Asset Management Plan 2025

TOWN OF HAWKESBURY

2025

psdcitywide

This Asset Management Plan was prepared by:

psdcitywide

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

Key Statistics

$434.5m	Replacement Cost of Asset Portfolio
$81.8k	Replacement Cost of Infrastructure Per Household
66%	Percentage of Assets in Fair or Better Condition
74%	Percentage of Assets with Assessed Condition Data
$6.36m	Annual Capital Infrastructure Deficit
15 Years	Recommended Timeframe for Eliminating Annual Infrastructure Deficit
2.29%	Target Reinvestment Rate
0.82%	Actual Reinvestment Rate

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1. Executive Summary

Municipal infrastructure delivers critical services that are foundational to the economic, social, and environmental health and growth of a community. The goal of asset management is to enable infrastructure to deliver an adequate level of service in the most cost-effective manner. This involves the ongoing review and update of infrastructure information and data alongside the development and implementation of asset management strategies and long-term financial planning.

1.1 Scope

This Asset Management Plan (AMP) identifies the 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.

This AMP include the following asset categories:

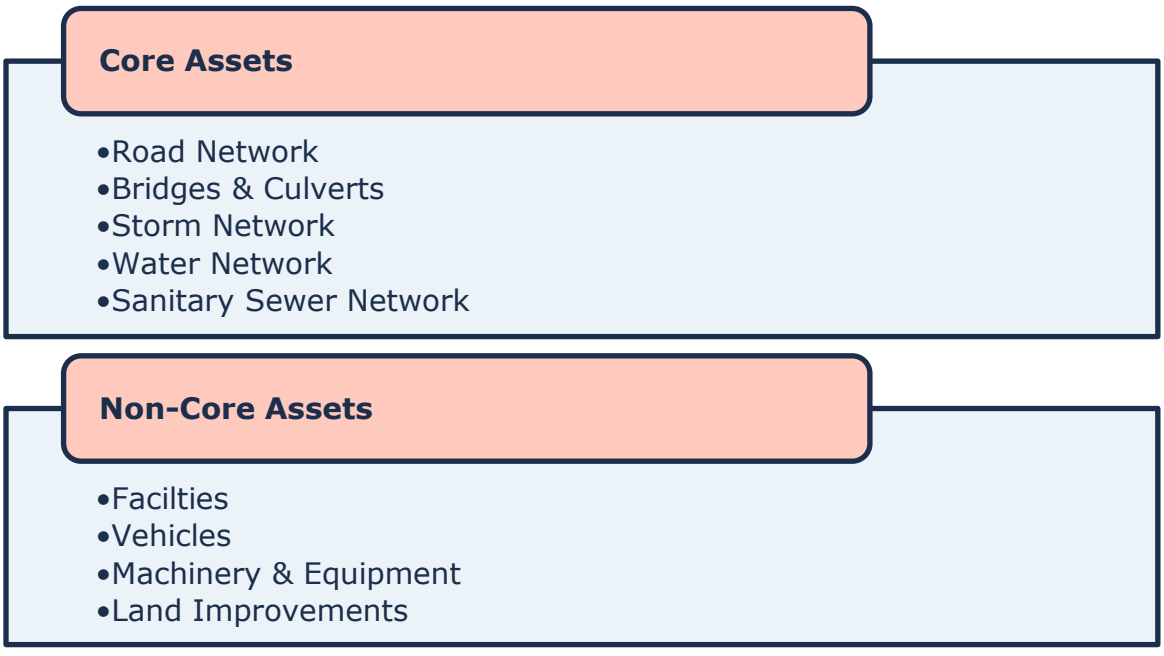


Figure 1 Core and Non-Core Asset Categories

1.2 O. Reg. 588/17 Compliance

With the development of this AMP the Town has achieved compliance with July 1, 2025, requirements under O. Reg. 588/17. This includes requirements for levels of service and inventory reporting for all asset categories. More detail on compliance can be found in section 2.5.1 O. Reg. 588/17 Compliance Review.

1.3 Findings

The overall replacement cost of the asset categories included in this AMP totals 434.5 million. 66% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 74% of assets. For the remaining 26% 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 and replacement only strategies to determine the lowest cost option to maintain the proposed (10-year) 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 $9.93 million. Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately $3.57 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $6.36 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.

1.4 Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax/rate change required to eliminate the Town's infrastructure deficit.

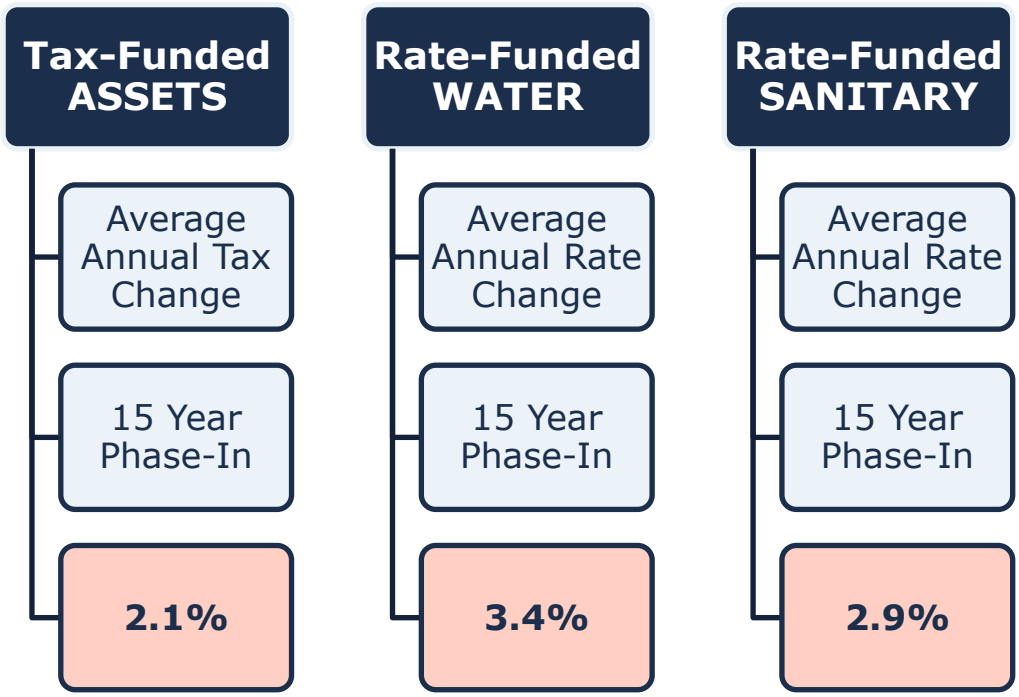


Figure 2 Proposed Tax/Rate Changes

2. Introduction & Context

2.1 Community Profile

Census Characteristic	Town of Hawkesbury	Ontario
Population 2021	10,194	14,223,942
Population Change 2016-2021	-0.7%	5.8%
Total Private Dwellings	5,308	5,929,250
Population Density	1,009.7/km2	15.9/km^2
Land Area	10.10 km2	892,411.76 km^2

Table 1 Town of Hawkesbury Community Profile

The Town of Hawkesbury is located approximately 110 kilometres east of Ottawa, in Southeastern Ontario. The Town is positioned along the southern bank of the Ottawa River, serving as the border between Ontario and Quebec.

The region was settled in the early 1800s by European colonists along with those from Quebec. Hawkesbury has a mix of cultural influences, including English, French, and Indigenous roots; the majority of the community is fluent in both French and English.

The economy of Hawkesbury historically relied on industries such as manufacturing, forestry, and agriculture. In recent years, there has been a diversification into other sectors such as healthcare, retail, and services. The proximity to the Ottawa River facilitated transportation and trade, making it beneficial for manufacturing operations.

There are a wide range of recreational activities available to the community due to the Town's natural surroundings such as the Ottawa River and provincial parks. Residents are also provided with more affordable housing while having access to amenities within urban centers since the Town is located within close proximity to major cities such as Ottawa and Montreal.

The Town is focused on prioritizing upkeep of its existing infrastructure. Recognizing the importance of preserving its assets, the Town is actively allocating resources to ensure the longevity and functionality of its infrastructure systems.

2.2 Climate Change

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

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012. By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

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

2.2.1 Hawkesbury Climate Profile

The Town of Hawkesbury is situated in Eastern Ontario along south side of Ottawa River. The Town is expected to experience notable effects of climate change which include higher average annual temperatures, an increase in total annual precipitation, and an increase in the frequency and severity of extreme events. According to Climatedata.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – the Town of Hawkesbury may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1971 and 2000 the annual average temperature was 5.5 ºC

- Under a high emissions scenario, the annual average temperatures are projected to be 8.4 ºC by the year 2050 and 12.3 ºC by the end of the century.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, Hawkesbury is projected to be 13% higher in precipitation by the year 2050 and 17% higher by the end of the century.

Increase in Frequency of Extreme Weather Events:

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

2.2.2 Integration of Climate Change and Asset Management

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

To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices. The integration of asset management and climate change adaptation observes industry best practices and enables the development of a holistic approach to risk management. The Town of Hawkesbury is actively involved in climate change initiatives through its participation in the Federation of Canadian Municipalities' (FCM) Partners for Climate Protection (PCP) Program. This program includes a network of over 460 municipal governments committed to reducing greenhouse gas emissions and implementing climate action plans. The Town's involvement allows it to access federal funding and resources to support its climate initiatives. Additionally, Hawkesbury collaborates with the Prescott and Russell Coalition for Climate Action to implement sustainable practices and engage the community in environmental stewardship.

2.3 Asset Management Overview

Municipalities are responsible for managing and maintaining a broad portfolio of infrastructure assets to deliver services to the community. The goal of asset management is to minimize the lifecycle costs of delivering

infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio.

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

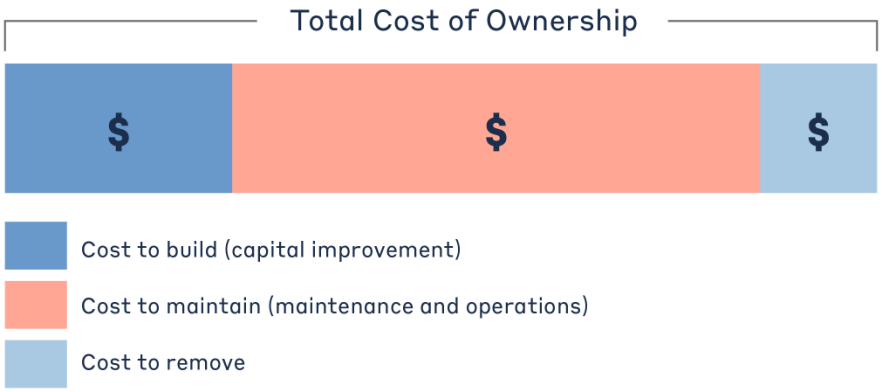


Figure 3 Total Cost of Asset Ownership

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

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

2.3.1 Foundational Asset Management Documentation

The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan/Priorities, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

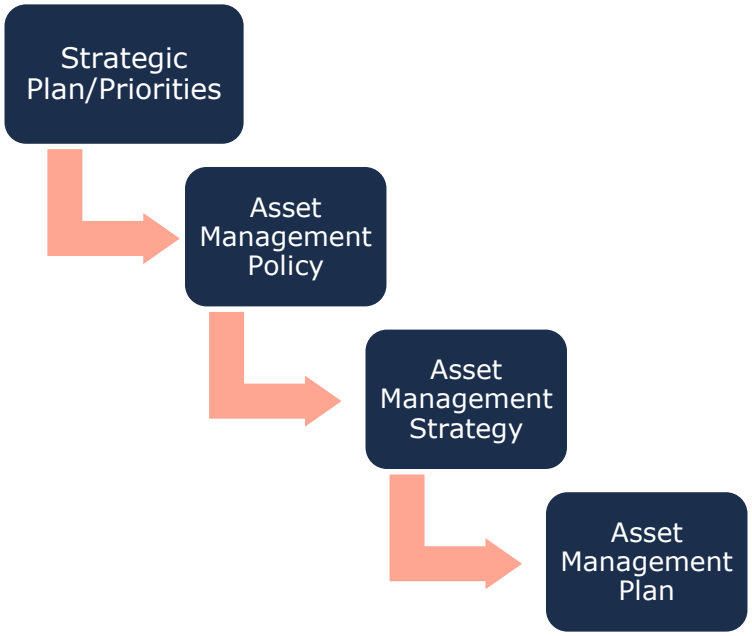


Figure 4 Foundational Asset Management Documents

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

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 By-law No. R-168-19 "A By-law to Adopt an Asset Management Strategy Policy" on July 1st, 2019, in accordance with Ontario Regulation 588/17. The policy commits the Town to fiscally responsible service delivery through the development and implementation of a comprehensive asset management plan.

The objectives of the policy include:

Forward looking – take a long-term view while considering demographic and economic trends.

- **Budgeting and planning** – align with applicable budgets and fiscal plans.

- **Prioritizing** – clearly identify infrastructure priorities to guide investment.
- **Economic development** – promote competitiveness, productivity, job creation, and training opportunities.
- **Transparency** – make evidence-based, publicly available decisions.
- **Consistency** – ensure the continued provision of core public services.
- **Environmental conscious** – minimize environmental impact, promote climate resilience, and use recycled materials where possible.
- **Health and safety** – protect workers involved in construction and maintenance of infrastructure assets.
- **Community focused** – promote social and economic benefits such as local job creation, public space improvements, and accessibility.
- **Innovation** – encourage the use of innovative technologies, services, and practices.

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.

The Town's 2025–2030 Strategic Plan, which was adopted (R-84-25) by Council on May 12th, 2025, reinforces and expands the direction of its Asset Management Policy by embedding asset management within its broader goals of sustainability, growth, and community well-being. The strategy is anchored in the Town's mission to provide quality services in partnership with stakeholders, its vision of Hawkesbury as a hub for growth in Eastern Ontario, and its aspiration to build a safe and resilient community that enhances quality of life. These guiding statements are supported by the Town's values, active listening, mutual support, flexibility, innovation, and fiscal responsibility, which frame how infrastructure investments and service delivery decisions are prioritized.

From a strategic perspective, the Town's asset management activities focus on three interconnected directions:

- ***Quality Services***: Investments in infrastructure and services are aligned with growth, long-term sustainability, and municipal standards, with an emphasis on integration to optimize resources and maintain service quality.

- ***Supporting Growth***: Asset planning supports economic and residential development by working with provincial and regional partners, facilitating inter-municipal collaboration, and ensuring infrastructure keeps pace with demographic change and new opportunities.
- ***Community Issues***: The Town uses collaboration and dialogue to address housing needs, socio-economic pressures, and service demands, recognizing that coordinated action with partners is vital to sustaining community well-being.

These directions establish asset management as a governance framework that balances fiscal responsibility, service excellence, and resilience. They also form the foundation for the Town's AMP, guiding lifecycle management, service level targets, and long-term financial planning to ensure infrastructure decisions support Hawkesbury's growth and sustainability objectives.

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 reevaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

2.3.2 Key Concepts in Asset Management

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

Lifecycle Management Strategies

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

location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its intended function, and may be characterized by increased cost, risk and even service disruption.

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

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

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

Lifecycle Activity	Cost	Typical Associated Risks
Maintenance Activities that prevent defects or deteriorations from occurring	**$**	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions • Diminishing returns associated with excessive maintenance activities, despite added costs • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
Rehabilitation/ Renewal Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	**$$$**	• Useful life may not be extended as expected • May be costlier in the long run when assessed against full reconstruction or replacement • Loss or disruption of service, particularly for underground assets;

Lifecycle Activity	Cost	Typical Associated Risks
Replacement/ Reconstruction Asset end-of-life activities that often involve the complete replacement of assets	**$$$$$**	• Incorrect or unsafe disposal of existing asset • Costs associated with asset retirement obligations • Substantial exposure to high inflation and cost overruns • Replacements may not meet capacity needs for a larger population • Loss or disruption of service, particularly for underground assets

Table 2 Lifecycle Management: Typical Lifecycle Interventions

The Town's approach to lifecycle management is described within each asset category outlined in this AMP. Staff will continue to evolve and innovate current practices for developing and implementing proactive lifecycle strategies to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

Risk & Criticality

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

Risk is a product of two variables: the probability that an asset will fail, and the resulting consequences of that failure event. It can be a qualitative measurement, (i.e. low, medium, high) or quantitative measurement (i.e. 1-5), that can be used to rank assets and projects, identify appropriate

lifecycle strategies, optimize short- and long-term budgets, minimize service disruptions, and maintain public health and safety.

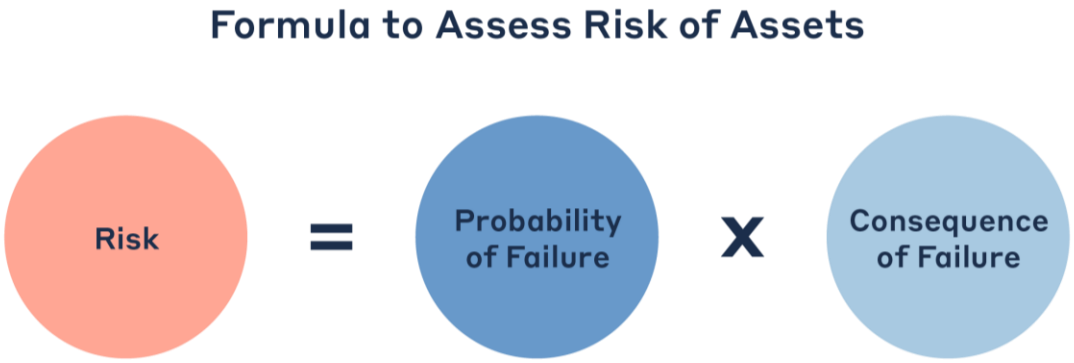


Figure 5 Risk Equations

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

Probability of Failure

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

Consequence of Failure

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

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

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

Table 3 Risk Analysis: Types of Consequences of Failure

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

These models have been built in Citywide for continued review, updates, and refinements.

