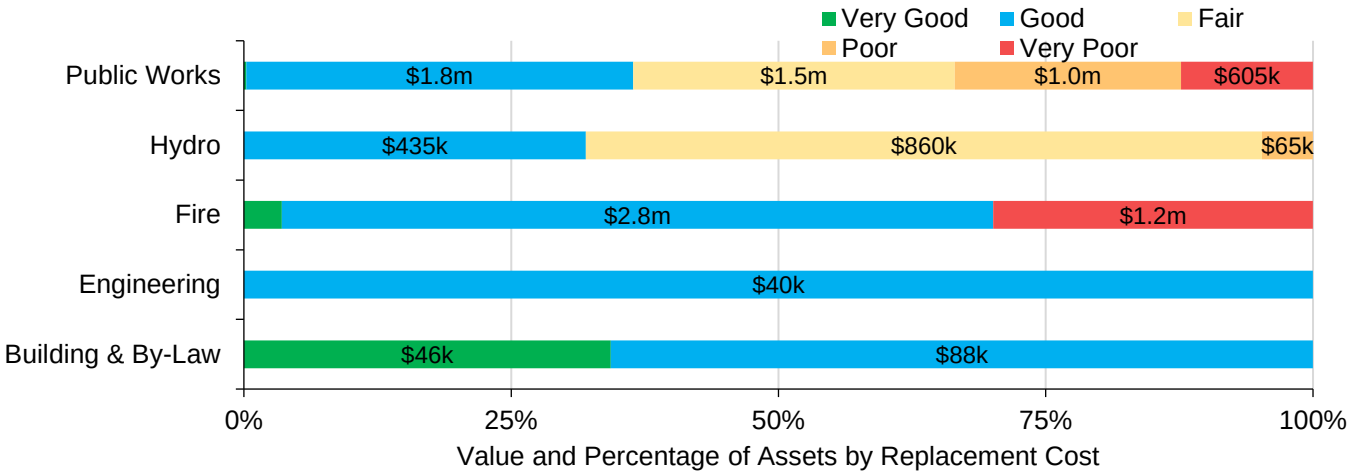


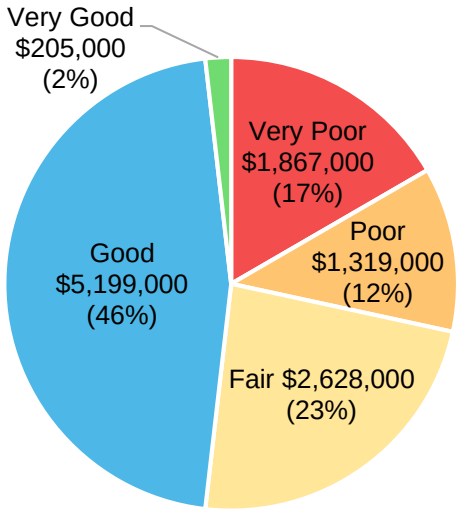
Total Current Replacement Cost: $11,218,000

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

4.5.2 Asset Condition

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





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

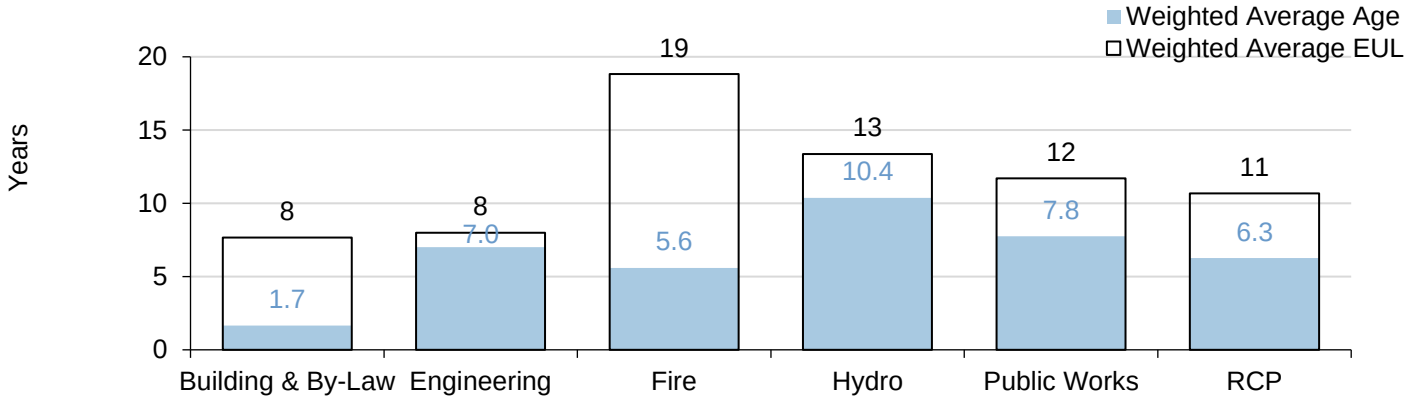
Current Approach to Condition Assessment

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

- As per the Vehicle Replacement Strategy – CVOR Fleet units have annual safety inspections which an assessment takes place at that time
- Fleet maintenance staff, through regular maintenance activities, assess the overall operating condition of units.
- Going forward, structured assessments will be used for all driveable fleet units
- Fleet units are not generally given condition ratings as it is typically a factor of age, operating condition, and anticipated repairs in determining the condition.
- Going forward, fleet maintenance staff will follow the replacement policy and assess the units using the rating method stated in Town's policy (ex. 1-rating scale)

4.5.3 Estimated Useful Life & Average Age

The Estimated Useful Life for vehicle 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. Assessed condition may increase or decrease the average service life remaining.



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.

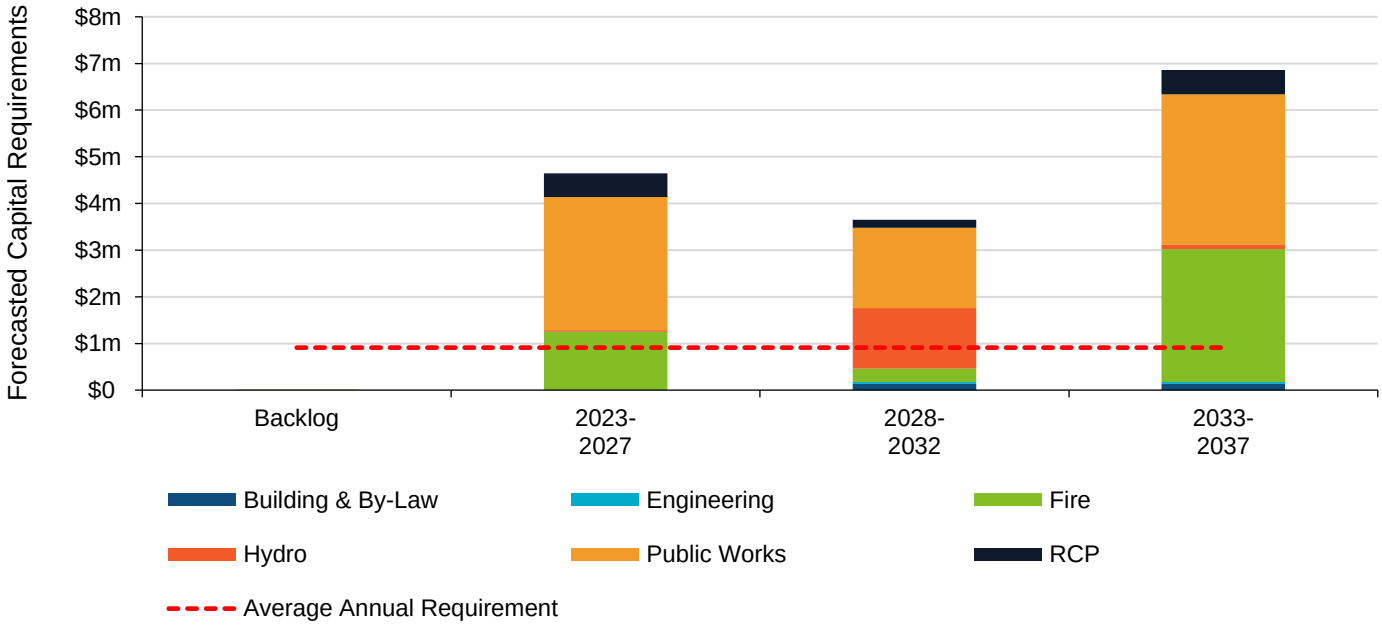
4.5.4 Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Tillonburg follows manufacturing and CVOR standards for routine maintenance. Routine maintenance activities include inspections, tire rotation, minor repairs, and oil changes.
	Operator dailiy inspections can play a major role in highlighting maintenance activities on a more proactive basis as opposed to reactive maintenance due to break-down and more immediate/emergency repairs, which helps in keeping the unit in good operational performance and reduces down-time.
	Inspections are conducted either anaully or inaccordance with the units operating manual/warranty guidelines, while minor repairs are performed as needed by mileage, daily inspections or specific break-downs occur.
Replacement	Replacement is considered when an asset's condition has deteriorated significantly, and maintenance is no longer cost-effective. However, significant repairs are considered when the delays to vehicle replacments are significant
	Higher risk assets relative to public safety is top priority. Also, assets with an expected service life nearing its end or those incurring frequent and costly repairs are prioritized for replacement as well as assets requiring longer lead times to facilitate replacement.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 15 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.

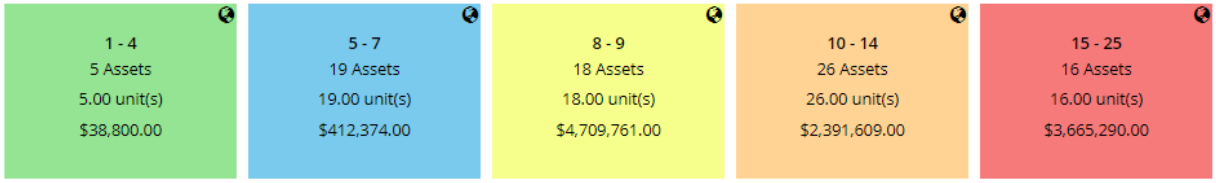


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.5.5 Risk & Criticality

Risk Matrix

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



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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (Economic)	Type of Service Score (Service Delivery)
	Department (Service Delivery)

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events
Changing temperatures, more extreme weather events, increased freeze-thaw cycles, and high amounts of snow can cause the Town's fleet to break down or experience mechanical issues at an accelerated rate. Additionally, increased salt usage can cause damage to the fleet. Ensuring that the fleet is undergoing regular inspections and

appropriate maintenance activities can help proactively avoid performance issues due to climate change and extreme weather events.