Levels of Service

A level of service (LOS) is a measure of the services that the Town is providing to the community and the nature and quality of those services. Within each asset category in this AMP, technical metrics and qualitative

descriptions that measure both technical and community levels of service have been established and measured as data is available.

The Town measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service. This AMP includes those LOS that are required under O. Reg. 588/17 as well as any additional metrics the Town wishes to track.

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 as applicable (Roads, Bridges & Culverts, Storm Water, Water, and Sanitary) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP.

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 core asset categories as applicable (Roads, Bridges & Culverts, Storm Water, Water, and Sanitary) the province, through O. Reg. 588/17, has also provided technical metrics that are required to be included in this AMP.

Current and Proposed Levels of Service

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, the Town must identify a lifecycle management and financial strategy which allows these targets to be achieved.

Core Values

The core values behind levels of service reflect the Town's commitment to delivering services that meet community needs in a fair, responsible, and sustainable way. These values help guide how infrastructure is managed and how service expectations are set. By aligning asset management decisions with these values, the Town can provide services that people trust.

Value	Description
Accessible	Services are available and accessible for customers who require them
Reliable	Services are provided with minimal service disruption and are available to customers in line with needs and expectations
Safe	Services are delivered such that they minimize health, safety, and security risks
Affordable	Services are delivered at an affordable cost for both the organization and customer
Sustainable	Services are designed to be used efficiently. Long-term plans are in place to ensure that they are available to all customers into the future

Table 4 Levels of Service: Core Values

Public Engagement

The Hawkesbury public engagement questionnaire was undertaken in 2024, to document and capture public responses and opinions related to municipal infrastructure and service priorities. Graphs and other data visualizations can be reviewed in Appendix D – Public Engagement Questionnaire, of this AMP.

The questionnaire received 386 responses, with 84% identifying as full-time residents. Participation was strongest among residents aged 35–44 at 20% and those aged 65 and over at 24%, while younger age groups below 25-34 contributed less than 5% of responses.

Feedback on daily experiences with municipal services revealed a community that is generally satisfied but with important areas of concern. Over two-thirds (72%) of respondents described themselves as satisfied with their daily interactions with local infrastructure, while 28% expressed dissatisfaction. Roads emerged as the most pressing issue, with 57% of respondents dissatisfied and only 25% satisfied, 17% were neutral on the matter. Sidewalks also received divided feedback, with 40% reporting

satisfaction and 33% dissatisfaction. In contrast, most other services were viewed positively; 52% expressed satisfaction with parks, 54% with water and sewer services, and 56% with emergency vehicles and equipment, which stood out as one of the highest-rated areas, behind only bridges at a satisfaction rate of 62%.

Assessments of service levels largely mirrored these trends. Bridges, drainage, and water systems were commonly rated as meeting or exceeding expectations, while emergency vehicles and equipment again ranked highest, with 96% of respondents indicating that performance met or exceeded their expectations. Roads, however, continued to stand apart, with 62% rating them below expectations and only 38% reporting that they met or exceeded standards. These results confirm that the road network continues to define much of the community's perception of local infrastructure quality.

When asked about funding approaches, residents demonstrated a cautious but pragmatic outlook. About 7% expressed willingness to pay more if it would lead to clear and tangible service improvements, while most others preferred maintaining current funding levels or reallocating resources across services. This balance suggests a community that values fiscal responsibility but is open to strategic investment where benefits are visible and measurable.

In ranking infrastructure priorities, roads dominated once again, with half of respondents listing them as their top priority and virtually all placing them within their top three. Water and wastewater systems and emergency vehicles followed as the next most frequently cited priorities, with sidewalks also receiving considerable emphasis. Parks, recreation facilities, drainage, and bridges were valued but consistently ranked below core infrastructure and mobility concerns.

Overall, the questionnaire results portray a community that is generally satisfied with most municipal services but remains deeply concerned about the condition of its road network. Residents continue to favour balanced, affordable decision-making while supporting targeted reinvestment in infrastructure areas that most directly affect daily life and community well-being.

2.4 Scope & Methodology

2.4.1 Asset Categories for this AMP

This asset management plan for the Town of Hawkesbury is produced in compliance with O. Reg. 588/17. The July 2025 deadline under the

regulation—the last of three AMPs—requires analysis of core and non-core asset categories, along with the proposed levels of service for the following ten years.

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

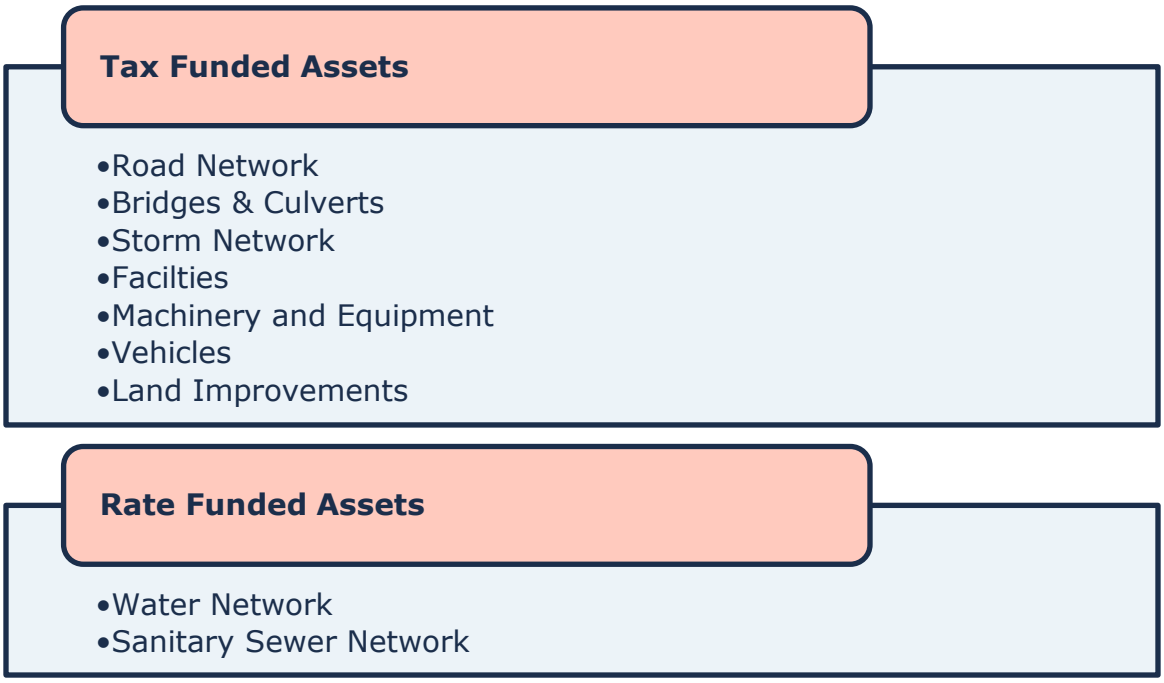


Figure 6 Tax Funded and Rate Funded Asset Categories

2.4.2 Data Effective Date

It is important to note that this plan is based on data as of **December 2024**; therefore, it represents a snapshot in time using the best available processes, data, and information at the Town. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.4.3 Deriving Replacement Costs

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

User-Defined Cost and Cost Per 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 costs of the assets are inflated based on Consumer Price Index or Non-Residential Building Construction Price Index.

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

2.4.4 Estimated Service Life & 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:

Figure 7 Service Life Remaining Calculation

2.4.5 Reinvestment Rate

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

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

Figure 8 Target Reinvestment Rate Calculation

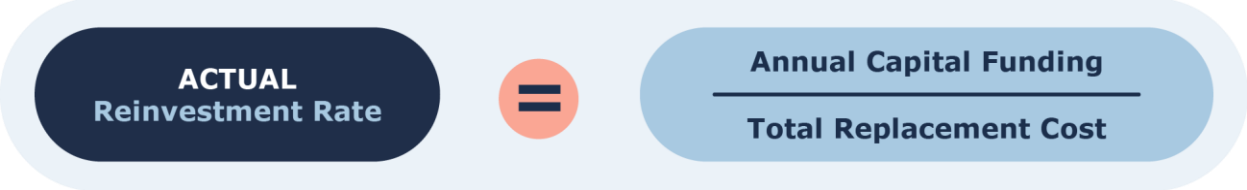


Figure 9 Actual Reinvestment Rate Calculation

2.4.6 Deriving Asset Condition

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

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

Table 5 Standard Condition Rating Scale

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.

The table above summarizes the standard methodology for determining asset condition within this AMP. For those categories in which there is a different rating scale for condition assessment, they will be outlined within that category's "Approach to Condition Assessment" subsection. For instances where the scale is the same, only the approach for condition assessment will be outlined. Appendix C includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

2.5 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)[1]. Along with creating better

[1] O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure https://www.ontario.ca/laws/regulation/170588

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.

Figure 10 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

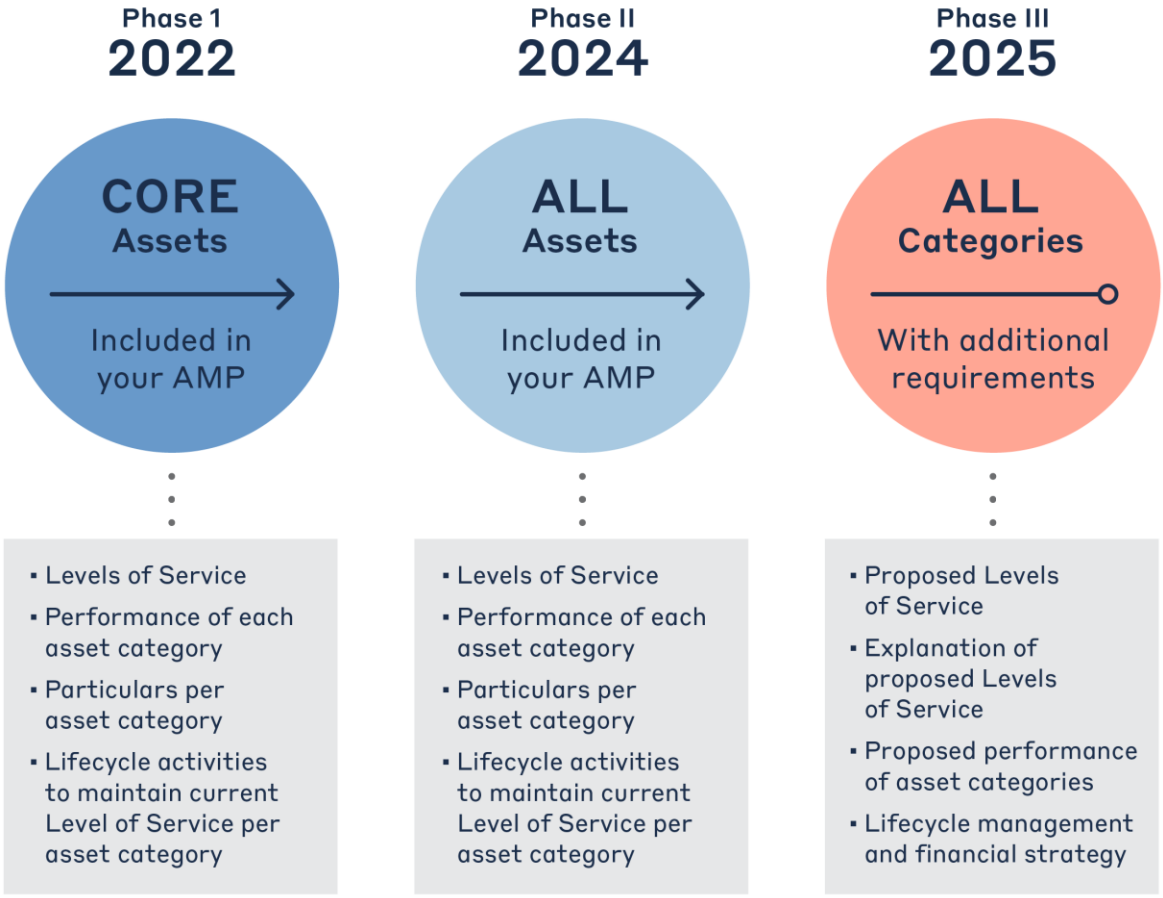


Figure 10 O. Reg. 588/17 Requirements and Reporting Deadlines

2.5.1 O. Reg. 588/17 Compliance Review

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1 – 12.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1 – 12.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.3 – 12.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.2 – 12.2	Complete
Description of Town's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.2 & 4.4 – 12.2 & 12.4	Complete
Current/proposed levels of service in each category	S.5(2), 1(i-ii) S.6 (1)	4.6 – 12.6	Complete
Performance measures in each category	S.5(2), 2 S. 6 (1), 2	4.6 – 12.6	Complete
Lifecycle activities needed for proposed levels of service for 10 years	S.5(2), 4 S. 6 (1), 4	4.4 & 4.6 – 12.4 & 12.6	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4 S. 6 (1), 4	4.6 – 12.6	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	13	Complete

Table 6 O. Reg. 588/17 Compliance Review

3. Portfolio Overview – State of the Infrastructure

The state of the infrastructure (SOTI) summarizes the inventory, condition, age profiles, and other key performance indicators for the Town's infrastructure portfolio. These details are presented for all core and non-core asset categories.

3.1 Asset Hierarchy & Data Classification

Asset hierarchies define the relationships between individual assets, their components, and the broader systems they belong to. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets are structured to support meaningful, efficient reporting and analysis. Key category details are summarized at asset segment level.

Figure 11 Asset Hierarchy and Data Classification

3.2 Portfolio Overview

3.2.1 Total Replacement Cost of Asset Portfolio

The nine asset categories analyzed in this Asset Management Plan have a total current replacement cost of 434.5 million. This estimate was calculated using user-defined costing, cost per unit, as well as inflation of historical or original costs to current date. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today. Figure 12 illustrates the replacement cost of each asset category.

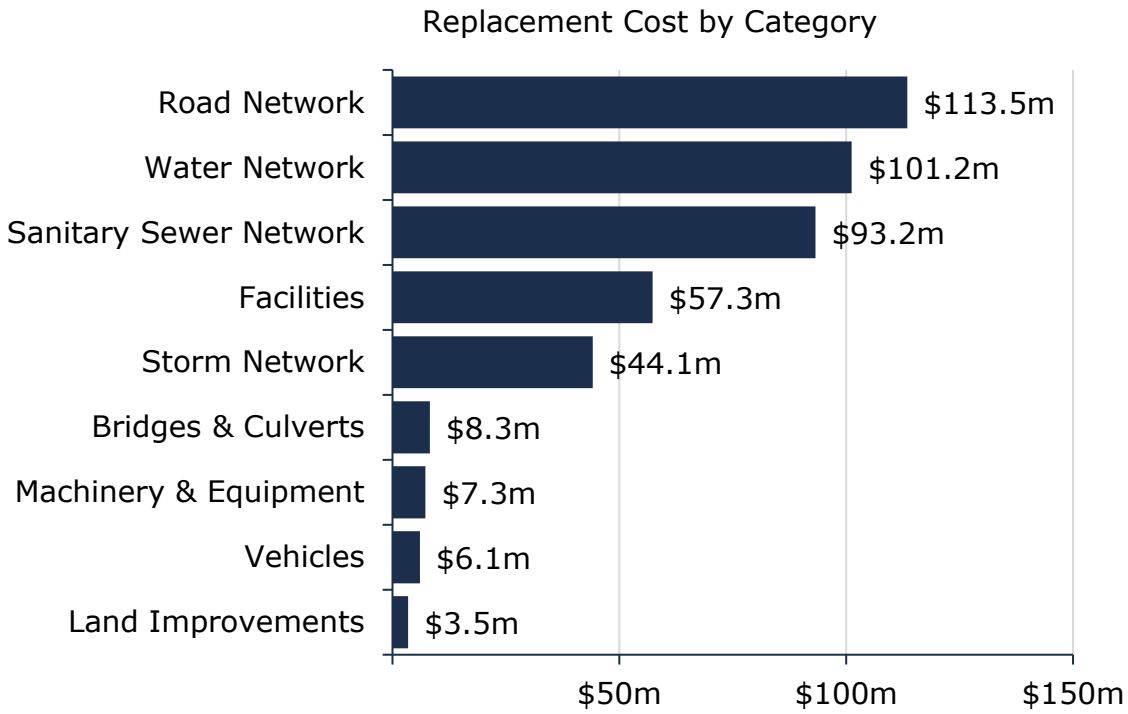


Figure 12 Current Replacement Cost by Asset Category

3.2.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps by comparing the target to the current reinvestment rate. To meet the existing long-term capital requirements, the Town requires an annual capital investment of $9.93 million, for a target portfolio reinvestment rate of 2.29%. Currently, the annual investment from sustainable revenue sources is $3.57 million, for a current portfolio reinvestment rate of 0.82%. Target and current re-investment rates by asset category are detailed below.