Growth

The Town's fleet currently does not have the capacity to support projected growth in the community. Municipal staff have expressed concern with achieving public expectations of fleet performance due to growth in the Town. Investing time and resources into the development of an enhanced renewal program, in consideration of the estimated useful lifespans of the vehicles, will ensure the Town is efficiently preparing for the anticipated growth.

4.5.6 Levels of Service

The following tables identify the Town's current level of service for fleet and fleet equipment assets. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Town 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 stormwater network.

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description or images of the types of vehicles (e.g. light, medium, and heavy-duty) that the Town operates and the services that they help to provide to the community	Refer to section 4.5.1
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to sections 4.5.4 & 4.5.5

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of fleet assets in poor or worse condition	28%
	% of fleet assets in fair or better condition	72%

4.5.7 Recommendations

Replacement Costs

- Gather accurate replacement costs and update on a regular basis to ensure the accuracy of capital projections.

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

4.6 Machinery & Equipment

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

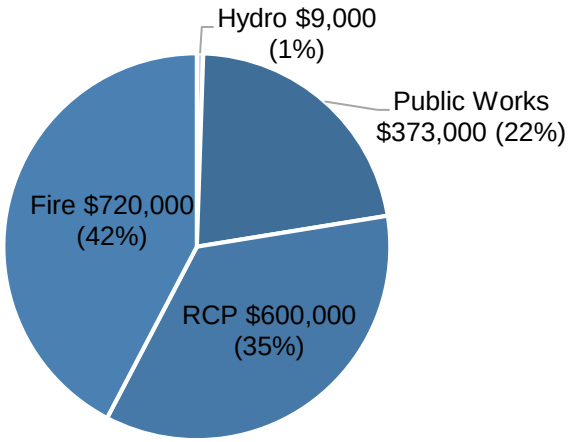
- Landscaping equipment to maintain public parks
- Fire equipment to support the delivery of emergency services
- Plows and sand hoppers to provide winter control activities

Keeping machinery and equipment in an adequate state of repair is important to maintain a high level of service.

4.6.1 Asset Inventory & Replacement Cost

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire	32	Assets	$720,000	CPI
Hydro	10	Assets	$9,000	User-defined
Public Works	32	Assets	$373,000	User-defined
RCP	166	Assets	$600,000	CPI

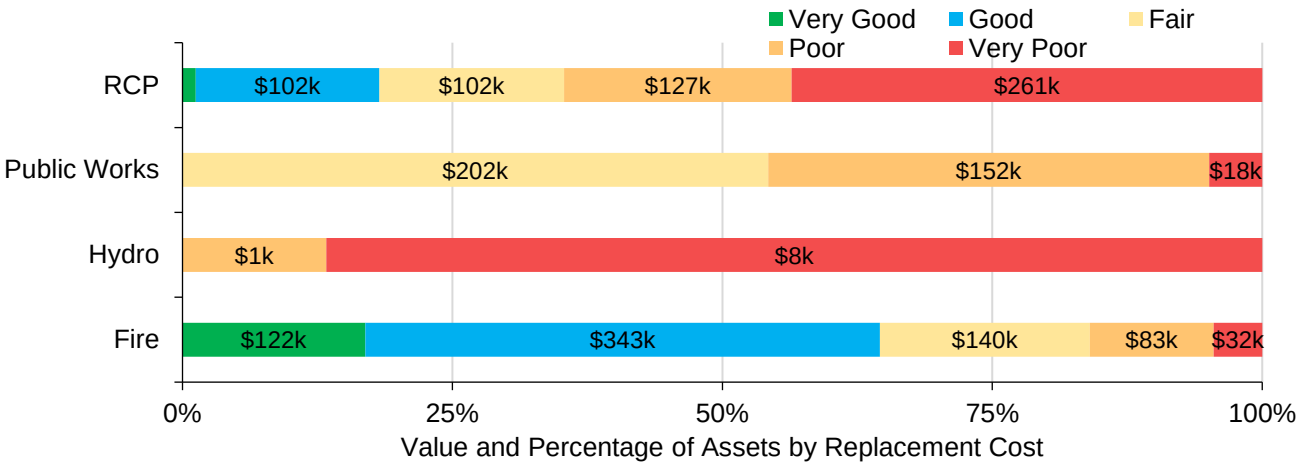


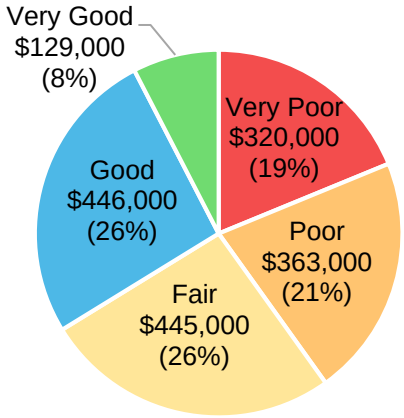
Total Current Replacement Cost: $1,703,000

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

4.6.2 Asset Condition

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





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

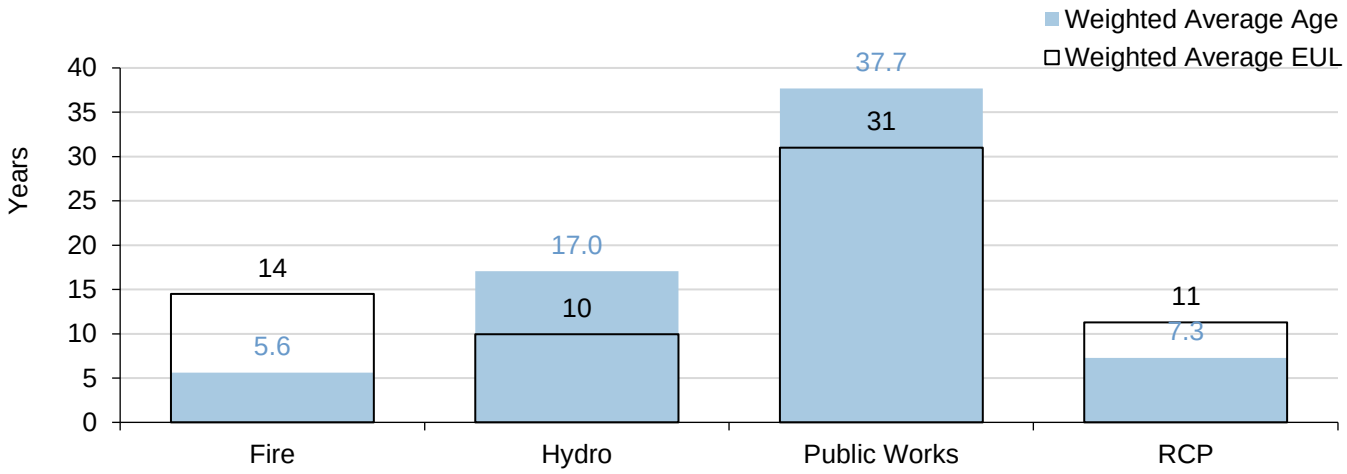
Current Approach to Condition Assessment

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 Town's current approach:

- Historically, there has not been formal condition assessment programs at the Town
- Going forward higher valued equipment will be internally assessed, on an annual basis
- A condition scale (1-5) will be utilized to document condition scores

4.6.3 Estimated Useful Life & Average Age

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. Assessed condition may increase or decrease the average service life remaining.



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.

4.6.4 Lifecycle Management Strategy

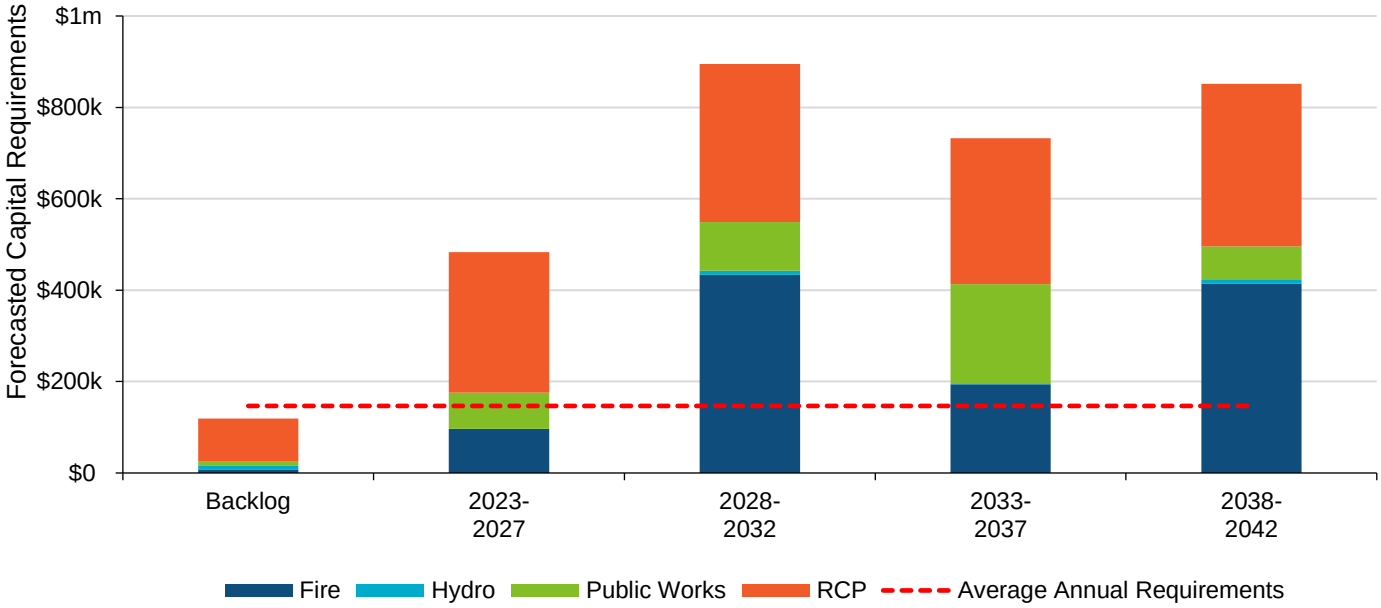
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Routine maintenance including oil changes, minor repairs, inspections.
	Fire Protection Services equipment is subject to a much more rigorous inspection and maintenance program compared to most other departments
	Machinery and equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff
Replacement	Replacement is considered when an asset's condition has deteriorated significantly, and maintenance is no longer cost-effective.
	Assets with an expected service life nearing its end or those incurring frequent and costly repairs are prioritized for replacement. High risk equipment will be replaced before low-risk equipment.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 20 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The



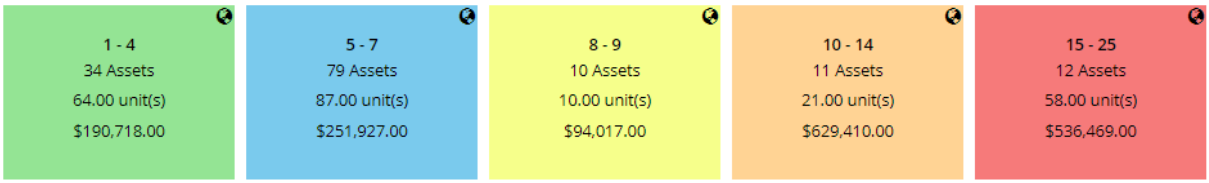
forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.

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

4.6.5 Risk & Criticality

Risk Matrix

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



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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (Economic)	Type of Service Score (Service Delivery)
	Department (Service Delivery)

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

Risks to Current Asset Management Strategies

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

Asset Data Confidence

There is low confidence in the asset data available to support asset management planning. Machinery and Equipment at the Town of Tillsonburg are purchased through various departments, therefore recordkeeping is typically kept in silos. This can be challenging to manage, however creating a comprehensive and accurate asset register is an essential first step to asset management planning. Once completed there will be greater confidence in the development of data-driven strategies to address Machinery and Equipment needs.

Climate Change and Extreme Weather Events

Increased frequency of extreme weather events can create increased use and strain on the available Machinery and Equipment. Ensuring that the Machinery and Equipment are undergoing regular inspections and appropriate maintenance activities can help extend their lifetimes and avoid premature replacement costs.

4.6.6 Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description or images of the types of vehicles (e.g. light, medium, and heavy-duty) that the Town operates and the services that they help to provide to the community	Refer to section 4.6.1
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to sections 4.6.4 & 4.6.5

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of machinery & equipment assets in poor or worse condition	40%
	% of machinery & equipment assets in fair or better condition	60%

4.6.7 Recommendations

Replacement Costs

- Town staff should continue refining its asset register by updating replacement costs. Replacement costs should be updated according to the best available information on the cost to replace the asset, using today's value.

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.

- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

4.7 Land Improvements

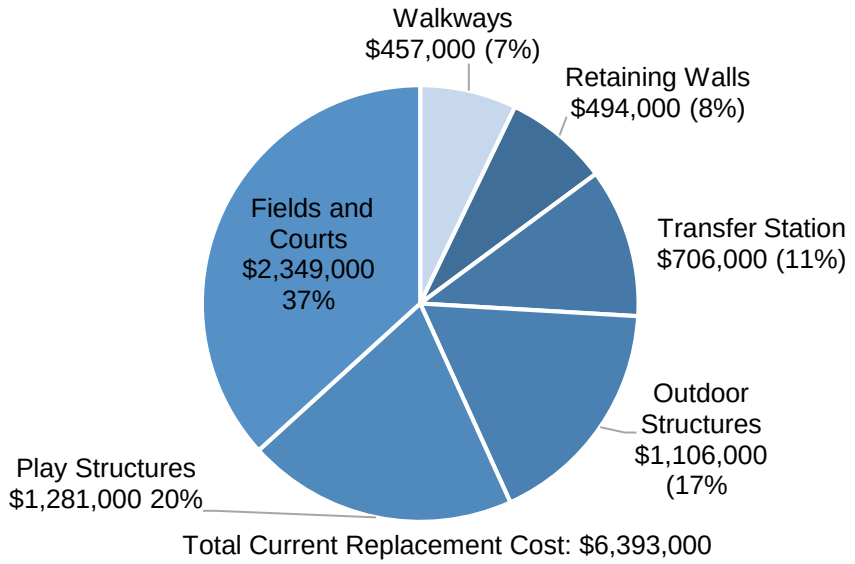
The Town of Tillsonburg owns various land improvement assets including:

- Fields and courts
- Outdoor structures
- Walkways
- Retaining walls
- Play structures

4.7.1 Asset Inventory & Replacement Cost

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

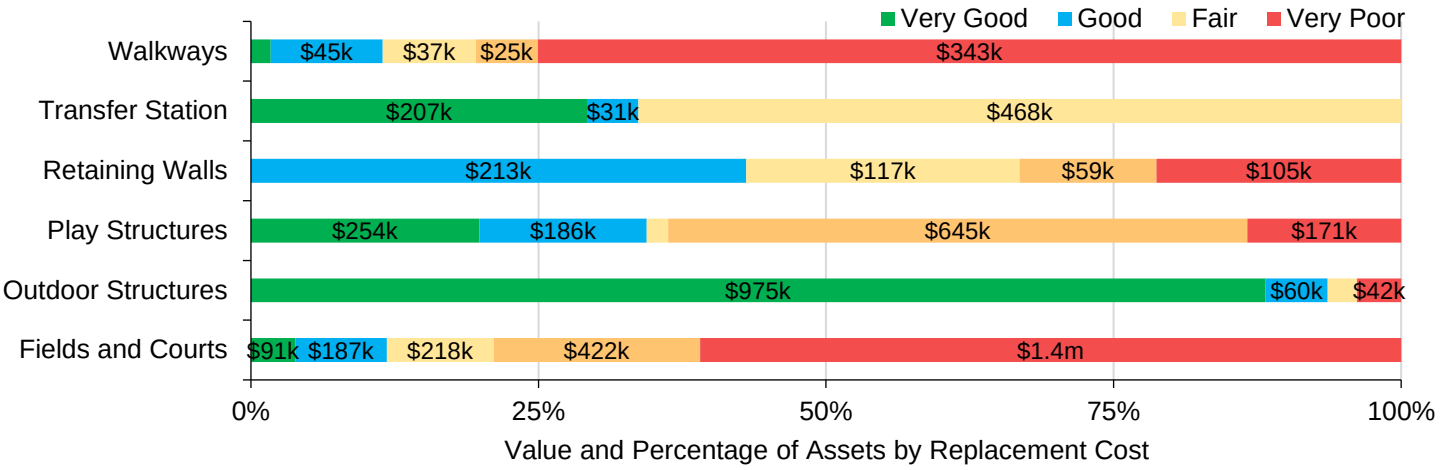
Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fields and Courts	30	Assets	$2,349,000	CPI
Outdoor Structures	27	Assets	$1,106,000	CPI
Play Structures	24	Assets	$1,281,000	CPI
Retaining Walls	27	Assets	$494,000	CPI
Transfer Station	3	Assets	$706,000	CPI
Walkways	2,963	Meters	$457,000	Cost per unit

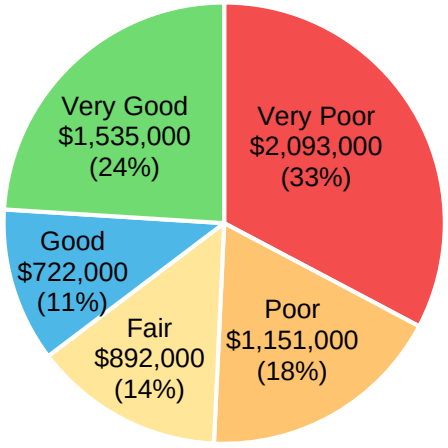


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

4.7.2 Asset Condition

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





To ensure that the Town's land improvements continue to provide an acceptable level of service, the Town 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.

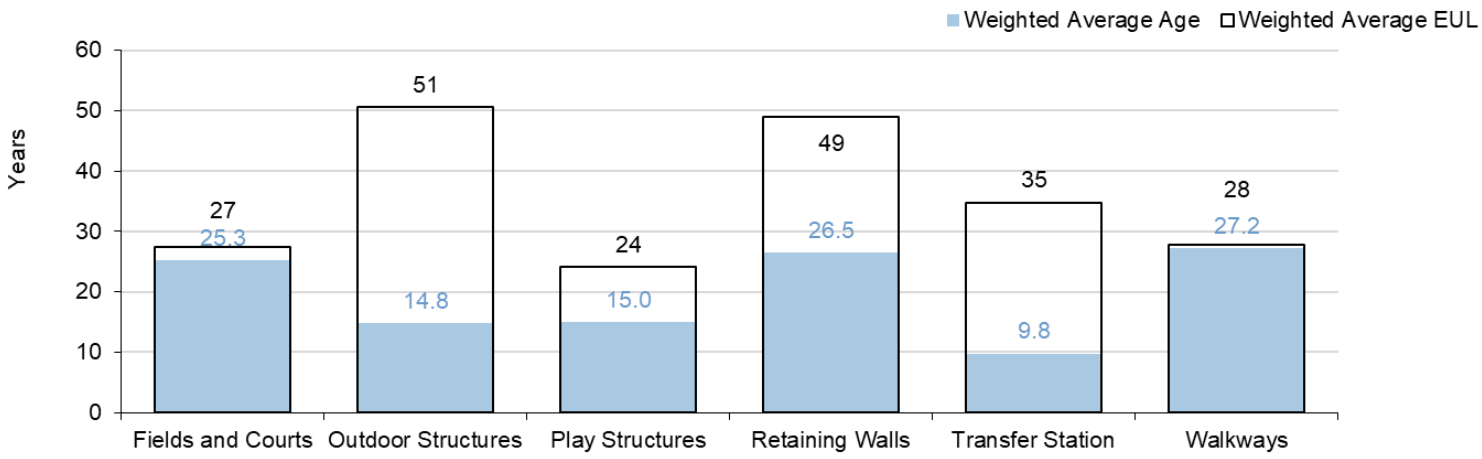
Current Approach to Condition Assessment

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 Town's current approach:

- Regular inspections are crucial for identifying potential hazards, wear and tear, or other issues, allowing for timely maintenance and ensuring the safety of those using the facilities.
- Routine condition assessments are completed by internal staff. Inspected assets include playgrounds, sport fields, and trails
- With recreational facilities, the Town is considering the engagement of external contractors for a more comprehensive inspection every three years

4.7.3 Estimated Useful Life & Average Age

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. Assessed condition may increase or decrease the average service life remaining.



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.