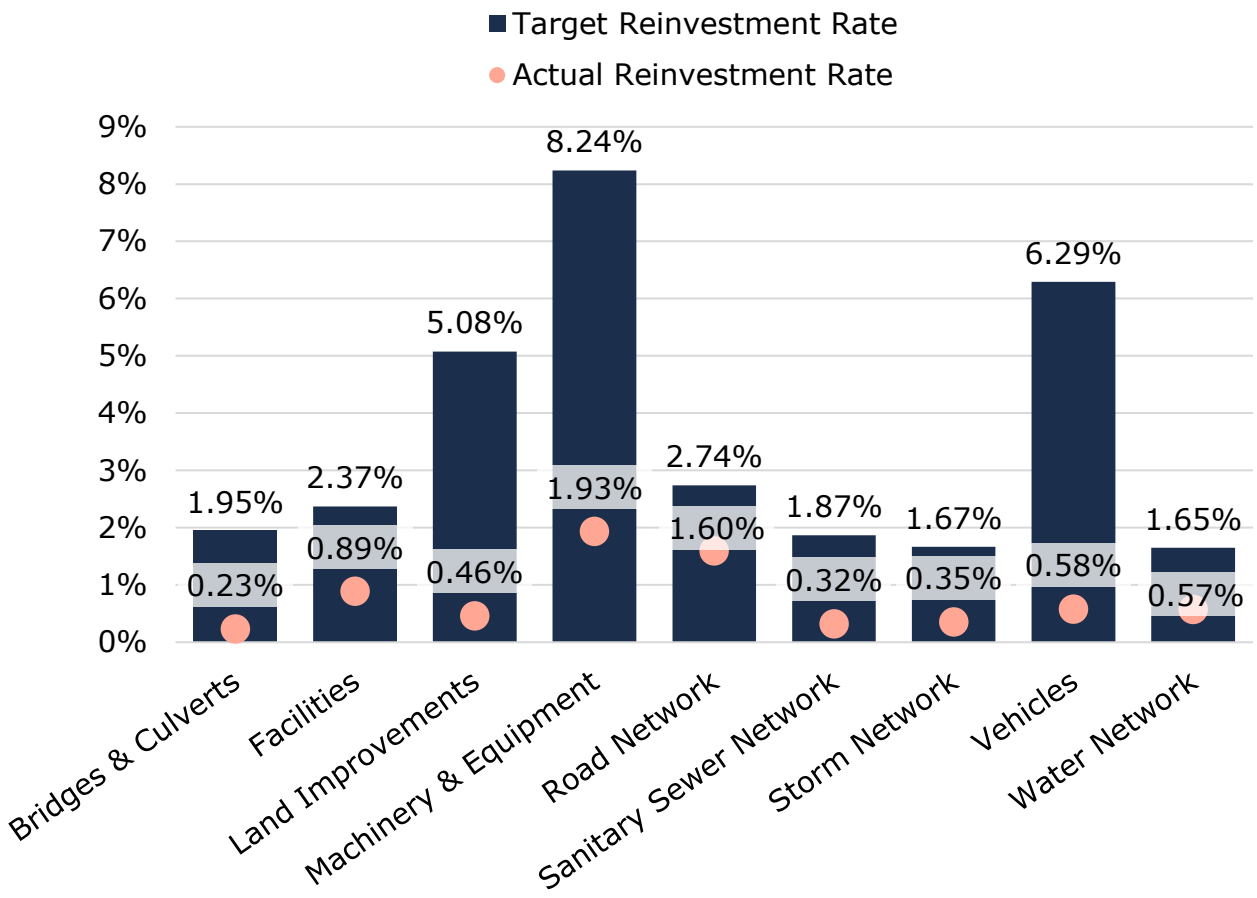


Figure 13 Current Vs. Target Reinvestment Rate

3.2.3 Condition of Asset Portfolio

Figure 14 and Figure 15 summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition and age-based analysis, 66% of the Town's infrastructure portfolio is in fair or better condition, with the remaining 34% in poor or worse condition. Typically, assets in poor or worse condition may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

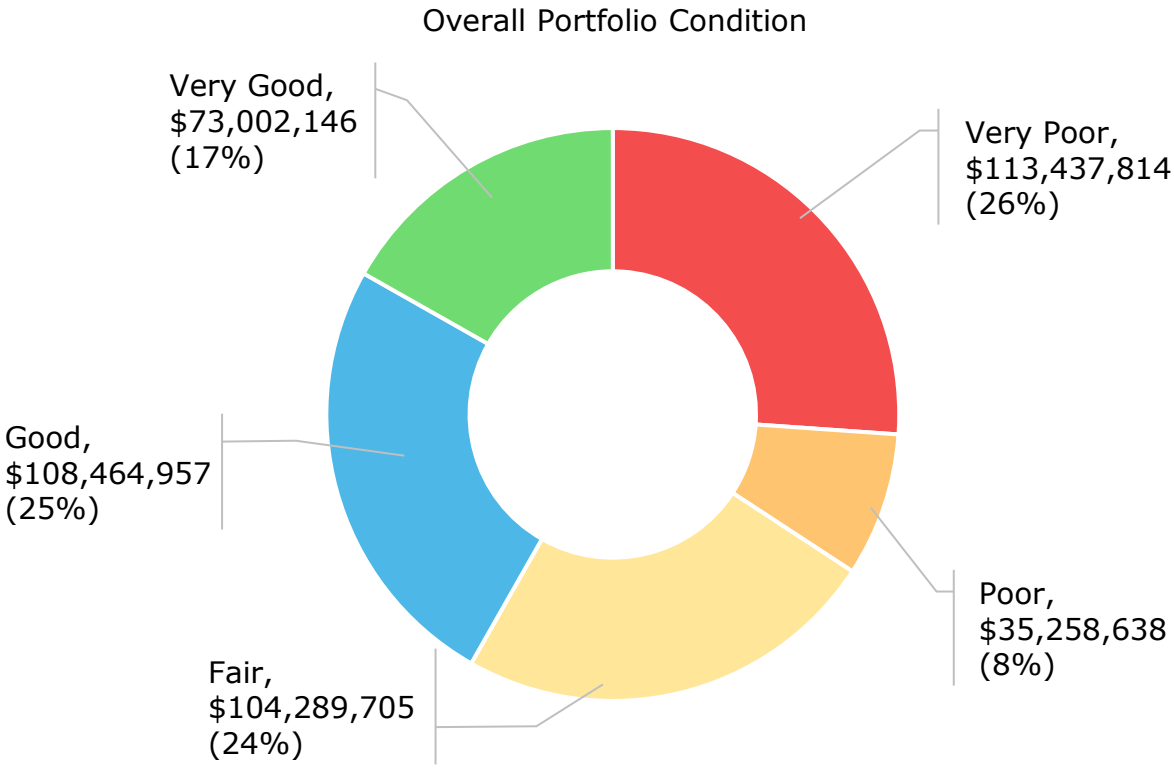


Figure 14 Asset Condition: Portfolio Overview

As further illustrated in Figure 15 at the category level, the majority of major, core infrastructure such as bridges & culverts, water, storm and sanitary networks, are in fair or better condition. These findings are based on in-field condition assessment data and age-based condition projections. See Table 7 for details on how condition data was derived for each asset segment.

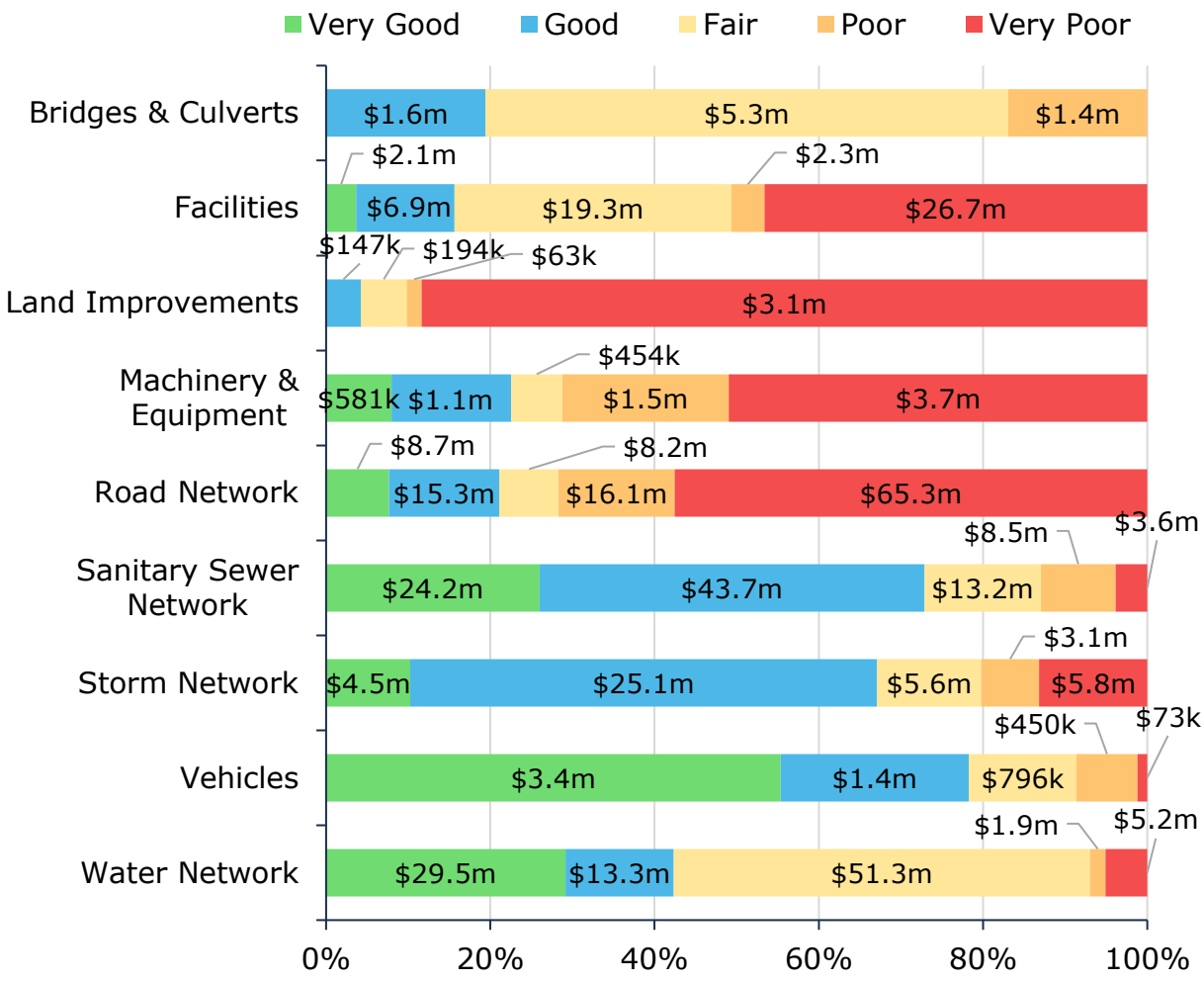


Figure 15 Asset Condition by Asset Category

Source of Condition Data

This AMP relies on assessed condition for 74% of assets, based on and weighted by replacement cost. For the remaining assets, 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	% of Assets with Assessed Conditions	Source of Condition Data
Road Network	81%	Stantec Engineering Services 2023 Staff Assessments
Bridges & Culverts	100%	2023 OSIMs
Water Network	60%	2024 ABSI assessments
Sanitary Sewer Network	90%	2021 CCTV Inspections 2023 ABSI assessments
Storm Network	75%	2021 CCTV Inspections
Facilities	58%	2024 ABSI assessments
Vehicles	100%	2023 Staff Assessments
Machinery & Equipment	25%	2023 Staff Assessments
Land Improvements	-	N/A

Table 7 Source of Condition Data

3.2.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 31% of the Town's assets will require replacement within the next 10 years (not accounting for asset replacement backlog).

3.2.5 Risk Matrix

Using the risk equation and preliminary risk models, Figure 16 shows how the Town's assets across the different asset categories are stratified within a risk matrix.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$107,065,187 (25%)	$85,401,673 (20%)	$40,947,160 (9%)	$58,146,760 (13%)	$142,892,479 (33%)

Figure 16 Risk Matrix: All Assets

The analysis shows that based on current risk models, approximately 33% of the Town's assets, with a current replacement cost of approximately $142.9 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates.

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

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

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

Core Assets

4. Road Network

4.1 Inventory & Valuation

Table 8 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's road network inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Asphalt Roads	51,961	Metres	$99,063,985	Cost per Unit
Curbs	69,989	Metres	$4,686,022	User-Defined
Retaining Walls	2	Assets	$2,050,138	CPI
Sidewalks	22,625	Metres	$4,507,866	User-Defined
Streetlights	1,592	Assets	$2,195,921	User-Defined
Traffic Lights	26	Metres	$950,070	User-Defined
TOTAL			**$113,454,003**	

Table 8 Detailed Asset Inventory: Road Network

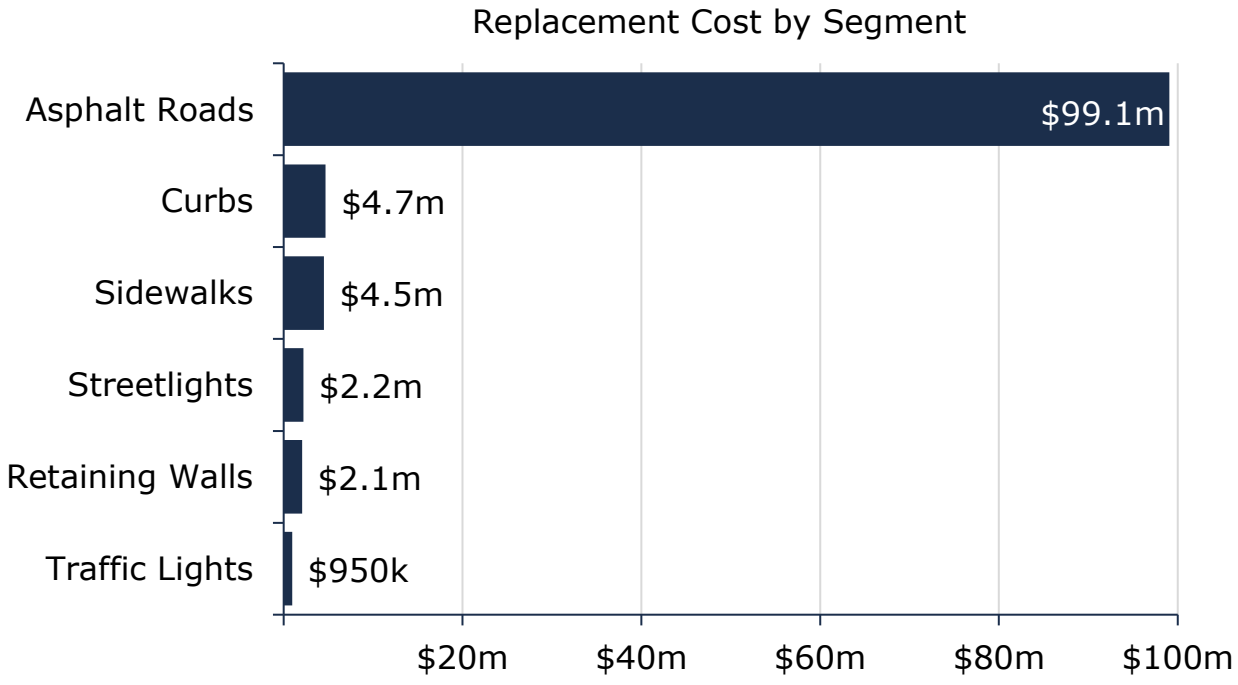


Figure 17 Portfolio Valuation: Road Network

4.2 Asset Condition

Figure 18 summarizes the replacement cost-weighted condition of the Town's road network. Based on a combination of field inspection data and age, 28% of assets are in fair or better condition; the remaining 72% of assets are in poor to very poor condition. Condition assessments were available for 92% of asphalt roads and 98% of traffic lights, based on replacement cost. This condition data was projected from inspection date to current year to estimate their condition today.

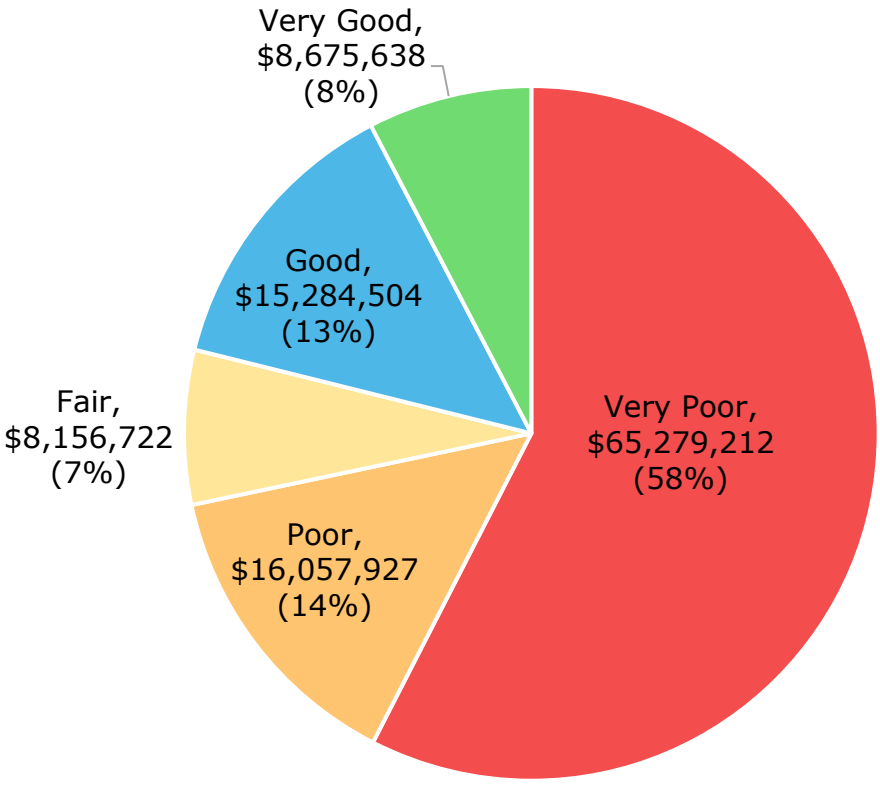


Figure 18 Asset Condition: Road Network Overall

As illustrated in Figure 19, most asphalt roads are in poor or worse condition. Except for retaining walls, most remaining road's assets are also in poor or worse condition.

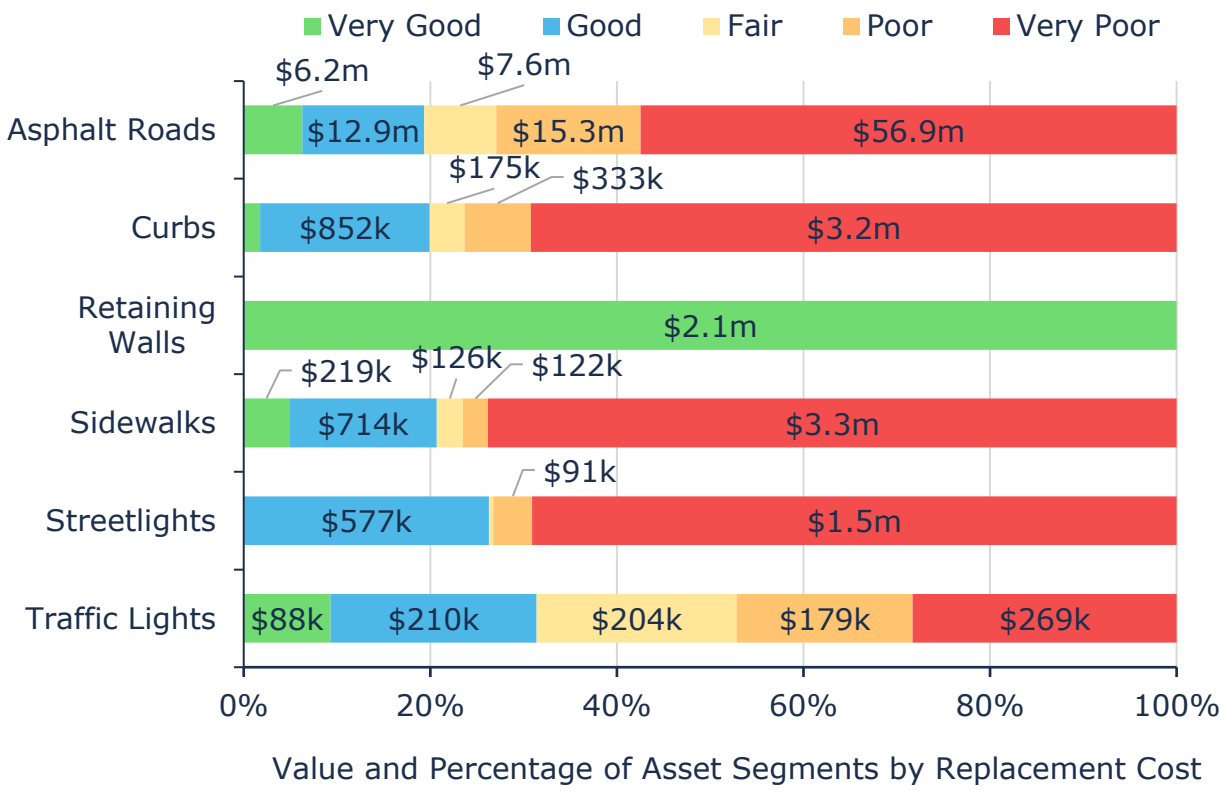


Figure 19 Asset Condition: Road Network by Segment

4.2.1 Current Approach to Condition Assessment

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

- Internal staff within the Town conduct routine road patrols to visually inspect and identify deficiencies within the road network
- A Road Needs Study (RNS) was completed in 2017 that included a detailed assessment of the condition of each road segment. The Town is planning to conduct an external assessment in the coming years

4.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its

intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

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

Figure 20 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

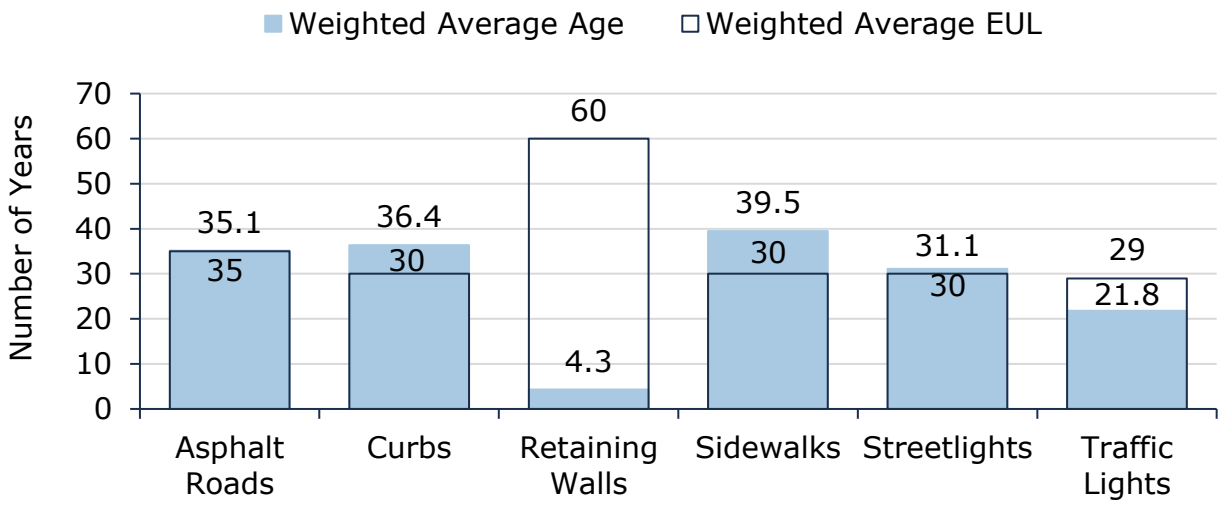


Figure 20 Estimated Useful Life vs. Asset Age: Road Network

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs.

4.4 Current Approach to Lifecycle Management

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 asphalt 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.

The following schedules outline the events taken by the Town in its care of road network:

Asphalt Roads		
Event Name	**Event Class**	**Event Trigger**
Surface Treatment	Maintenance	PCI: 80
Pulverize and Pave	Rehabilitation	PCI: 60
Full Reconstruction	Replacement	PCI: 40

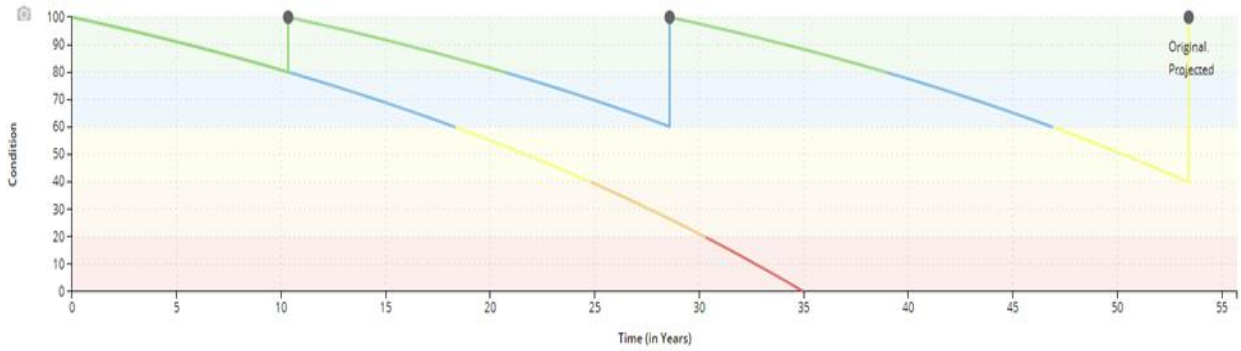


Table 9 Lifecycle Management Strategy: Road Network (Paved Roads - Asphalt)

The following table expands on maintenance and inspection activities for road network assets.

Activity Type	Description of Current Strategy
Maintenance	The Town completes crack sealing, ditch maintenance, curbside maintenance, and asphalt patching on an annual basis
	Summer maintenance activities include sidewalk repair, ditching, mowing, crushing, line painting, and sign maintenance
	Winter maintenance activities include snow plowing, salting, and snow removal
	All maintenance tasks adhere to the Minimum Maintenance Standards (MMS)
	Streetlight maintenance activities include replacing bulbs and other components of the streetlight as needed

Rehabilitation	Rehabilitation activities are completed on an as-needed, case-by-case basis, primarily in response to a number of failing assets and the pre-existing backlog of tasks
	Pulverization and paving are carried out, with a focus on arterial roads, while local roads typically do not undergo this type of rehabilitation
Replacement	Rehabilitation and replacement activities are prioritized based on asset condition and health and safety risks. Paved road capital activities are done in coordination with underground infrastructure to streamline multiple projects

Table 10 Lifecycle Management Strategy: Road Network

The Town is developing a comprehensive master plan, expected to be completed by year-end, to guide long-term asset lifecycle management.

4.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, replacement costs, number of lanes and road class. The risk ratings for assets without useful attribute data were calculated using only condition, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 **Very Low**	5 - 7 **Low**	8 - 9 **Moderate**	10 - 14 **High**	15 - 25 **Very High**
$9,188,874 (8%)	$10,351,481 (9%)	$10,944,491 (10%)	$19,732,888 (17%)	$63,236,269 (56%)

Figure 21 Risk Matrix: Road Network

4.6 Levels of Service

The table that follows summarize the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17, as well as any additional performance measures that the Town selected for this AMP.

4.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description, which may include maps, of the road network in the Municipality and its level of connectivity	Scope	See Appendix B
	Description or images that illustrate the different levels of road class pavement condition	Quality	The Town completed a Road Need Study in 2017, in collaboration with Stantec. Each road section received various condition scores (RCI, PCI, SAI, & PQI) See Appendix B
Technical	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km2)	Scope	1.4[2]
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km2)		1.9[3]
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km2)		4.7[4]
Technical	Average pavement condition index for paved roads in the Municipality	Quality	26

[2] Where the number of lanes were not known, assumed two (2).
[3] Where the number of lanes were not known, assumed two (2).
[4] Where the number of lanes were not known, assumed two (2).

Metric Type	KPI Metric	Service Attribute	Current LOS
	Average surface condition for unpaved roads in the Municipality (e.g. excellent, good, fair, poor)		N/A[5]

Table 11: Road Network – Current Levels of Service

4.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 60-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the road network.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$113,454,000	74%	$3,107,000
Scenario 2 - Current Capital Investment Rate		42%	$1,870,000
Scenario 3 - Maintain Condition 40%		40%	$1,720,000

[5] The Town does not own/manage any unpaved roads

Table 12 Road Network - Proposed Levels of Service Scenarios

4.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Asphalt Roads	$35.9m[6]	$2.4m	$4.8m	$547k	$1.9m	$1.1m	$2.2m	$1.0m	$1.4m	$2.3m
Curbs	$10k	$224k	$122k	$110k	-	-	$129k	$106k	$10k	-
Retaining Walls	-	-	-	-	-	-	-	-	-	-
Sidewalks	$32k	$60k	$254k	$136k	-	-	$23k	$25k	$21k	$40k
Streetlights	$25k	$116k	$49k	$116k	-	-	$81k	$70k	-	-
Traffic Lights	-	-	-	-	-	-	$179k	-	$99k	-
Total	**$36.0m**	**$2.8m**	**$5.3m**	**$908k**	**$1.9m**	**$1.1m**	**$2.6m**	**$1.2m**	**$1.5m**	**$2.3m**

Table 13 Road Network - 10-Year Capital Forecast

[6] The projected capital requirement for paved roads in 2025 reflects significant rehabilitation and replacement events flagged within the Town's asset register (Citywide). Due to a lack of physical condition and performance data, it is highly likely that this figure is overstated. A condition-based reassessment (road needs study) is recommended to refine future forecasts and support more accurate prioritization of interventions.

5. Bridges & Culverts

5.1 Inventory & Valuation

Table 14 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's bridges & culverts inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Bridges	2	Quantity	$4,750,000	User-defined
Culverts	3	Quantity	$3,500,000	User-defined
TOTAL			**$8,250,000**	

Table 14 Detailed Asset Inventory: Bridges & Culverts

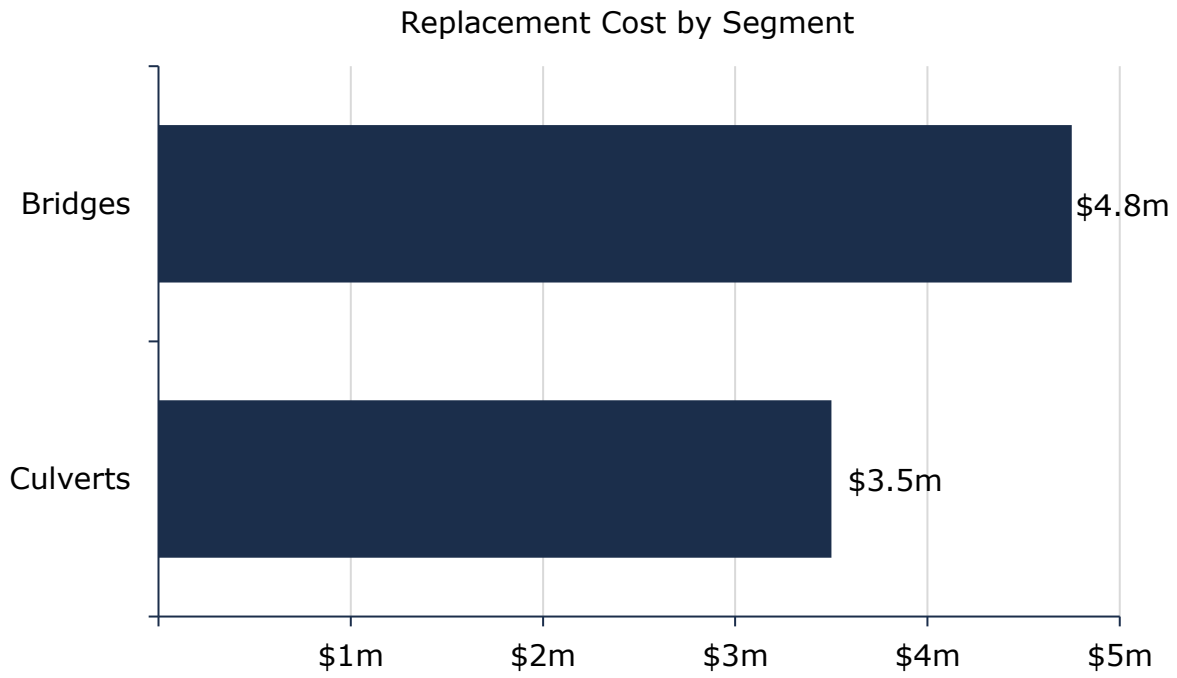


Figure 22 Portfolio Valuation: Bridges & Culverts

5.2 Asset Condition

Figure 23 summarizes the replacement cost-weighted condition of the Town's bridges and culverts. Based on the Town's latest Ontario Structures Inspection Manual (OSIM) assessments, 83% bridges and culverts are in fair or better condition. Some elements or components of these structures may

be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition.

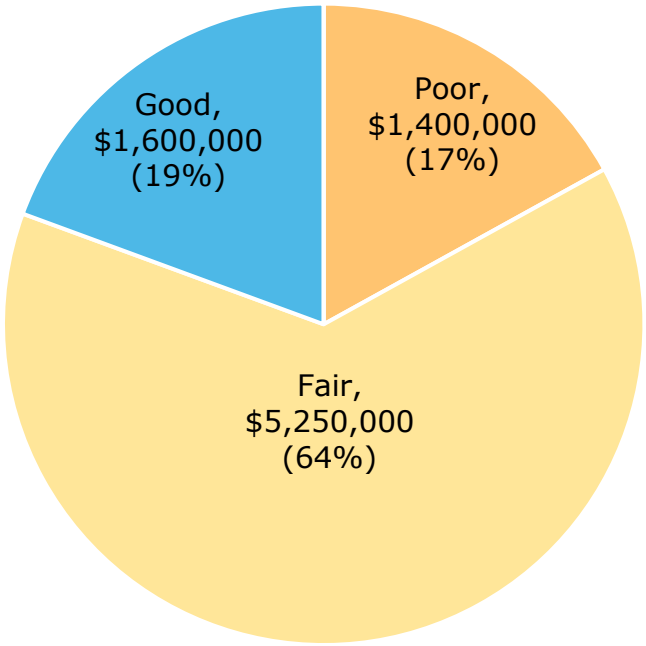


Figure 23 Asset Condition: Bridges & Culverts Overall

As illustrated below, based on condition assessments, the majority of the Town's bridges & culverts is in fair or better condition.