4.7.4 Lifecycle Management Strategy

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

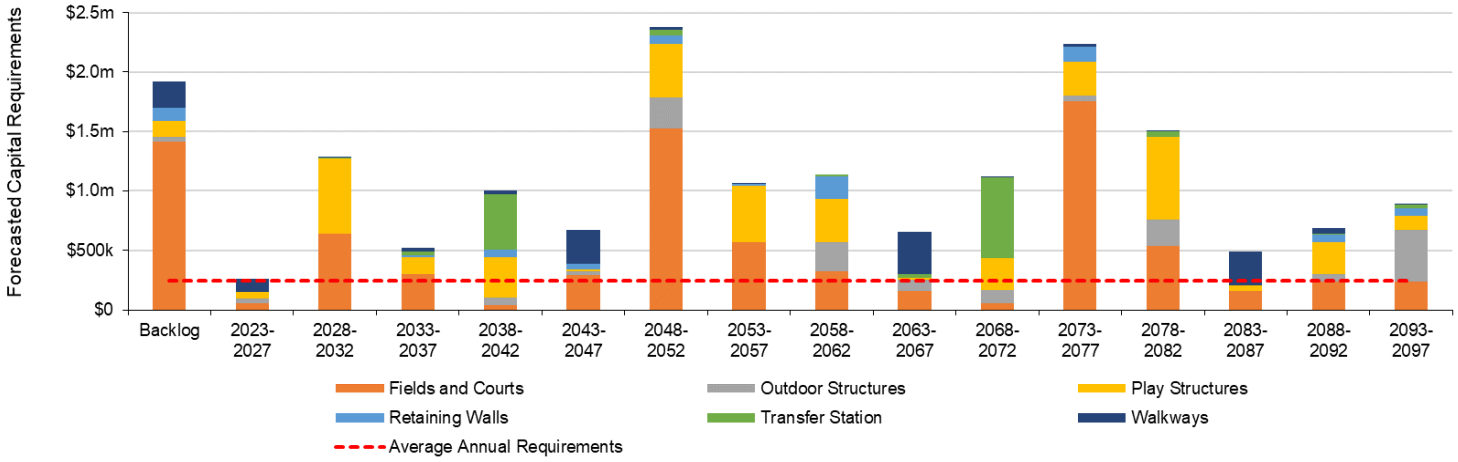
The following table outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Inspection	During the spring, summer and fall playgrounds are inspected weekly by Town staff. Inspection checklists include a review of each applicable playground component (i.e. swings, structure) for its saftey compliance (i.e. fastening points)
	To ensure that playgrounds are safe and in good condition for use during the winter months, comprehensive inspections are performed between March and October by Town staff with specialized playground saftey standard and inspection training.
	Sports fields are inspected for saftey and condition on a daily basis throughout the playing season.
	Walking trails are inspected monthly; any identified health and saftey issues are addressed as quickly as possible.
Maintenance	Maintenance activities may be triggered through staff inspections or public complaints; most often these are due to asset failure or performance issues.
Rehabilitation Replacement	Rehabilitation activities vary based on the asset type. Some common rehabilitation activities include addition of playground protective surfgace, painting to preserve structures, systematic part replacements or upgrades to enhance equipment durability.
Replacement	Playground assets are planned for replacement in most cases based on a 15-year schedule. Replacement schedules consider the expected lifespan of the asset (i.e. age), routine inspection records including the frequency of reported issues (i.e. condition), and public input (i.e. customer satisfaction).

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 75 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The

forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.

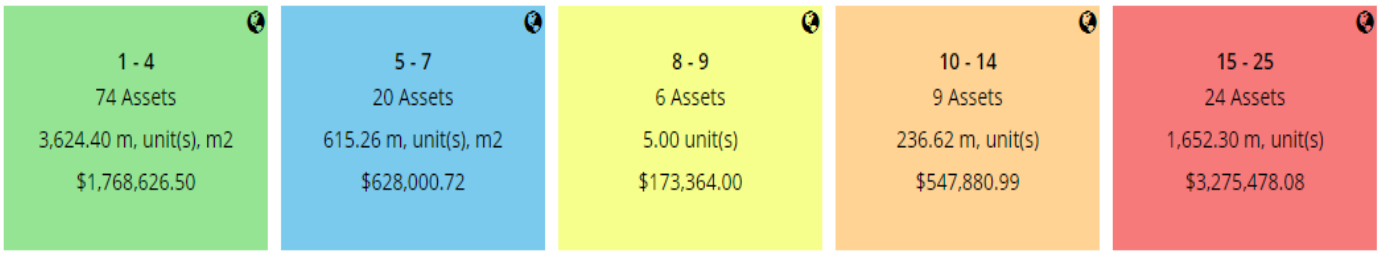


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.7.5 Risk & Criticality

Risk Matrix

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



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

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

Probability of Failure (POF)	Consequence of Failure (COF)

Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (%) (Economic)	

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

Risks to Current Asset Management Strategies

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

Population Growth

Since 2016 the Town of Tillsonburg has experienced significant population growth (17.3% 2016 to 2021). This increase in population has also increased the demand on land-improvement assets, especially since the construction of new land improvement assets has not occurred at the same rate as growth. With additional use, the condition of the Town's existing land improvement assets may decline more rapidly and/or require earlier and more significant investment.

Capital Funding Strategies

Major capital rehabilitation projects for Land Improvements are very dependant on the availability of grant funding opportunities. When grants are not available, projects may be deferred. Moreover, Town staff have expressed that they are severely underfunded and don't have available funds to maintain a good state of repair or prepare for anticipated levels of growth. An annual capital funding strategy reduce dependency on grant funding and help prevent deferral or capital works.

Climate Change and Extreme Weather Events

Increased precipitation and runoff events have historically caused overflowing in the streams in Town, which affect Land Improvement assets such as parks and trails. More intense heat events, and prolonged exposure to dry and hot conditions have led to turf management problems and issues with the baseball fields of Tillsonburg. Climate change and extreme weather events make planning for the future difficult, however the Town should prioritize investing in more resilient and durable materials to withstand intense weather events, such as permeable pavement. Structures such as green culverts and swales can help prevent flooding in parks and trails.

4.7.6 Levels of Service

The following tables identify the Town's current level of service for land improvement assets. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Town 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 improvement assets.

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include maps, of the types of land improvements that the Town operates and maintains	Refer to section 4.7.1
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to sections 4.7.4 & 4.7.5

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of land improvement assets in poor or worse condition	51%
	% of land improvement assets in fair or better condition	49%

4.7.7 Recommendations

Replacement Costs

- Town staff should continue refining its asset register by updating replacement costs. Replacement costs should be updated according to the best available information on the cost to replace the asset, using today's value.

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service

4.8 Technology & Communication

The Town of Tillsonburg owns several assets pertaining to technology and communication. Assets include:

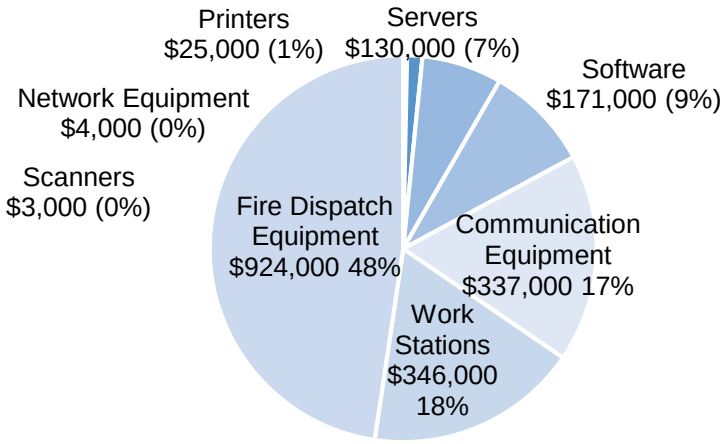
- Communication equipment
- Fire dispatch equipment
- Computer hardware
- Servers
- Workstations

4.8.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Town's technology and communications assets.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Communication Equipment	146	Assets	$337,000	CPI
Fire Dispatch Equipment	11	Assets	$924,000	CPI
Network Equipment	1	Assets	$4,000	CPI
Printers	2	Assets	$25,000	CPI
Scanners	1	Assets	$3,000	CPI
Servers	12	Assets	$130,000	CPI
Software	5	Assets	$171,000	CPI
Work Stations	132	Assets	$346,000	CPI

Each

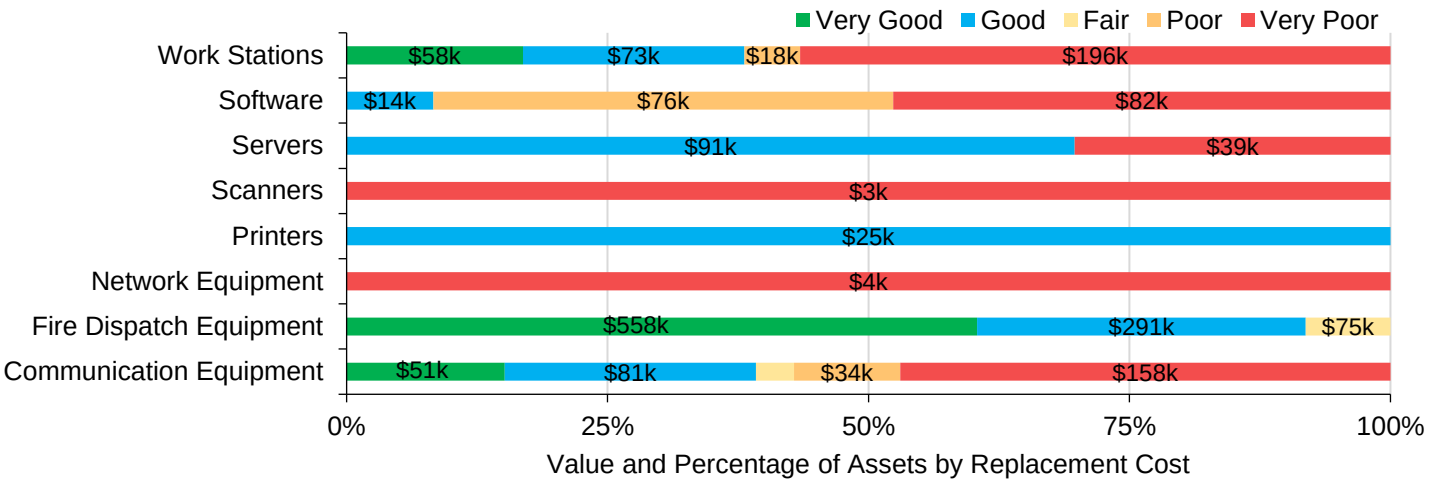


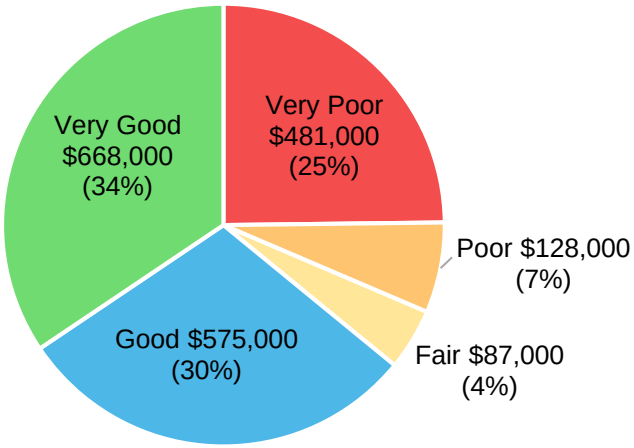
Total Current Replacement Cost: $1,940,000

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

4.8.2 Asset Condition

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





To ensure that the Town's technology assets continue to provide an acceptable level of service, the Town 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 technology and communication assets.

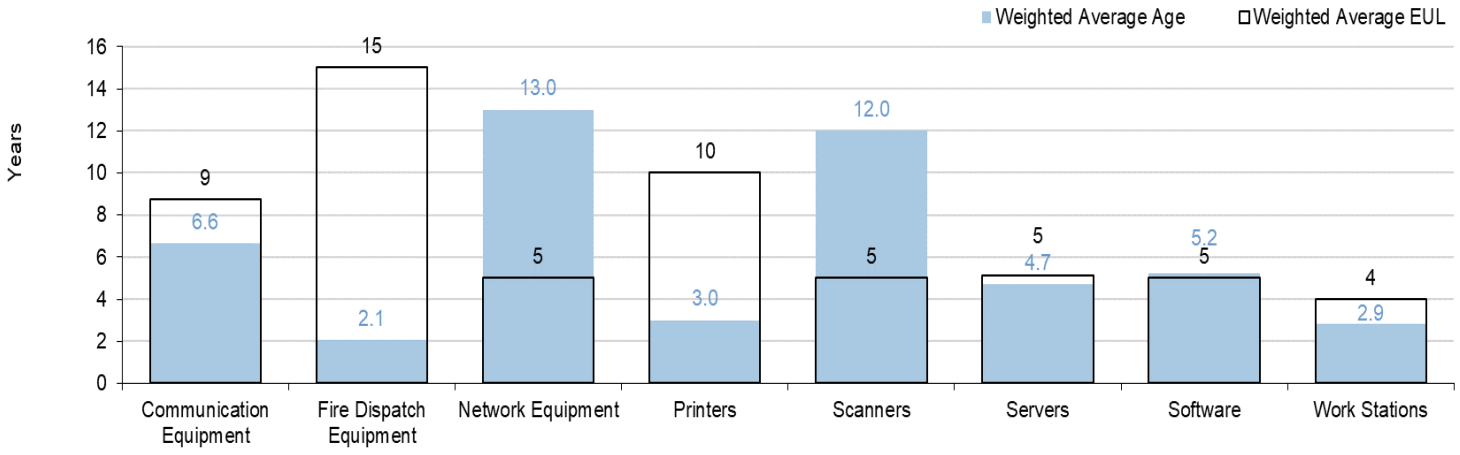
Current Approach to Condition Assessment

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 Town's current approach:

- There are currently no formal condition assessment programs in place; asset age is used as a proxy to determine asset condition

4.8.3 Estimated Useful Life & Average Age

The Estimated Useful Life for technology and communication assets 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. Assessed condition may increase or decrease the average service life remaining.



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.

4.8.4 Lifecycle Management Strategy

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

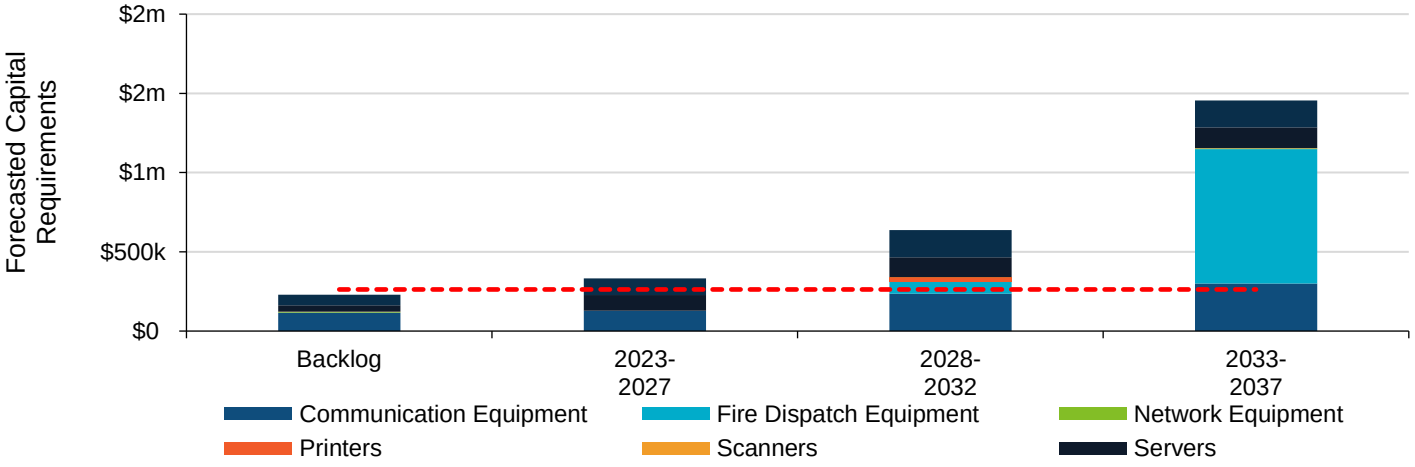
The following table outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Inspection	At this time, assets are not assessed for condition
Maintenanace	The Town conducts a varierty of maintenance acitviites to ensure optimal asset performance, security, and reliability. The frequency of these activities varies based on the nature of the task and ranges from daily (i.e., Backup procedure; critical data) to bi-annually (i.e., user access reviews).
	Most maintenance activities are completed on a regular schedule. In some instance, maintenance activities may be triggered by

	emergent issues (e.g., security alerts, user-reported issues, perfomance degradation).
Rehabilitation	Rehabilitation activities are conducted on mission-crtical assets (e.g. servers, network equipment); the focus is to extend the useful life of hardware.
Replacement	Replacement may be considered when performance can no longer meet the requirements, and/or when the frequency and cost of failures are greater than the cost of replacement.
	Additional considerations for replacement may include technological obsolescence or where assets are not regulatory compliant and upgrade is more costly than replacement.
	Asset replacement is prioritized where they have a critical impact on business operations or public safety. Often these include mission-critical servers, netowrking equipment, data storage systems, security appliances, and end-user devises.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 15 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.

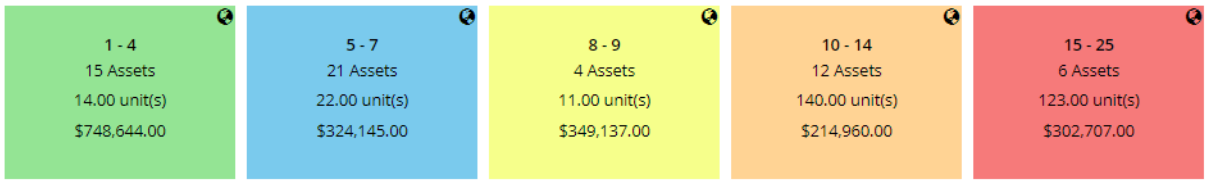


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.8.5 Risk & Criticality

Risk Matrix

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



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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition (Economic)	Replacement Cost (Economic)
Service Life Remaining (%) (Economic)	

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

Risks to Current Asset Management Strategies

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

Asset Data and Information
Staff have limited confidence in the accuracy of data and information for technology and communication assets. This hinders the ability to make lifecycle management decisions confidently and accurately understand asset inventory and asset risks. The development of the AMP has provided some improvements to accuracy and extent of the Town's information, however there are still opportunities for enhancement. As the Town's asset information becomes more accurate,

the benefits to asset management planning and decisions are expected to further improve.

Public Expectations and Regulatory Compliance
Regulatory compliance is at risk of not being met which could result in financial penalties and reputational damage. Further, public expectations especially related to technology are rapidly increasing and the Town does not necessarily have the resources, financial and staff, to meet these increased expectations.

4.8.6 Levels of Service

The following tables identify the Town's current level of service for technology and communication assets. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Town 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 improvement assets.

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description or images of the types of technology & communication assets that the Town operates and the services that they help to provide to the community	Refer to section 4.8.1
Quality	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to sections 4.8.4 & 4.8.5

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of technology & communication assets in poor or worse condition	31%

% of technology & communication assets in fair or better condition	69%

4.8.7 Recommendations

Replacement Costs

- Town staff should continue refining its asset register by updating replacement costs. Replacement costs should be updated according to the best available information on the cost to replace the asset, using today's value.

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service

5 Impacts of Growth

Key Insights

Understanding the key drivers of growth and demand will allow the Town to plan for new infrastructure, and the upgrade or disposal of existing infrastructure more effectively.

Growth between 2016 and 2021 was substantially greater than forecasted. Moderate population and employment growth is forecasted beyond 2021.

The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service.

5.1 Description of Growth Assumptions

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

5.1.1 The Town of Tillsonburg Community Strategic Plan (Amended 2023)

The current Community Strategic Plan was approved on June 18, 2021, by Tillsonburg Town Council, and updated in April 2023. The purpose of the Community Strategic Plan is to provide a roadmap for municipal projects, priorities, and initiatives. The Strategic Plan has five Corporate Goals:

1. Lifestyle and Amenities
2. Customer Service, Communication, and Engagement
3. Business Attraction, Retention, and Expansion
4. Community Growth
5. Connectivity and Transportation

The Community Growth section of the Strategic Plan highlights the Town's strategic directions and ongoing projects contributing to the goal of accommodating and supporting sustainable growth. The strategic directions of the Town include promoting, preserving, and enhancing the downtown core as the retail centre and community hub of Tillsonburg, as well as pursuing the acquisition of additional municipal land to accommodate expected growth. The Town also plans to develop a long-term financing strategy for new services and infrastructure to support growth.

Ongoing projects to support community growth in the Town of Tillsonburg include the expansion of emergency services. In the immediate term (1–3-year implementation), the Town intends to implement Project Big Swing (an initiative to update municipal recreation facilities, among other assets), as well as implementing the boundary expansion initiative, and more. In the short term (3–5-year implementation), the Town intends to implement increased public engagement in planning policies and placemaking, as well as update the Recreation Master Plan. In the medium term (5–10-year implementation), the Town plans to implement a Downtown Parking Strategy and a resourcing review to service growth.