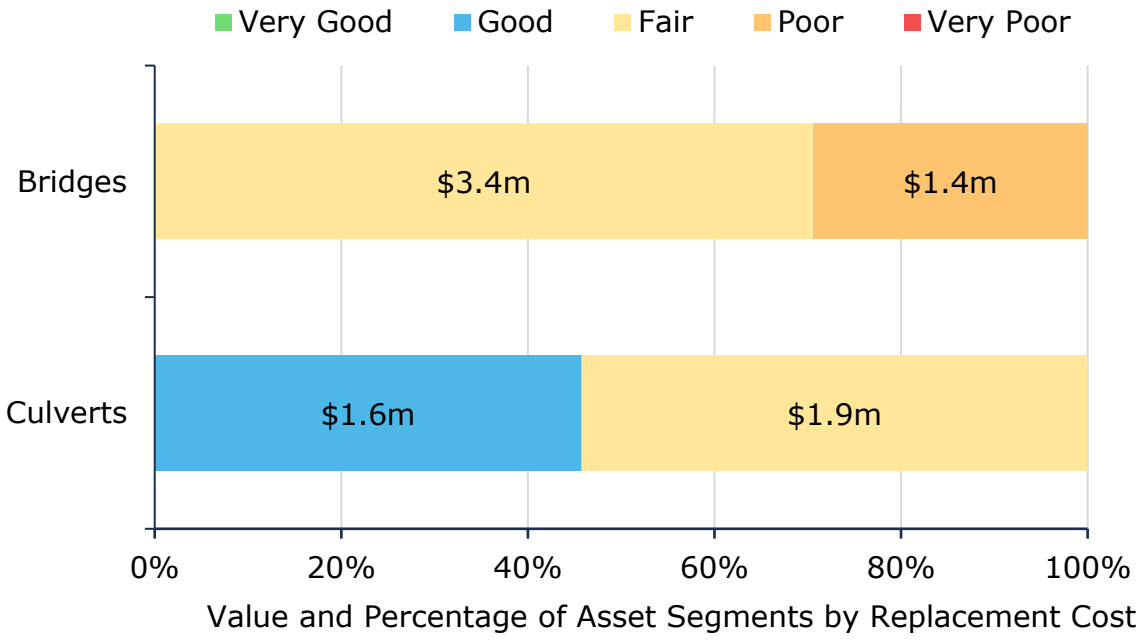


Figure 24 Asset Condition: Bridges & Culverts by Segment

5.2.1 Current Approach to Condition Assessment

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

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 metres are completed every year in accordance with the Ontario Structure Inspection Manual (OSIM)
- The Town possesses one bridge (Cecile) in a critical state of deterioration and approximately $2 million will be invested as per OSIM recommendations to improve its condition

5.3 Age Profile

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

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

Figure 25 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

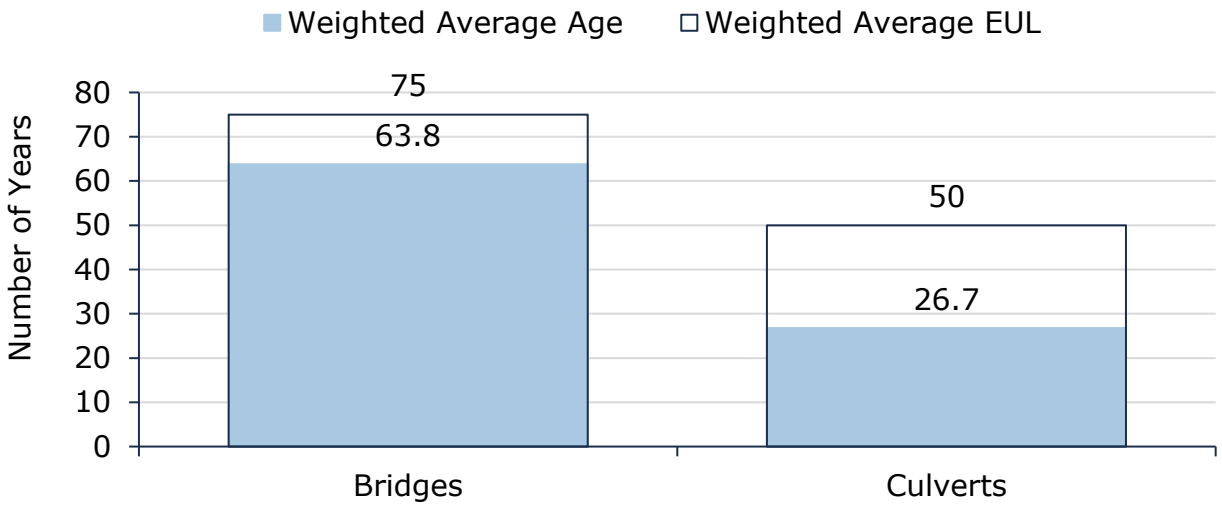


Figure 25 Estimated Useful Life vs. Asset Age: Bridges & Culverts

5.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	Internal staff complete regular maintenance activities for bridges such as sweeping. Winter maintenance activities such as snow removal, salting, and de-icing are performed on an as-needed basis
	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2023

Table 15 Lifecycle Management Strategy: Bridges & Culverts

5.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, structure type, AADT and replacement costs. The risk ratings for assets without useful attribute data were calculated using only condition, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 Very Low - (0%)	5 - 7 Low $1,600,000 (19%)	8 - 9 Moderate - (0%)	10 - 14 High $5,250,000 (64%)	15 - 25 Very High $1,400,000 (17%)

Figure 26 Risk Matrix: Bridges & Culverts

5.6 Levels of Service

The table that follows summarize the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

5.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency	Scope	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,

Metric Type	KPI Metric	Service Attribute	Current LOS
	vehicles, pedestrians, cyclists)		emergency vehicles, and cyclists can cross them without restriction.
Community	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	Quality	As per Ontario Regulation 104/97, every bridge and structural culvert (>3m) owned by the Town is subject to a biennial inspection, following best practices as laid out in the Ontario Structure Inspection Manual (OSIM). All structures are assessed and assigned a Bridge Condition Index (BCI) score, which ranges from 0-100. Condition directly affects the usability of structures, whether it is the paved surface for vehicles, sidewalks for bikes and pedestrians, and so on.
Technical	% of bridges in the Municipality with loading or dimensional restrictions	Scope	0%
Technical	Average bridge condition index value for bridges in the Municipality	Quality	64
	Average bridge condition index value for structural culverts in the Municipality		68

Table 16: Bridges & Culverts – Current Levels of Service

5.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 45-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the Town's bridges & culverts.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$8,250,000	66%	$161,000
Scenario 2 - Current Capital Investment Rate		15%	$13,000
Scenario 3 - Maintain Condition 40%		48%	$70,000

Table 17: Bridges & Structural Culverts - Proposed Levels of Service Scenarios

5.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Bridges	$608k	$1.4m	-	-	-	-	-	-	-	-
Structural Culverts	-	-	-	-	-	-	-	-	-	-
Total	**$608k**	**$1.4m**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table 18: Bridges & Structural Culverts - 10-Year Capital Forecast

6. Water Network

6.1 Inventory & Valuation

Table 19 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's water network inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Booster Station	1	Assets	$697,200	User-Defined
Water Equipment	4	Assets	$99,436	CPI
Water Treatment	3	Assets	$64,214,077	User-Defined
Watermains	62,699	Metres	$36,206,935	Cost per Unit
TOTAL			**$101,217,648**	

Table 19 Detailed Asset Inventory: Water Network

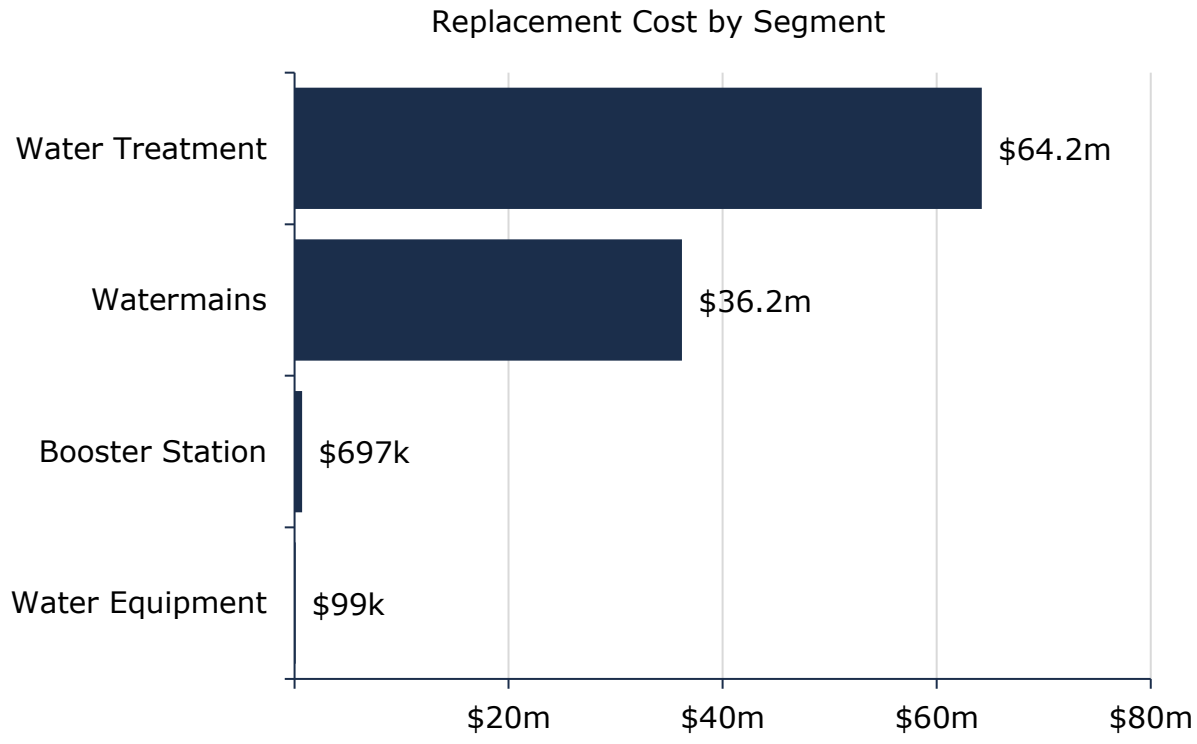


Figure 27 Portfolio Valuation: Water Network

6.2 Asset Condition

Figure 28 summarizes the replacement cost-weighted condition of the Town's water network. Based on a combination of field inspection data and age, 93% of assets are in fair or better condition; the remaining 7% of assets are in poor to very poor condition. Condition assessments were available for 60% of assets in the category.

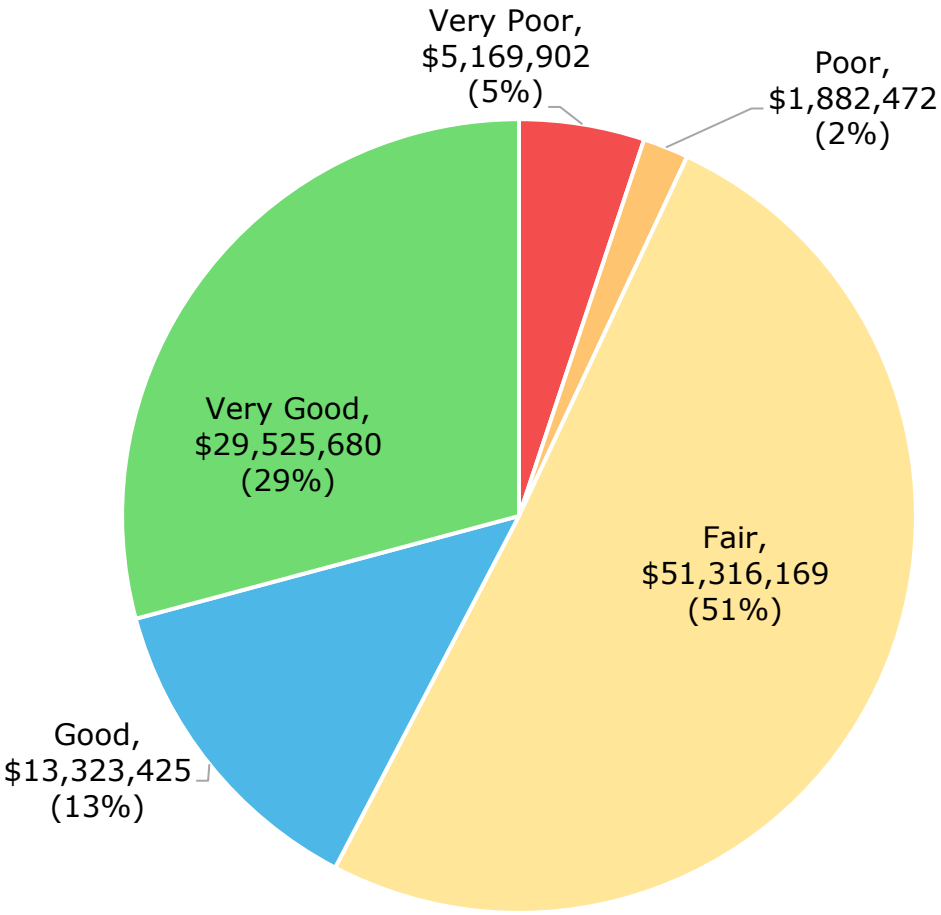


Figure 28 Asset Condition: Water Network Overall

As illustrated in Figure 29, most of the Town's water network assets are in fair or better condition except for water equipment being in mostly poor or worse condition.

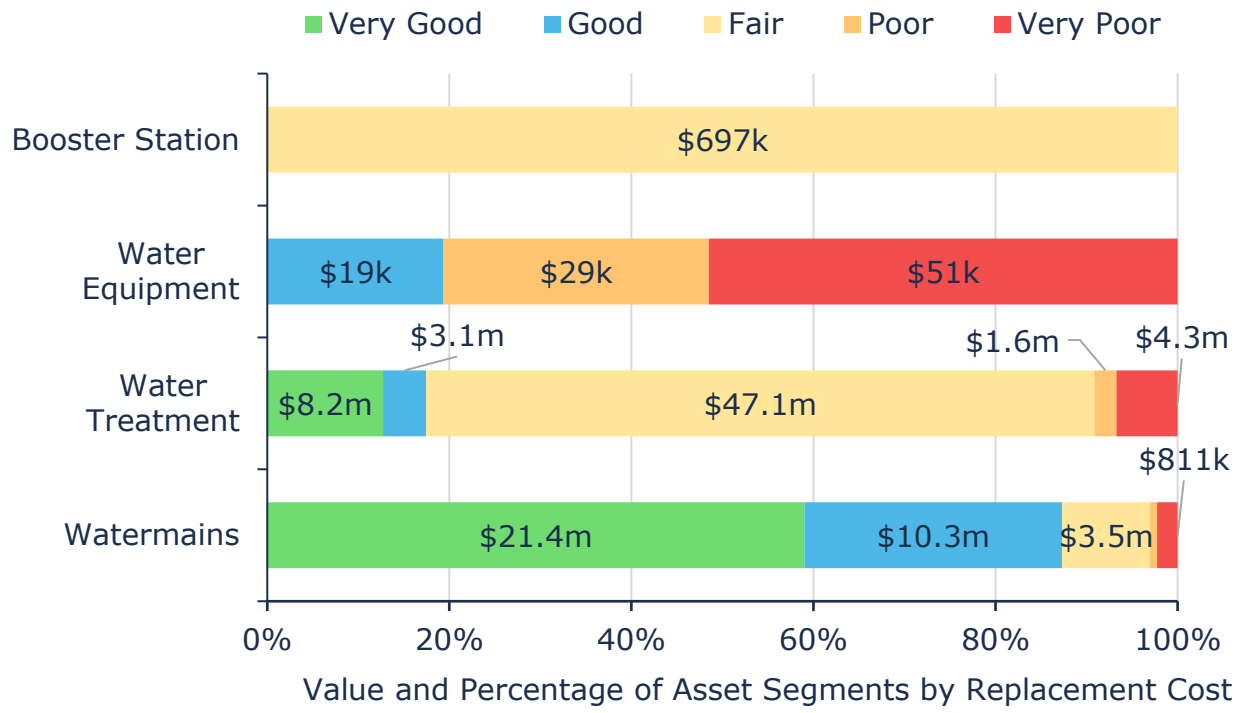


Figure 29 Asset Condition: Water Network by Segment

6.2.1 Current Approach to Condition Assessment

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

- Staff rely on the age of the asset and number of breaks of water mains to determine the projected condition of assets
- There are no formal condition assessment programs in place for the water network.

6.3 Age Profile

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

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

Figure 30 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

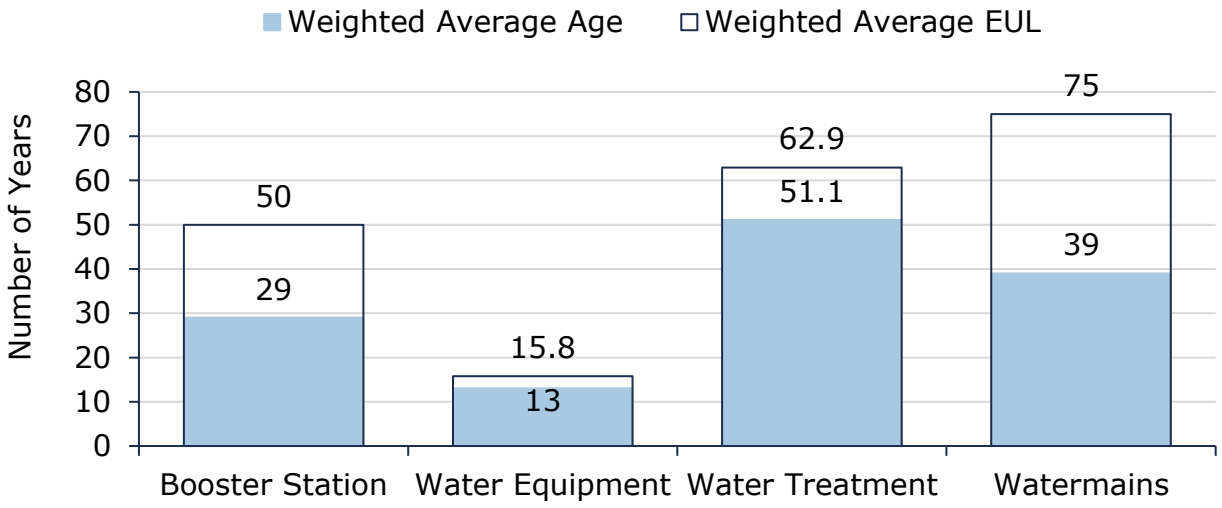


Figure 30 Estimated Useful Life vs. Asset Age: Water Network

6.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Inspection/ Maintenance	Unidirectional flushing operations are routinely performed to enhance water quality and system efficiency
	Detailed readings for flow capacity are systematically recorded
	Fire flow testing is completed through external contractors, providing comprehensive reports for each hydrant, on a biennial basis

Activity Type	Description of Current Strategy
	Cathodic protection is implemented whenever there is access to the main pipe during repair and maintenance
	Corrosion inhibitor, specifically zinc polyphosphate is applied to mitigate corrosion-related issues
Rehabilitation	Rehabilitation strategies for water mains involve relining, with a relining program to be implemented in the future
Replacement	Asset replacement decisions are multifaceted and can be triggered by factors such as watermain breaks and leaks, fire flow and pressure requirements, unidirectional flushing results, resident complaints, and the recommendations of engineering services in conjunction with reconstruction projects
	Replacement activities for water mains are conducted and prioritized with the replacement of other underground infrastructure, to best streamline projects.