5.1.2 Development Charge Background Study (March 2024)

The Development Charge Background Study completed by Watson & Associates Economists Ltd. in 2024 which provided population and housing projections shown in the table below.

	Population	Total Households
Mid 2021	18,047	8,030
Mid 2024	19,521	8,776
Mid 2034	25,178	11,447
Projected Growth (2021-2034)	39.5%	42.6%

Over the next ten years, Tillsonburg is expected to experience significant growth. Population is projected to increase from approximately 19,521 in 2024 to 25,178 by 2034, which will require the Town to build about 2,671 new homes during this period.

Non-residential growth is also expected to be significant, with about 1,597,000 square feet of new building space by 2034. This additional building space will support services and infrastructure for the growing community and provide the required municipal services and amenities.

To manage this growth, investment in infrastructure including roads, fire services, and parks is recommended. The total cost for these projects is expected to be $78.7 million over ten years, with $26.4 million covered by development charges, after accounting for statutory and non-statutory exemptions and reduction policies. These investments are essential to ensure the Town can support the growing population and new businesses, creating a supportive environment for future residents and businesses.

5.1.3 Oxford County Official Plan (Amended 2023)

The Oxford County Official Plan was adopted by Oxford County Council on December 13, 1995. The Plan has been continuously updated and amended since then, with the latest amendments being adopted in July 2023. Section 8 of the Oxford County Official Plan, entitled Land Use Policies for the Town of Tillsonburg, provides general policy direction and a long-range planning framework for development in the Town of Tillsonburg.

5.2 Impact of Growth on Lifecycle Activities

By July 1, 2025, the Town'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 Town'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 Town will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to, at a minimum, maintain the current level of service.

6 Financial Strategy

Key Insights

The Town is committing approximately $3.4 million towards capital projects per year from sustainable revenue sources

Given the annual capital requirement of $9.1 million, there is currently a funding gap of $5.7 million

Recommendation: increasing tax revenues by 1.0% each year for the next 20 years to achieve a sustainable level of funding. Alternatively, by increasing tax revenues by 1.4% each year for the next 15 years, Tillsonburg would achieve a sustainable level of funding

6.1 Financial Strategy Overview

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

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

1. The financial requirements for:
    a. Existing assets
    b. Existing service levels
    c. Requirements of contemplated changes in service levels (none identified for this plan)
    d. Requirements of anticipated growth (none identified for this plan)
2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Reserves
    d. Debt
    e. Development charges
3. Use of non-traditional sources of municipal funds:
    a. Reallocated budgets
    b. Partnerships
    c. Procurement methods
4. Use of Senior Government Funds:
    a. Gas tax
    b. Annual grants

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

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

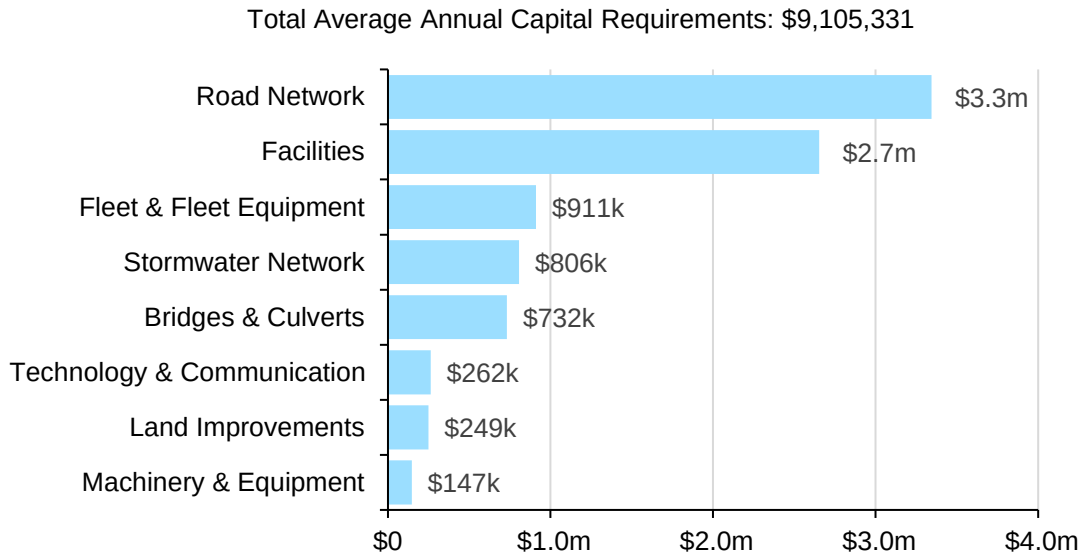
1. To reduce financial requirements, consideration has been given to revising service levels downward.
2. All asset management and financial strategies have been considered. For example:

a. If a zero-debt policy is in place, is it warranted? If not the use of debt should be considered.
b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.

6.1.1 Annual Requirements & Capital Funding

Annual Requirements

The annual requirements represent the amount the Town should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability. In total, the Town must allocate approximately $9.1 million annually to address capital requirements for the assets included in this AMP.



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

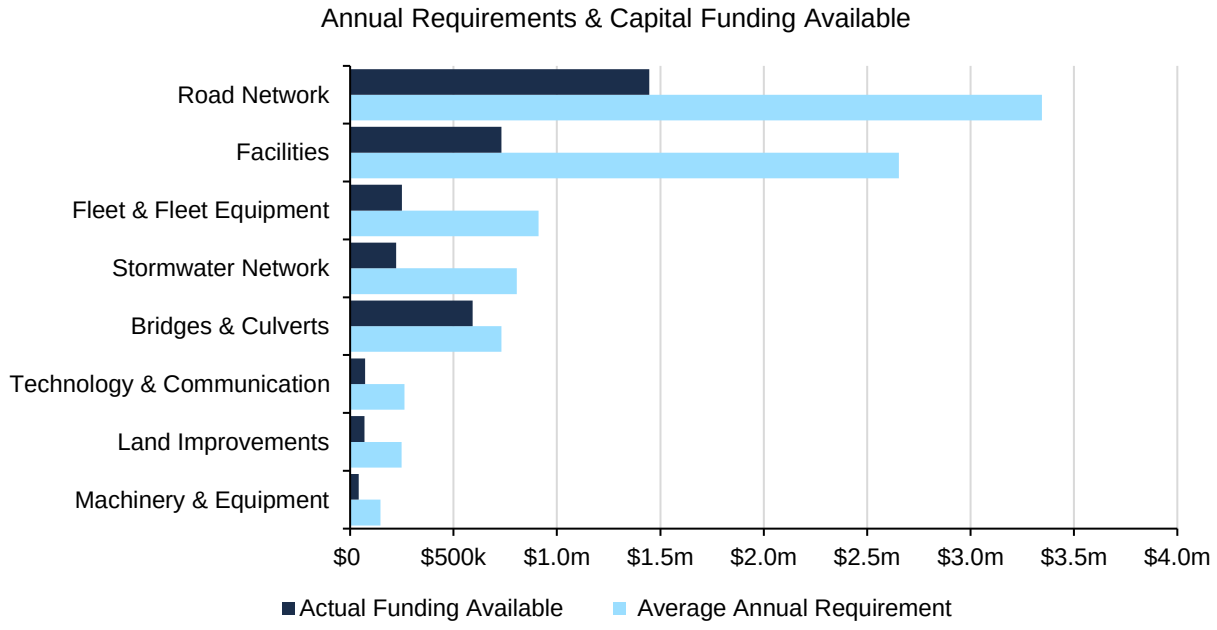
However, for the Road Network, Bridges & Culverts, and Facilities, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Town's assets. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following compares two scenarios for the aforementioned categories:

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

The implementation of a proactive lifecycle strategies for various asset categories leads to a potential annual cost avoidance of $117,182. As the lifecycle strategy scenario represents the lowest cost option available to the Town, we have used these annual requirements in the development of the financial strategy.

Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately $3,424,000 towards capital projects per year. Given the annual capital requirement of $9,106,000, there is currently a funding gap of $5,682,000 annually.



6.2 Funding Objective

We have developed a scenario that would enable Tillsonburg to achieve full funding within 1 to 20 years for the following assets:

1. **Tax Funded Assets:** Road Network, Bridges & Culverts, Stormwater Network, Facilities, Fleet & Fleet Equipment, Machinery & Equipment, Land Improvements, and Technology & Communication

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

6.3 Financial Profile: Tax Funded Assets

6.3.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Taxes	Gas Tax	OCIF	Total Available	
Bridges & Culverts	$732,000	$202,000		$390,000	$592,000	$140,000
Facilities	$2,654,000	$731,000			$731,000	$1,923,000
Land Improvements	$249,000	$69,000			$69,000	$180,000
Machinery & Equipment	$147,000	$41,000			$41,000	$106,000
Road Network	$3,345,000	$921,000	$525,000		$1,446,000	$1,899,000
Stormwater Network	$806,000	$222,000			$222,000	$584,000
Fleet & Fleet Equipment	$911,000	$251,000			$251,000	$660,000
Technology & Communication	$262,000	$72,000			$72,000	$190,000
	$9,106,000	**$2,509,000**	**$525,000**	**$390,000**	**$3,424,000**	**$5,682,000**

The average annual investment requirement for the above categories is $9.1 million. Annual revenue currently allocated to these assets for capital purposes is $3.4 million leaving an annual deficit of $5.7 million. Put differently, these infrastructure categories are currently funded at 38% of their long-term requirements.