Table 20 Lifecycle Management Strategy: Water Network

6.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, surface type, asset type, replacement costs, and diameter. The risk ratings for assets without useful attribute data were calculated using only condition, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$12,662,500 (13%)	$20,982,523 (21%)	$13,189,532 (13%)	$13,433,771 (13%)	$40,949,322 (40%)

Figure 31 Risk Matrix: Water Network

6.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

6.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description, which may include maps, of the user groups or areas of the Municipality that are connected to the municipal water system	Scope	See Appendix B
	Description, which may include maps, of the user groups or areas of the Municipality that have fire flow		See Appendix B
Community	Description of boil water advisories and service interruptions	Reliability	Hawkesbury experienced no boil water advisories in 2024. However, water service interruptions may occur due to main breaks, maintenance activities or reconstruction projects. Staff tend to these interruptions and inform residents on the same day.
Technical	% of properties connected to the municipal water system	Scope	100%
	% of properties where fire flow is available		100%
Technical	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to	Reliability	0

Metric Type	KPI Metric	Service Attribute	Current LOS
	the municipal water system		
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system		0

Table 21: Water Network – Current Levels of Service

6.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 75-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the water network.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$101,218,000	60%	$1,669,000
Scenario 2 - Current Capital Investment Rate		33%	$580,000
Scenario 3 - Maintain Condition 40%		47%	$1,041,000

Table 22: Water Network - Proposed Levels of Service Scenarios

6.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Booster Station	-	-	-	-	-	-	-	-	-	-
Water Equipment	-	$19k	-	-	-	-	$29k	-	-	-
Water Treatment	$372k	$40k	$461k	$395k	$90k	$15k	$774k	$408k	$300k	$65k
Watermains	-	$725k	$150k	-	-	-	$134k	$66k	-	-
Total	**$372k**	**$784k**	**$611k**	**$395k**	**$90k**	**$15k**	**$937k**	**$474k**	**$300k**	**$65k**

Table 23: Water Network - 10-Year Capital Forecast

7. Sanitary Sewer Network

7.1 Inventory & Valuation

Table 24 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's sanitary sewer network inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Lift Station	5	Assets	$595,800	User-Defined
Sanitary Mains	94,433	Metres	$46,982,760	Cost per Unit
Sanitary Sewer Equipment	5	Assets	$253,855	CPI
Treatment Plant	303,637	Area (sq ft)	$45,397,330	User-Defined
TOTAL			**$93,229,745**	

Table 24 Detailed Asset Inventory: Sanitary Sewer Network

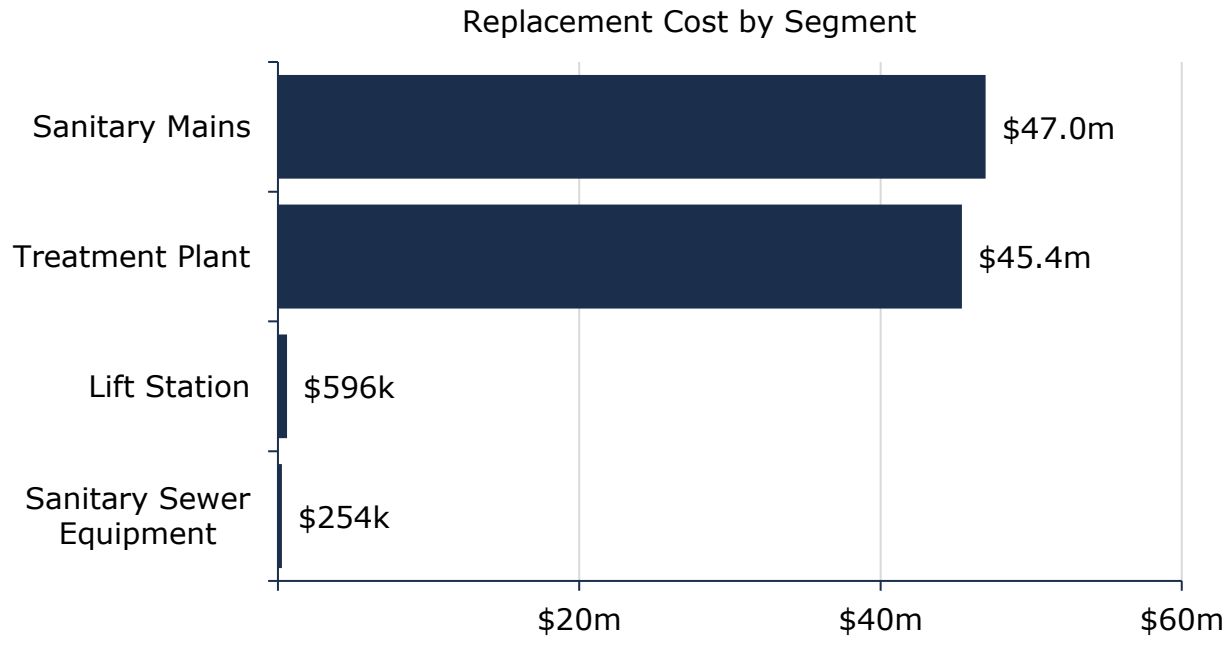


Figure 32 Portfolio Valuation: Sanitary Sewer Network

7.2 Asset Condition

Figure 33 summarizes the replacement cost-weighted condition of the Town's sanitary sewer network. Based on a combination of field inspection data and age, 87% of assets are in fair or better condition; the remaining 13% of assets are in poor to very poor condition.

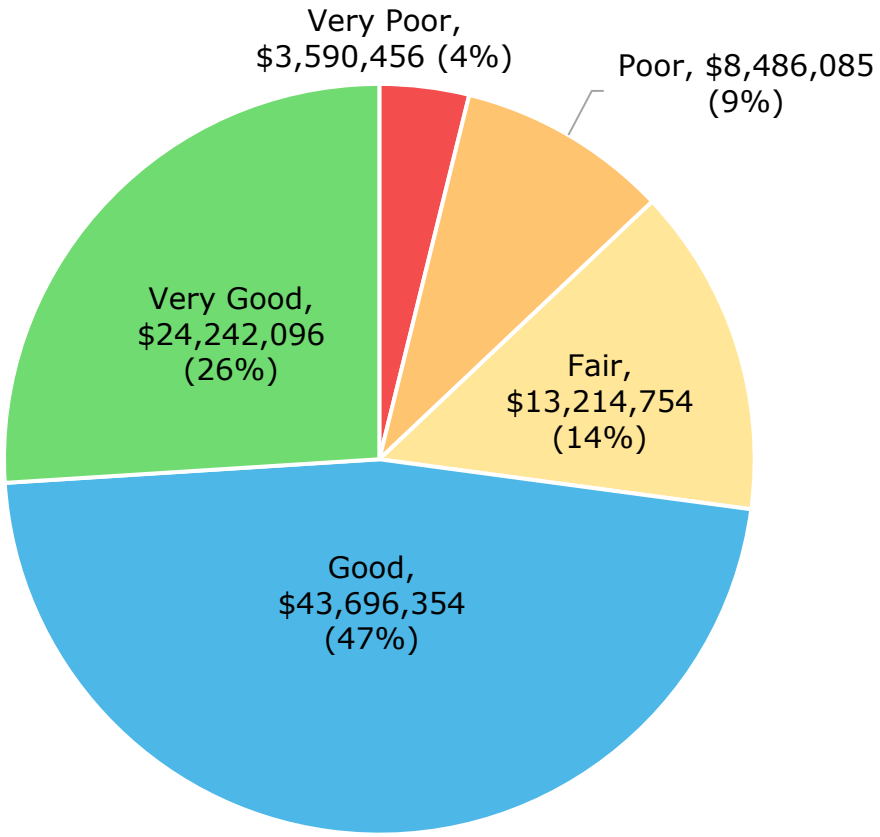


Figure 33 Asset Condition: Sanitary Sewer Network Overall

As illustrated in Figure 34, most the Town's sanitary sewer network assets are in fair or better condition.

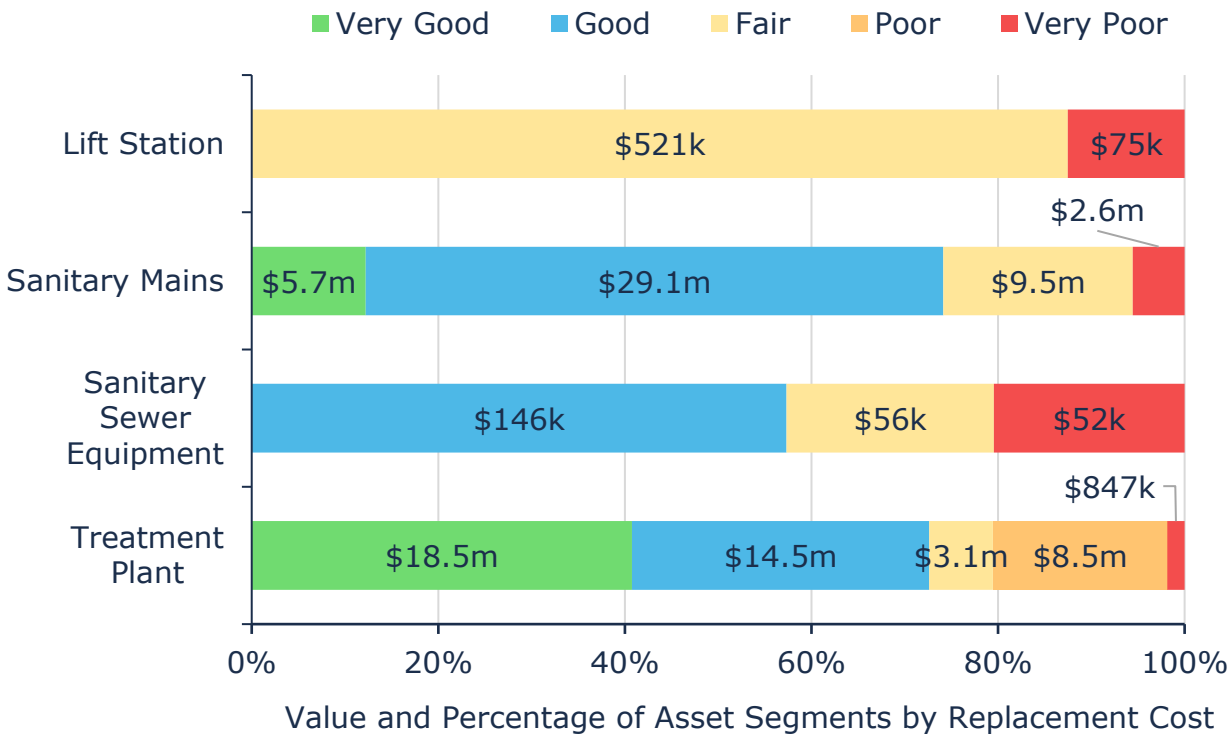


Figure 34 Asset Condition: Sanitary Sewer Network by Segment

7.2.1 Current Approach to Condition Assessment

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

- The most recent CCTV inspection was completed in 2021-2022, and there are intentions to implement further CCTV inspections in areas where issues have been identified
- The Town has gone through a formal building condition assessment of its sewage plant in 2023

7.3 Age Profile

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

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

Figure 35 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

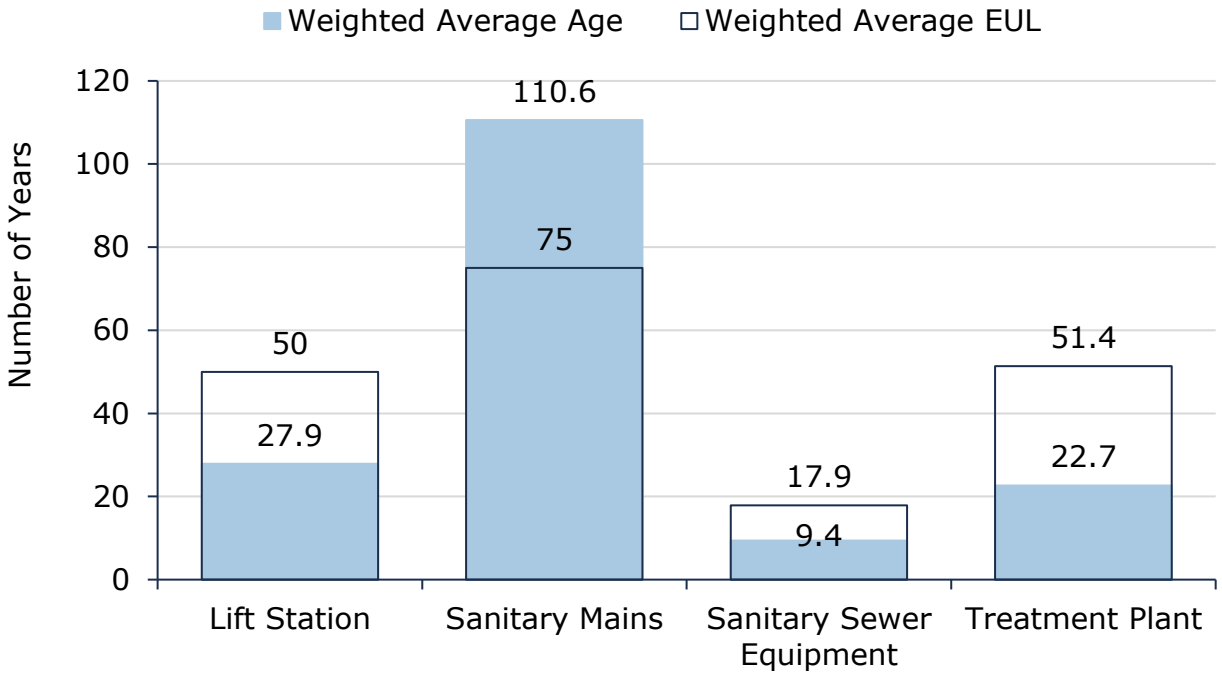


Figure 35 Estimated Useful Life vs. Asset Age: Sanitary Sewer Network

7.4 Current Approach to Lifecycle Management

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 strategy has been developed as a proactive approach to managing the lifecycle of sanitary mains.

Activity Type	Description of Current Strategy
Maintenance	Main flushing is currently carried out selectively on specific network sections, with a focus on addressing problematic

Activity Type	Description of Current Strategy
	areas. The Town plans to transition towards implementing annual flushing across the entire network in the future
	Immediate repairs for mains take precedence, with ongoing maintenance efforts receiving priority once these repairs are completed
	CCTV inspections were conducted in 2007, and there are plans to implement them in areas where issues have been identified
	Manhole maintenance is performed on an annual basis
Rehabilitation	The lift station and water treatment plant are currently owned and maintained by the Town, and there are no immediate plans for upgrades or renewal as these assets are relatively new
	Rehabilitation strategies for mains involve relining, with a relining program to be implemented in the future
Replacement	Replacement activities for mains are conducted and prioritized with the replacement of other underground infrastructure

Table 25 Lifecycle Management Strategy: Sanitary Sewer Network

The Town of Hawkesbury is actively advancing its Environmental Compliance Approval - Consolidated Linear Infrastructure (ECA CLI) processes for both the sanitary and stormwater systems. A draft framework is in place and continues to evolve through ongoing staff development and procedural improvements.

7.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, material, replacement costs, asset segment, and diameter. The risk ratings for assets without useful attribute data were calculated using only condition and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant

information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 **Very Low** $45,923,655 (49%)	5 - 7 **Low** $26,495,533 (28%)	8 - 9 **Moderate** $6,822,573 (7%)	10 - 14 **High** $4,832,610 (5%)	15 - 25 **Very High** $9,155,373 (10%)

Figure 36 Risk Matrix: Sanitary Sewer Network

7.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

7.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description, which may include maps, of the user groups or areas of the Municipality that are connected to the municipal wastewater system	Scope	See Appendix B
Community	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	Reliability	The system has a single combined sewer overflow (CSO) located at the intersection of Cameron Street and Main Street. The overflow manhole contains a benched weir equipped with a flow meter and ultrasonic level/flow sensor and a sample trap which diverts raw sewage to a 525 mm pipe discharging to the Ottawa River.