6.3.2 Full Funding Requirements

In 2023, the Town of Tillsonburg has annual tax revenues of $19,147,583. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Bridges & Culverts	0.7%
Facilities	10.0%
Land Improvements	0.9%
Machinery & Equipment	0.6%
Road Network	9.9%
Stormwater Network	3.0%
Fleet & Fleet Equipment	3.4%
Technology & Communication	1.0%
	29.5%

The following changes in costs and/or revenues over the next number of years should also be considered in the financial strategy:

a) Tillsonburg's debt payments for these asset categories will be decreasing by
    a. $747,900 over the next 5 years
    b. $1,118,400 over the next 10 years
    c. 1,466,400 over the next 15 years
    d. 1,576,800 over the next 20 years

Our recommendations include capturing the above changes and allocating them to the infrastructure deficit outlined above. The table below outlines this concept and presents several options:

	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	$5,682,000	$5,682,000	$5,682,000	$5,682,000	$5,682,000	$5,682,000	$5,682,000	$5,682,000
Change in Debt Costs	N/A	N/A	N/A	N/A	-747,900	-$1,118,400	-$1,466,400	-$1,576,800
Change in OCIF Grants	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Resulting Infrastructure Deficit:	$5,682,000	$5,682,000	$5,682,000	$5,682,000	$4,934,100	$4,563,600	$4,215,600	4,105,200
Tax Increase Required	29.7%	29.7%	29.7%	29.7%	25.8%	23.8%	22.0%	21.4%
Annually:	**5.4%**	**2.7%**	**1.8%**	**1.4%**	**4.7%**	**2.2%**	**1.4%**	**1.0%**

6.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 20-year option that includes capturing changes from reallocating debt costs to the infrastructure deficit. This involves full funding being achieved over 20 years by:

a) maintaining tax revenues collected specifically for asset management at 1% each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP. This is in line with the recent Council approved long-term annual capital levy increase of 1%. Tillsonburg may also opt to select the 15-year option which would see tax revenues increased by 0.4% each year for the next 15-years specifically for the purpose of phasing in full funding (this in addition to the 1% already collected by Tillsonburg).
b) when realized, reallocating the debt cost reductions of $1,466,400 (15-year) or $1,576,800 (20-year) to the infrastructure deficit as outlined above.
c) allocating the current gas tax and OCIF revenue as outlined previously.
d) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
e) continue to enhance the quality and quantity of available data, including information on replacement costs, estimated useful lives, and asset conditions. This improvement will positively impact asset management and facilitate better decision-making.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment[13].
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.
3. The Town is actively addressing the annual deficit by having approved an increase to the capital levy of 4.32% for 2023. This is part of an ongoing effort to address asset management as the budgeted capital levy in 2024 and 2025 will increase by 3% each year, followed by an 1% increase in 2026 and each following year. This resulted in the Town's capital levy increasing from $1.7M in 2022 to $3.9M in 2026 which represents a 124% increase over this period alone.

Although this option achieves full funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of $4,445,614 for the Road Network, $1,916,736 for Land Improvements, $306,886 for Technology & Communication, $198,923 for facilities, $108,613 for Stormwater Network, $94,237 for Machinery & Equipment, and $8,000 for Fleet and Fleet Equipment.

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

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

6.4 Use of Debt

Debt can be strategically utilized as a funding source with in the long-term financial plan. The benefits of leveraging debt for infrastructure planning include:

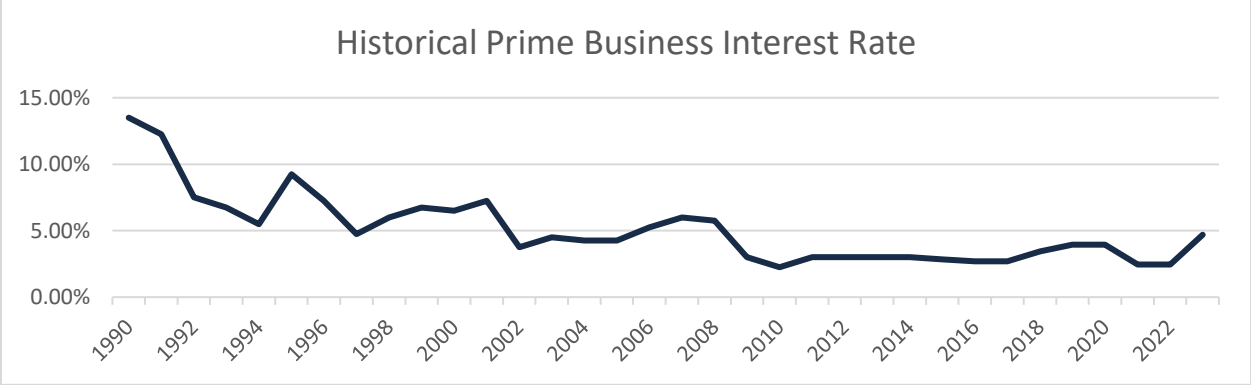
a) the ability to stabilize tax & user rates when dealing with variable and sometimes uncontrollable factors

b) equitable distribution of the cost/benefits of infrastructure over its useful life

c) a secure source of funding

d) flexibility in cash flow management

Debt management policies and procedures with limitations and monitoring practices should be considered when reviewing debt as a funding option. In efforts to mitigate increasing commodity prices and inflation, interest rates have been rising. Sustainable funding models that include debt need to incorporate the now current realized risk of rising interest rates. The following graph shows the historical changes to the lending rates:



A change in 15-year rates from 5% to 7% would change the premium from 45% to 65%. Such a change would have a significant impact on a financial plan.

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a $1 million project financed at 3.0%[14] over 15 years would result in a 26% premium or $260,000 of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

The Town of Tillsonburg employs a strategic policy of using debt as one component

[14] Current municipal Infrastructure Ontario rates for 15-year money is 3.2%.

of its comprehensive asset management funding approach. Effectively and sustainably leveraging debt can significantly contribute to reducing the infrastructure deficit, potentially accelerating the timeline compared to relying solely on tax or rate levies alone. Therefore, the Town should continue to incorporate debt in its asset management funding strategy.

Table 1: Premiums Paid

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

The following tables outline how Tillsonburg has historically used debt for investing in the asset categories as listed. There is currently $11,404,203 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $1,662,500, well within its provincially prescribed maximum of $3,875,535 (2023 ARL).

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2024	2025	2026	2027	2028	2029	2034
Bridges & Culverts	$11,200	$11,000	$10,500	$10,200	$9,900	$9,600	$7,900
Facilities	$379,000	$367,500	$335,300	$325,700	$316,500	$291,000	$163,000
Land Improvements	$92,400	$89,400	$86,500	$83,500	$69,000	$66,600	$34,900
Machinery & Equipment	$31,500	$31,200	$25,400	$19,600	$15,600	$15,400	
Road Network	$581,000	$565,300	$528,200	$492,900	$555,100	$300,500	$257,600
Stormwater Network							
Fleet & Fleet Equipment	$510,100	$480,500	$421,100	$338,600	$288,000	$224,600	$78,000
Technology & Communication	$57,300	$48,600	$47,800	$17,000	$16,000	$6,900	$2,700
Total Tax Funded:	**$1,662,500**	**$1,593,500**	**$1,454,800**	**$1,287,500**	**$1,270,100**	**$914,600**	**$544,100**

The revenue options outlined in this plan allow Tillsonburg to fully fund its long-term infrastructure requirements without further use of debt.

6.5 Use of Reserves

6.5.1 Available Reserves

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

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

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

Asset Category	Balance at December 31, 2022
Bridges & Culverts	$129,874
Facilities	$1,716,265
Land Improvements	$555,910
Machinery & Equipment	$279,255
Road Network	$1,942,572
Stormwater Network	$129,874
Fleet & Fleet Equipment	$1,184,814
Technology & Communication	$260,445
Total	**$6,199,005**

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

a) breadth of services provided
b) age and condition of infrastructure
c) use and level of debt
d) economic conditions and outlook
e) internal reserve and debt policies

These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with Tillsonburg's judicious use of debt in the past, allows the scenarios to assume that, if required, available reserves and

debt capacity can be used for high priority and emergency infrastructure investments in the short-to-medium term.

6.5.2 Recommendation

In 2025, Ontario Regulation 588/17 will require Tillsonburg to integrate proposed levels of service for all asset categories in its asset management plan update. We recommend that future planning should reflect adjustments to service levels and their impacts on reserve balances.

7 Appendices

Key Insights

Appendix A includes a one-page report card with an overview of key data from each asset category

Appendix B identifies projected 10-year capital requirements for each asset category

Appendix C includes several maps that have been used to visualize the current level of service

Appendix D provides additional guidance on the development of a condition assessment program

Appendix A:

Infrastructure Report Card

Asset Category	Replacement Cost (millions)	Asset Condition	Financial Capacity	
Road Network	$157.8	Good	Annual Requirement:	$3,345,000
			Funding Available:	$1,446,000
			Annual Deficit:	**$1,899,000**
Bridges & Culverts	$31.0	Good	Annual Requirement:	$732,000
			Funding Available:	$592,000
			Annual Deficit:	$140,000
Stormwater Network	$57.4	Good	Annual Requirement:	$806,000
			Funding Available:	**$222,000**
			Annual Deficit:	$584,000
Facilities	$95.0	Very Good	Annual Requirement:	$2,654,000
			Funding Available:	**$731,000**
			Annual Deficit:	$1,923,000
Fleet & Fleet Equipment	$11.2	Fair	Annual Requirement:	$911,000
			Funding Available:	**$251,000**
			Annual Deficit:	$660,000
Machinery & Equipment	$1.7	Fair	Annual Requirement:	$147,000
			Funding Available:	**$41,000**
			Annual Deficit:	$106,000
Land Improvements	$6.4	Fair	Annual Requirement:	$249,000
			Funding Available:	**$69,000**
			Annual Deficit:	$180,000
Technology & Communication	$1.9	Fair	Annual Requirement:	$262,000
			Funding Available:	**$72,000**
			Annual Deficit:	$190,000
Overall	**$362.4**	Good	Annual Requirement:	$9,106,000
			Funding Available:	$3,424,000
			Annual Deficit:	**$5,682,000**

Appendix B: 10-Year Capital Requirements

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

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Road Network	Municipal Parking Lots	$3.7m	$3.7m	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Paved Roads	$13.4m	$331k	$5.7m	$1.5m	$316k	$465k	$505k	$792k	$1.0m	$1.0 m	$739 k	$924k
	Poles	$1.3m	$283k	$85k	$42k	$746k	$0	$3k	$55k	$7k	$0	$0	$39k
	Sidewalks	$879k	$132k	$130k	$168k	$190k	$133k	$0	$19k	$0	$49k	$0	$59k
	Signs	$236k	$135k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$101k
	Streetlights	$0											

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Bridges & Culverts	Bridges	$4.1m	$0	$0	$21k	$4.5m	$188k	$44k	$0	$182k	$0	$110k	$0
	Culverts	$6.1m	$0	$0	$2.5m	$0	$623k	$1.9m	$577k	$467k	$0	$0	$0
	Retaining Walls	$2.7m	$0	$0	$406k	$0	$0	$1.4m	$548k	$0	$312k	$0	$0