Metric Type	KPI Metric	Service Attribute	Current LOS
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches		See Appendix B
Community	Description of how storm water can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Reliability	Storm water can enter sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g. weeping tiles). In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its designed capacity. In some cases, this can cause water and/or sewage to overflow backup into homes. the disconnection of weeping tiles from sanitary mains and the use of sump pumps and pits directing storm water to the storm drain system can help to reduce the chance of this occurring.
Community	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to Storm Sewer infiltration	Reliability	The Town follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers. These standards have been determined with consideration of the minimization of sewage overflows and backups.
Community	Description of the effluent that is discharged from sewage treatment plants in	Reliability	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may

Metric Type	KPI Metric	Service Attribute	Current LOS
	the municipal wastewater system		include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.
Technical	% of properties connected to the municipal wastewater system	Scope	99.9%[7]
Technical	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	Reliability	4[8]
Technical	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	Reliability	1[9]
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system		1[10]

Table 26: Sanitary Sewer Network – Current Levels of Service

[7] Around 3 properties are currently not connected to the municipal wastewater system
[8] CSO events
[9] Residential Sewer backup
[10] 1 Bypass

7.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 70-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the sanitary sewer network.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$93,230,000	65%	$1,743,000
Scenario 2 - Current Capital Investment Rate		25%	$300,000
Scenario 3 - Maintain Condition 40%		40%	$807,000

Table 27: Sanitary Sewer Network - Proposed Levels of Service Scenarios

7.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Lift Station	-	-	-	-	-	-	-	-	-	-
Sanitary Mains	-	$15k	-	-	-	-	$5.8m	$24k	-	-
Sanitary Sewer Equipment	-	-	-	-	$17k	-	$107k	-	-	-
Treatment Plant	$1.7m	$59k	$128k	$7k	$123k	$173k	$2.3m	$6.6m	-	-
Total	**$1.7m**	**$74k**	**$128k**	**$7k**	**$140k**	**$173k**	**$8.2m**	**$6.6m**	**-**	**-**

Table 28: Sanitary Sewer Network - 10-Year Capital Forecast

8. Storm Network

8.1 Inventory & Valuation

Table 29 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's storm network inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Storm Mains	75,115	Metres	$44,133,299	Cost per Unit
TOTAL			**$44,133,299**	

Table 29 Detailed Asset Inventory: Storm Sewer System

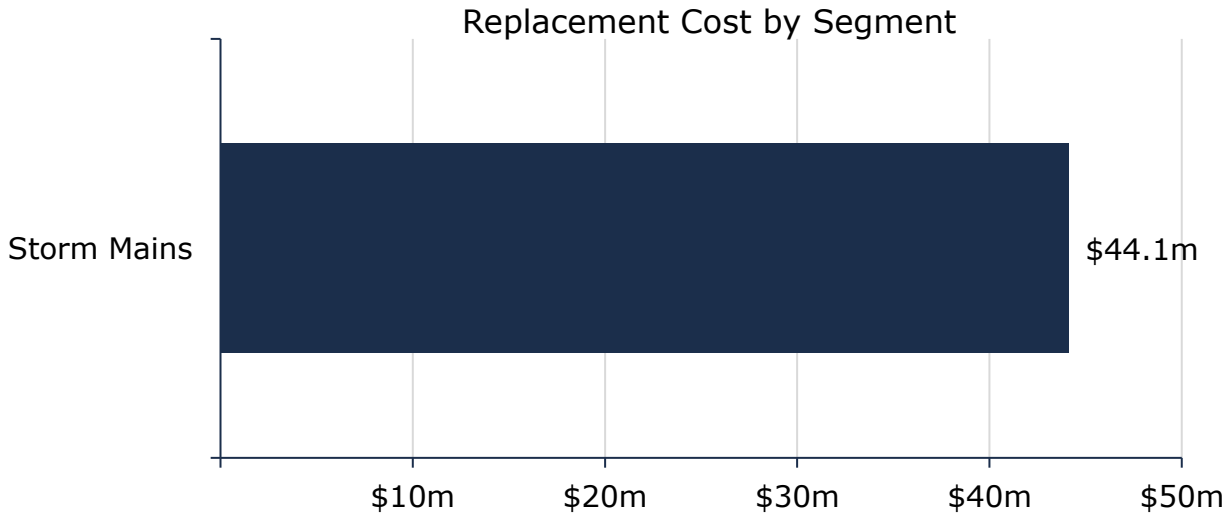


Figure 37 Portfolio Valuation: Storm Sewer System

8.2 Asset Condition

Figure 38 summarizes the replacement cost-weighted condition of the Town's storm network assets. Based on a combination of assessment and age data, approximately 80% of assets are in fair or better condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

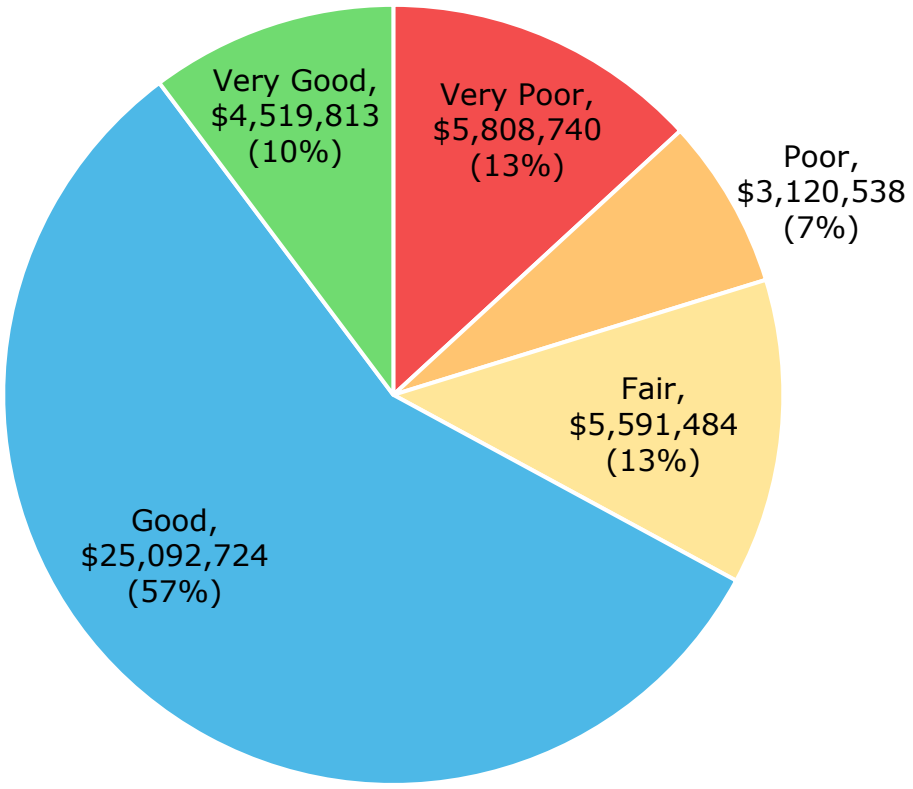


Figure 38 Asset Condition: Storm network Overall

Figure 39 summarizes the assessed condition of storm network assets. The analysis illustrates that most stormwater mains are in fair or better condition. However, 20% of mains, with a current replacement cost of about $8.9 million, are in poor or worse condition.

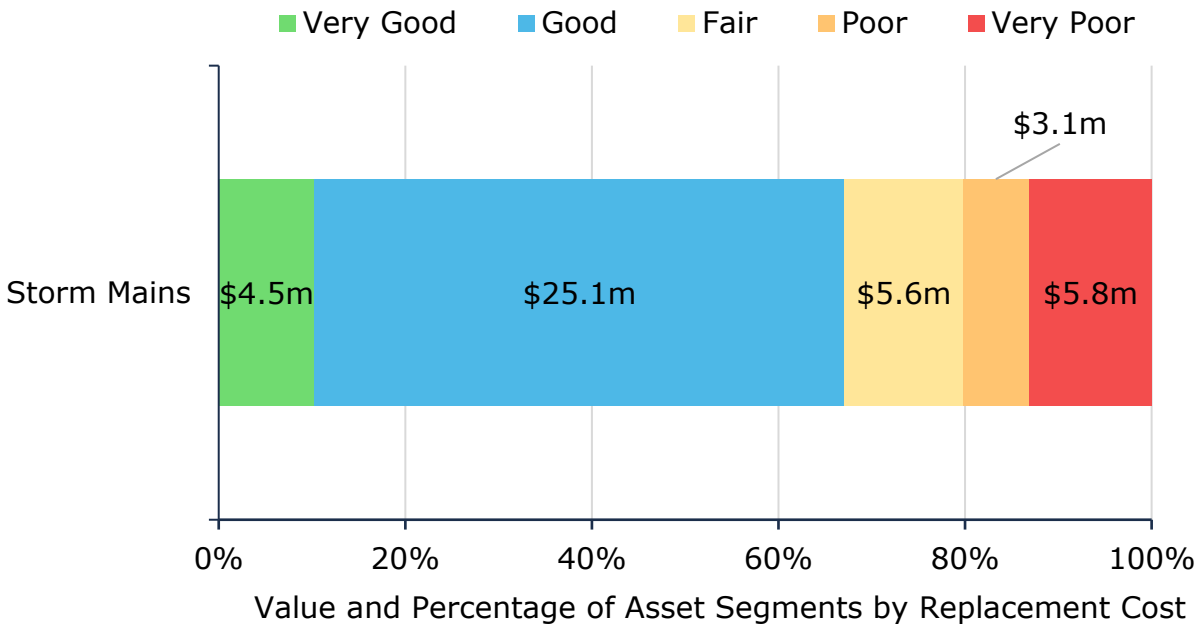


Figure 39 Asset Condition: Storm Network

8.2.1 Current Approach to Condition Assessment

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

- There are no formal condition assessment programs in place for the storm appurtenances
- In 2020, a CCTV inspection was conducted for storm mains, and there are plans to establish a recurring CCTV program every 5 years

8.3 Age Profile

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

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment

programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 40 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

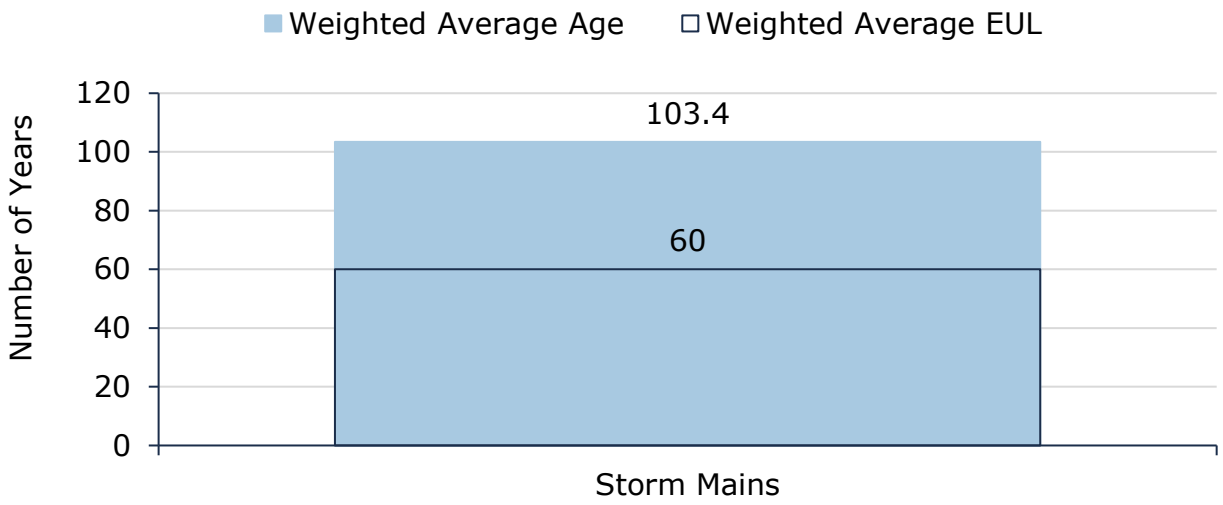


Figure 40 Estimated Useful Life vs. Asset Age: Storm Network

8.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance	Catch basin cleaning is conducted every two years, with an annual flushing program set to be introduced in the coming year as part of the maintenance schedule
	Annual maintenance is consistently carried out on manholes to ensure functionality and structural integrity
	Maintenance activities related to storm network assets tend to be more reactive in nature, on an as-needed basis

Activity Type	Description of Current Strategy
	In 2020, a CCTV inspection was carried out, with plans in place to establish a recurring CCTV program to be conducted with an aim of 25% coverage at a time until the whole town is assessed
Rehabilitation	No trenchless re-lining has been completed. Instead, the approach is to address specific areas with spot repairs as the need arises
Replacement	Replacement of storm assets is predominantly reactive, as these components are generally scheduled for replacement toward the end of their expected service life

Table 30 Lifecycle Management Strategy: Storm Network

8.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, material, diameter, and replacement costs. The risk ratings for assets without useful attribute data were calculated using only condition and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 **Very Low** $20,487,471 (46%)	5 - 7 **Low** $13,383,536 (30%)	8 - 9 **Moderate** $1,879,599 (4%)	10 - 14 **High** $2,690,035 (6%)	15 - 25 **Very High** $5,692,658 (13%)

Figure 41 Risk Matrix: Storm Network

8.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as

well as any additional performance measures that the Town has selected for this AMP.

8.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	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 Storm Sewer system	Scope	See Appendix B[11]
Technical	% of properties in Municipality resilient to a 100-year storm	Scope	TBD[12]
	% of the municipal storm sewer management system resilient to a 5-year storm		100%

Table 31: Storm Network – Current Levels of Service

8.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 55-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

[11] The Town will be conducting a study of the Hawkesbury Creek in 2026.
[12] Currently, the Town does not have sufficient data to provide this metric. However, staff estimates indicate that the % of properties resilient to a 100-year storm, would be very low. The Town has 1 localized area prone to flooding by the main street.

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the storm network.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$44,133,000	49%	$736,000
Scenario 2 - Current Capital Investment Rate		21%	$64,000
Scenario 3 - Maintain Condition 40%		40%	$537,000

Table 32: Storm Network - Proposed Levels of Service Scenarios

8.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Storm Mains	$320k	-	$373k	-	-	-	-	-	-	$30k
Total	**$320k**	**-**	**$373k**	**-**	**-**	**-**	**-**	**-**	**-**	**$30k**

Table 33: Storm Network - 10-Year Capital Forecast

Non-Core Assets

9. Facilities

9.1 Inventory & Valuation

Table 34 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's facilities inventory.

Segment	Quantity (components)	Unit of Measure	Replacement Cost	Primary RC Method
Fire	1(150)	Assets	$7,771,200	User-Defined
General Government	3(433)	Assets	$22,770,090	User-Defined
Parks	7(142)	Assets	$4,206,736	User-Defined
Sports Complex	5	Assets	$11,786,711	User-Defined
Transportation	1	Assets	$10,800,000	User-Defined
TOTAL			**$57,334,737**	

Table 34 Detailed Asset Inventory: Facilities

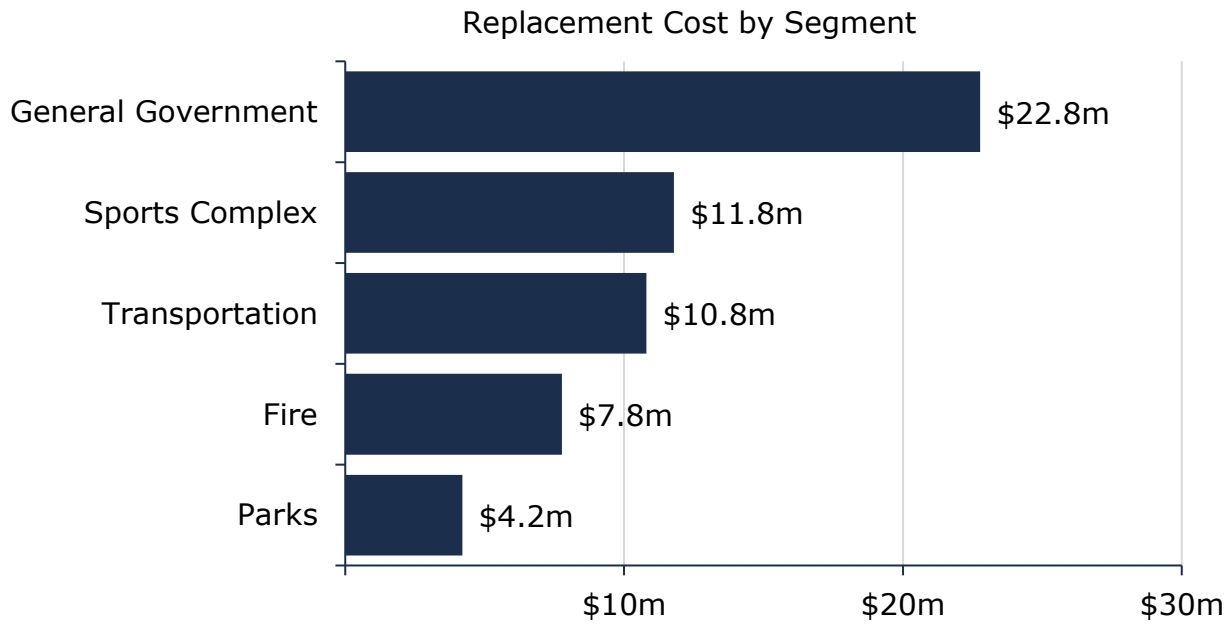


Figure 42 Portfolio Valuation: Facilities

9.2 Asset Condition

Figure 43 summarizes the replacement cost-weighted condition of the Town's Facilities portfolio. Based assessment data and age, 49% of Facilities assets are in fair or better condition. Aspects of some of these assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As Facilities are componentized, condition data is presented at the individual element or component level within each building. 58% of Facilities had assessed condition ratings available, the remainder was derived based on age.

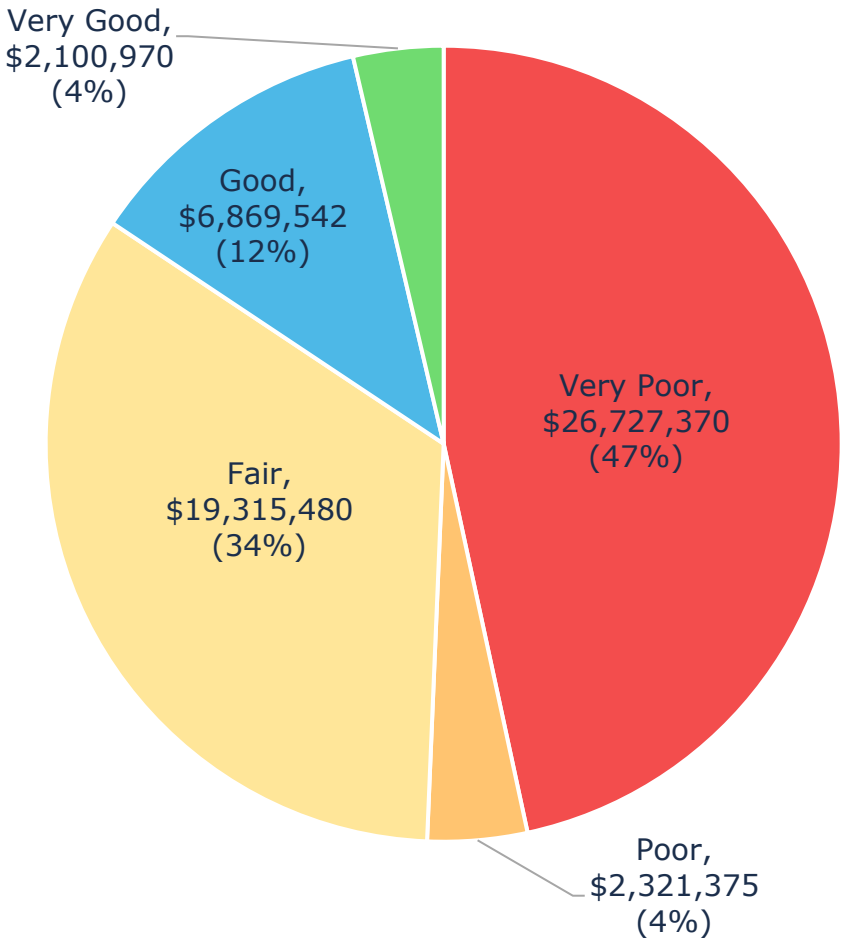


Figure 43 Asset Condition: Facilities Overall

Figure 44 summarizes the assessment based and age-based condition of Facilities by each department.