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Stormwater Network	Catch Basin Leads	$46k	$8k	$0	$12k	$0	$0	$0	$0	$0	$26k	$0	$0
	Catch Basins	$7k	$2k	$0	$0	$0	$0	$5k	$0	$0	$0	$0	$0
	Ditch Inlets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Mains	$287k	$98k	$0	$0	$29k	$0	$0	$0	$0	$159k	$0	$0
	Manholes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Stormceptors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	SWM Ponds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Facilities	Airport	$1.4m	$0	$0	$0	$0	$0	$0	$362k	$0	$966k	$36k	$0
	Corporate Services	$4.4m	$0	$164k	$117k	$95k	$60k	$7k	$3.4m	$0	$178k	$29k	$381k
	Fire	$2.1m	$0	$220k	$213k	$53k	$0	$0	$1.1m	$145k	$251k	$0	$106k
	OPP	$5.0m	$0	$184k	$174k	$1.0m	$210k	$91k	$2.8m	$0	$61k	$206k	$289k
	Public Works	$1.6m	$0	$100k	$23k	$46k	$59k	$0	$1.2m	$0	$61k	$0	$84k
	RCP	$37.9m	$0	$946k	$1.7m	$1.9m	$739k	$0	$19.0m	$4.5m	$3.4m	$619k	$5.1m

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Fleet & Fleet Equipment	Building & By-Law	$134k	$0	$0	$0	$0	$0	$0	$88k	$46k	$0	$0	$0
	Engineering	$40k	$0	$0	$0	$0	$0	$0	$40k	$0	$0	$0	$0
	Fire	$1.5m	$0	$140k	$1.1m	$0	$0	$0	$0	$70k	$78k	$140k	$0
	Hydro	$1.3m	$0	$0	$0	$35k	$0	$0	$382k	$0	$436k	$479k	$0
	Public Works	$4.6m	$8k	$586k	$0	$734k	$72k	$1.5m	$317k	$1.1m	$40k	$210k	$11k
	RCP	$685k	$0	$0	$13k	$308k	$122k	$66k	$0	$82k	$93k	$0	$0

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Machinery & Equipment	Fire	$538k	$8k	$1k	$23k	$12k	$31k	$29k	$40k	$16k	$281k	$1k	$96k
	Hydro	$17k	$8k	$0	$0	$0	$0	$0	$1k	$0	$1k	$7k	$0
	Public Works	$196k	$10k	$0	$5k	$5k	$15k	$55k	$9k	$3k	$81k	$6k	$8k
	RCP	$745k	$93k	$118k	$70k	$84k	$23k	$12k	$93k	$74k	$111k	$26k	$41k

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Land Improvements	Fields and Courts	$2.1m	$1.4m	$21k	$0	$0	$38k	$0	$38k	$0	$21k	$371k	$212k
	Outdoor Structures	$81k	$42k	$38k	$0	$0	$0	$0	$0	$0	$717	$0	$0
	Play Structures	$816k	$137k	$0	$34k	$18k	$0	$0	$0	$273k	$0	$17k	$337k
	Retaining Walls	$105k	$105k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Transfer Station	$14k	$0	$0	$0	$0	$0	$0	$14k	$0	$0	$0	$0
	Walkways	$343k	$221k	$115k	$0	$0	$0	$0	$0	$7k	$0	$0	$0

Category	Segment	Total	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Technology & Communication	Communication Equipment	$480k	$117k	$42k	$34k	$29k	$17k	$7k	$67k	$59k	$76k	$15k	$17k
	Fire Dispatch Equipment	$75k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75k	$0
	Network Equipment	$7k	$4k	$0	$0	$0	$0	$0	$4k	$0	$0	$0	$0
	Printers	$25k	$0	$0	$0	$0	$0	$0	$0	$25k	$0	$0	$0
	Scanners	$5k	$3k	$0	$0	$0	$0	$0	$3k	$0	$0	$0	$0
	Servers	$262k	$39k	$0	$0	$0	$91k	$7k	$27k	$0	$0	$98k	$0
	Software	$343k	$66k	$15k	$76k	$0	$14k	$0	$82k	$76k	$0	$14k	$0
	Work Stations	$906k	$164k	$32k	$18k	$73k	$58k	$196k	$18k	$73k	$58k	$196k	$18k

Appendix C: Level of Service Maps

Paved Roads: Illustration of Asset Condition

Very Good: 80-100

Good: 60-79

Fair: 40-59

Poor: 20-39

Very Poor: 0-19

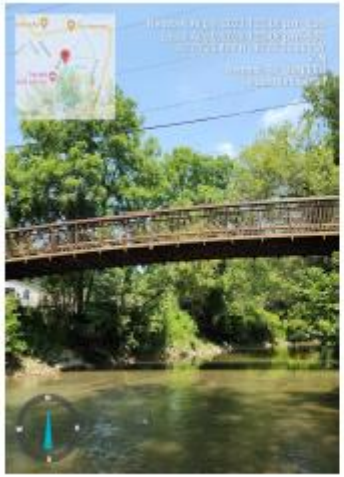
Images of Bridges in Various Condition

Very Good:
Concession Street Bridge

Inspected: August 4th, 2023

Good:
Van Street Pedestrian Bridge

Inspected: August 9th, 2023



Images of Culverts in Various Condition

Good:
Baldwin Street Culvert at Golf Course

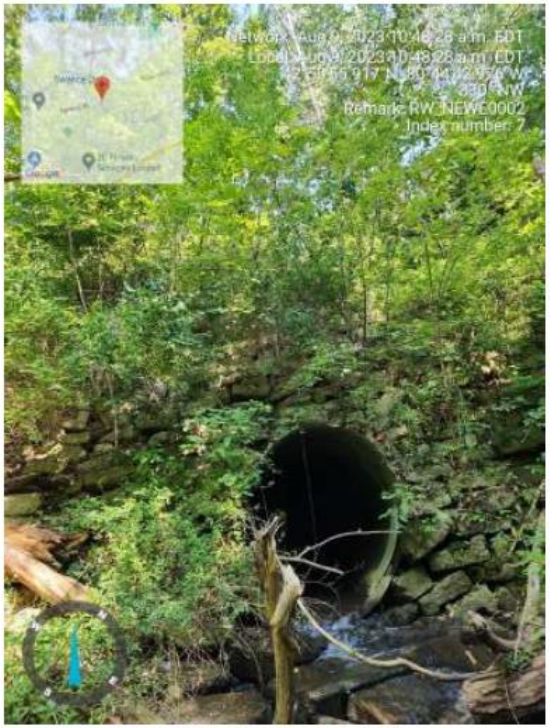
Inspected August 9th, 2023

Fair:
Broadway St. Culvert at Christie St.

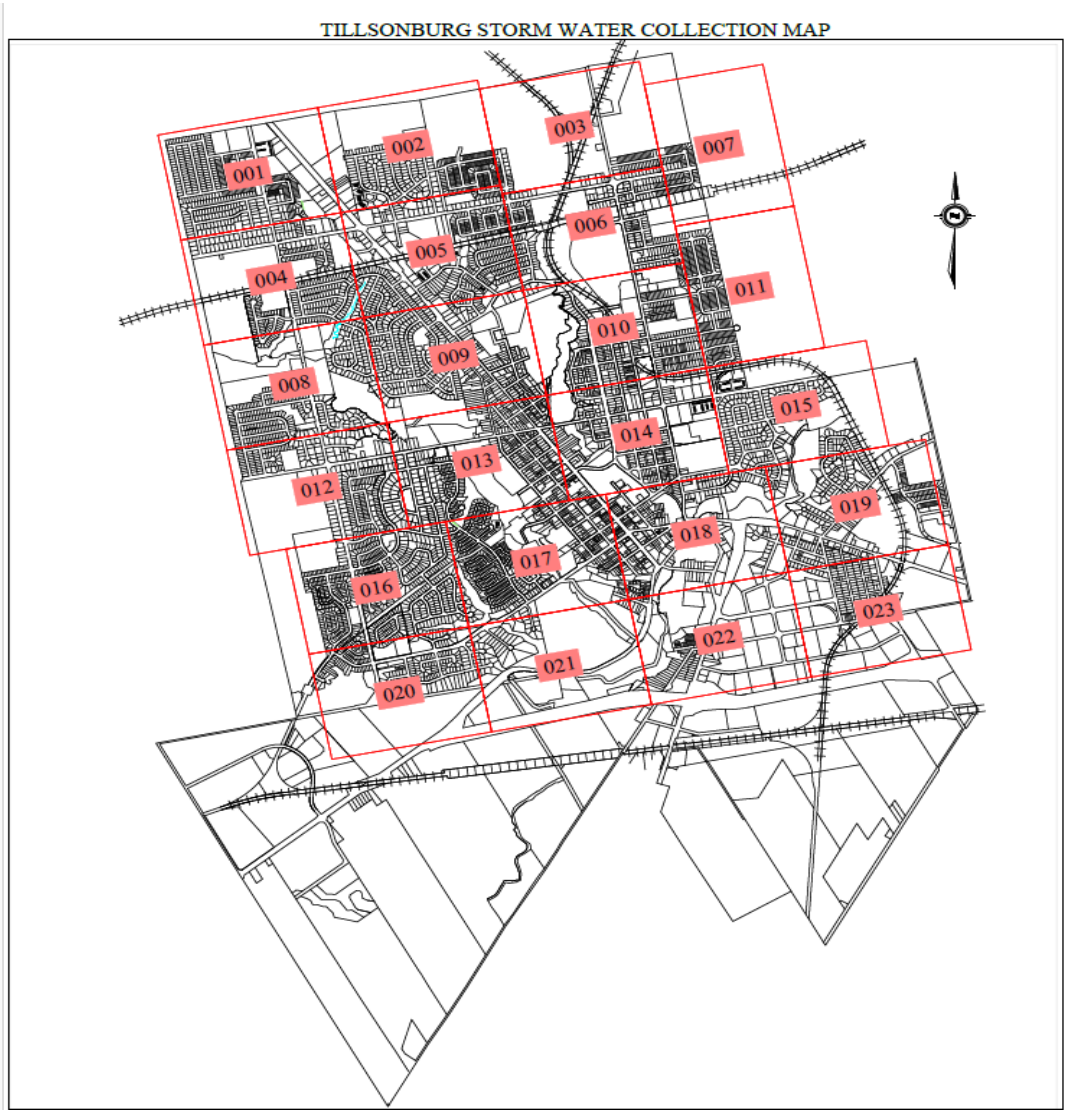
Inspected August 11th, 2023

Poor:
Newell Road and Quarter Town Line

Inspected: August 9th, 2023



Stormwater Network Map



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 Town'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 Town'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 Town 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 Town 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 Town 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 Town should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:

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