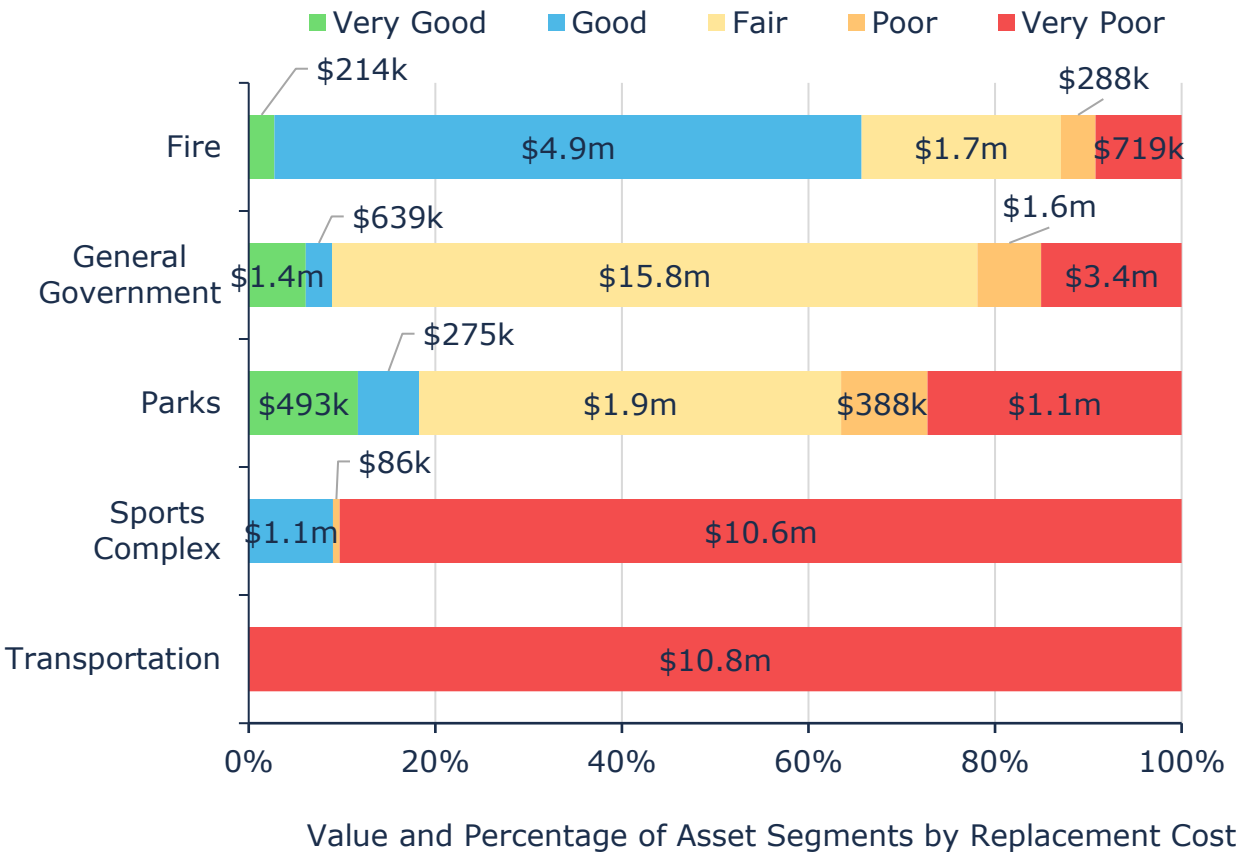


Figure 44 Asset Condition: Facilities by Segment

Facilities assets are unique in that they rarely require the need for replacement based solely on condition. It is typical that, in addition to condition, other factors, such as capacity, will impact the asset's ability to serve the purpose originally intended.

9.2.1 Current Approach to Condition Assessment

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

- Comprehensive Building Condition Assessments (BCAs) have been completed to evaluate the structural, mechanical, electrical, and architectural elements of various facilities
- Internal assessments are conducted on an ad-hoc basis, as needed

9.3 Age Profile

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

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

Figure 45 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

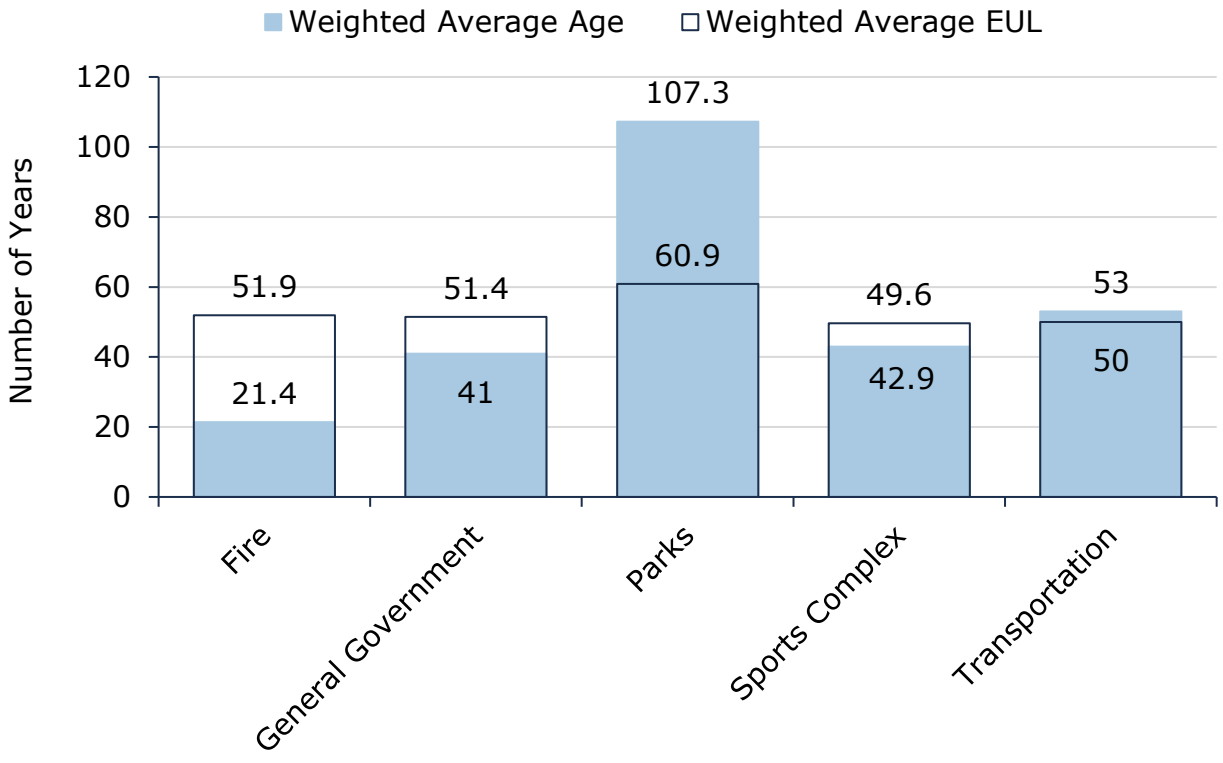


Figure 45 Estimated Useful Life vs. Asset Age: Facilities

9.4 Current Approach to Lifecycle Management

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

Table 35 outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	A Joint Health and Safety Committee is in place, conducting meetings every 3 months to ensure ongoing safety compliance and risk management within buildings
	Fire alarm and sprinkler systems undergo comprehensive testing once per year
	Regular duct cleaning and boiler maintenance are conducted
	Boiler maintenance for the pool undergoes thorough inspection and maintenance every 4 months, carried out by a third-party to ensure compliance and functionality
	Elevators undergo monthly inspections conducted by a qualified contractor, ensuring their reliability and safety
	HVAC systems receive start-up procedures from a third-party every winter and summer, ensuring proper functionality
Replacement	Replacement activities are reactive in nature, addressing components or systems on an as-needed basis. Buildings typically approach their end-of-life to where replacement or rehabilitation is determined to be appropriate

Table 35 Lifecycle Management Strategy: Facilities

9.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and building department. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

The matrix classifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability

of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 **Very Low** $17,206,781 (30%)	5 - 7 **Low** $8,096,349 (14%)	8 - 9 **Moderate** $6,945,917 (12%)	10 - 14 **High** $9,577,240 (17%)	15 - 25 **Very High** $15,508,450 (27%)

Figure 46 Risk Matrix: Facilities

9.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

9.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description, which may include maps, of the types of facilities that the Municipality operates and maintains	Scope	Refer to section 9.1
Community	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 9.2 & 9.4
Technical	Average condition rating	Quality	Poor – 31

Table 36: Facilities – Current Levels of Service

9.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 70-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

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

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$57,335,000	52%	$1,361,000
Scenario 2 - Current Capital Investment Rate		10%	$127,000
Scenario 3 - Maintain Condition 40%		45%	$1,140,000

Table 37: Facilities - Proposed Levels of Service Scenarios

9.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire	$731k	$76k	$200k	-	$61k	-	$14k	$396k	-	$27k
General Government	$2.3m	$166k	$610k	$42k	$446k	$18k	$620k	$241k	$1k	$255k
Parks	$61k	$1k	-	-	$21k	$3k	$5k	$29k	$2k	$134k
Sports Complex	$15k	-	$200k	$215k	$10.6m	$86k	-	-	-	-
Transportation	-	-	-	-	-	-	-	-	-	-
Total	**$3.1m**	**$242k**	**$1.0m**	**$257k**	**$11.2m**	**$107k**	**$640k**	**$665k**	**$3k**	**$415k**

Table 38: Facilities - 10-Year Capital Forecast

10. Vehicles

10.1 Inventory & Valuation

Table 39 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's vehicles inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire Vehicles	4	Assets	$3,041,754	User-Defined
Heavy Duty	7	Assets	$2,095,180	User-Defined
Light Duty	12	Assets	$417,872	CPI
Medium Duty	4	Assets	$196,687	CPI
Winter Control	1	Assets	$315,000	User-Defined
TOTAL			**$6,066,493**	

Table 39 Detailed Asset Inventory: Vehicles

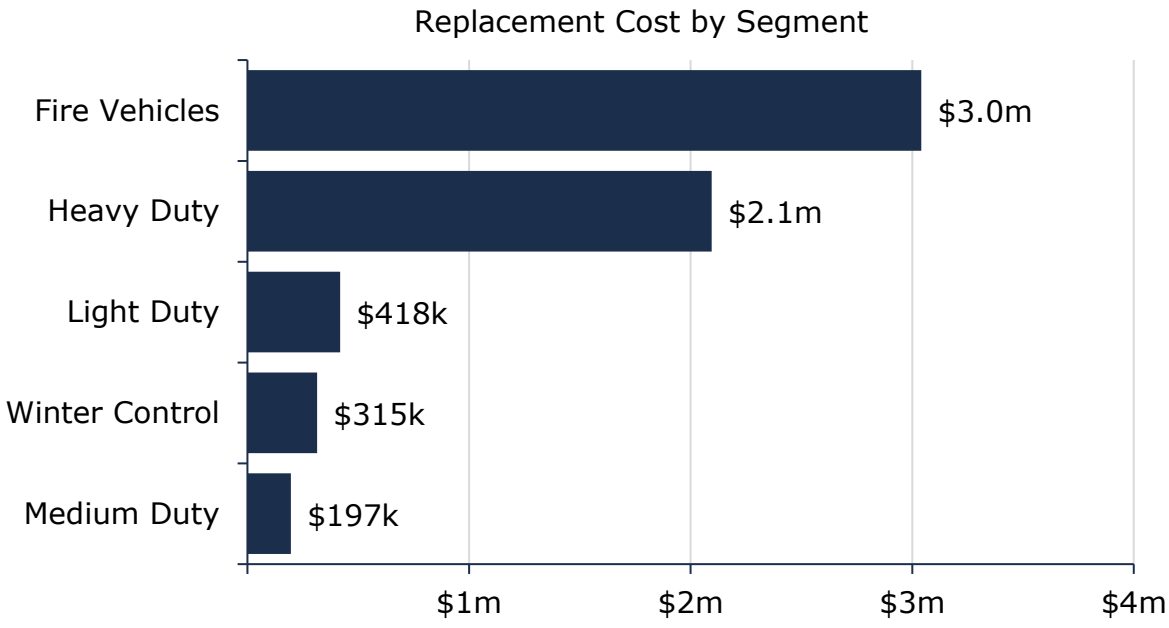


Figure 47 Portfolio Valuation: Vehicles

10.2 Asset Condition

Figure 48 summarizes the replacement cost-weighted condition of the Town's vehicles portfolio. Based on assessment data, 92% of vehicles are in fair or better condition, with the remaining 8% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. Condition data was available for 100% of vehicle assets.

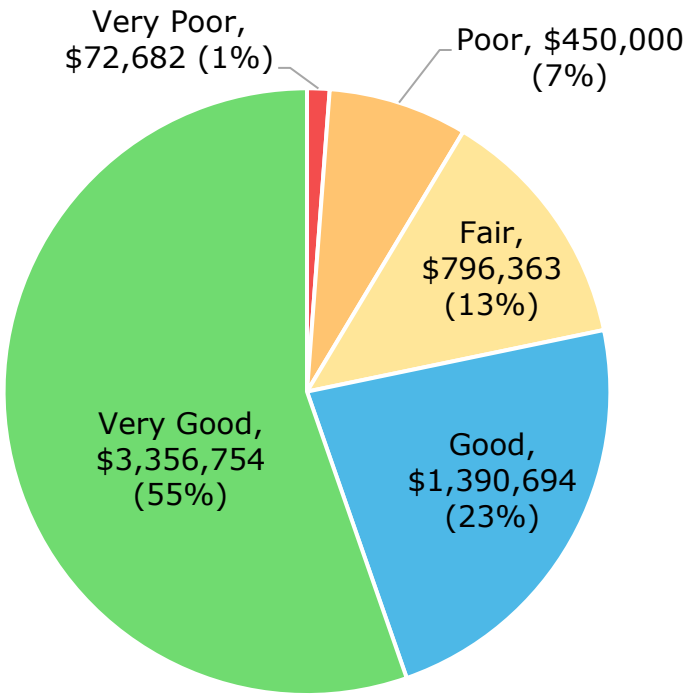


Figure 48 Asset Condition: Vehicles Overall

Figure 49 summarizes the condition of vehicles by use case. Most vehicles across all asset segments are in fair or better condition.

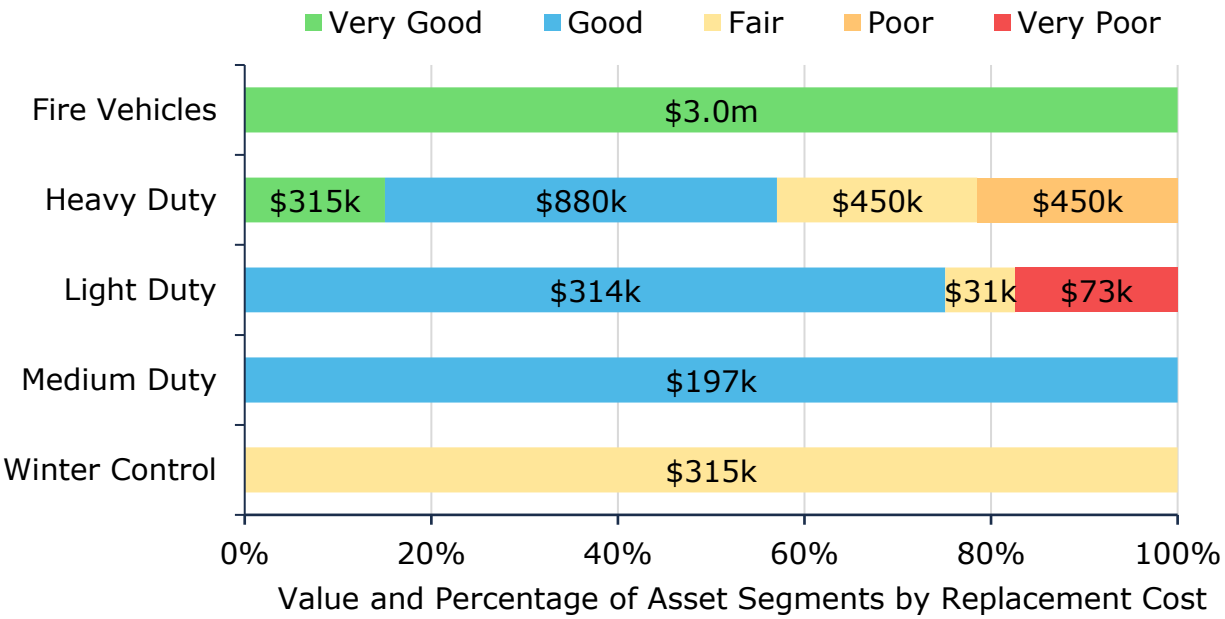


Figure 49 Asset Condition: Vehicles by Segment

10.2.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation
- There are no formal condition assessment programs in place for vehicles

10.3 Age Profile

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

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment

programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 50 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

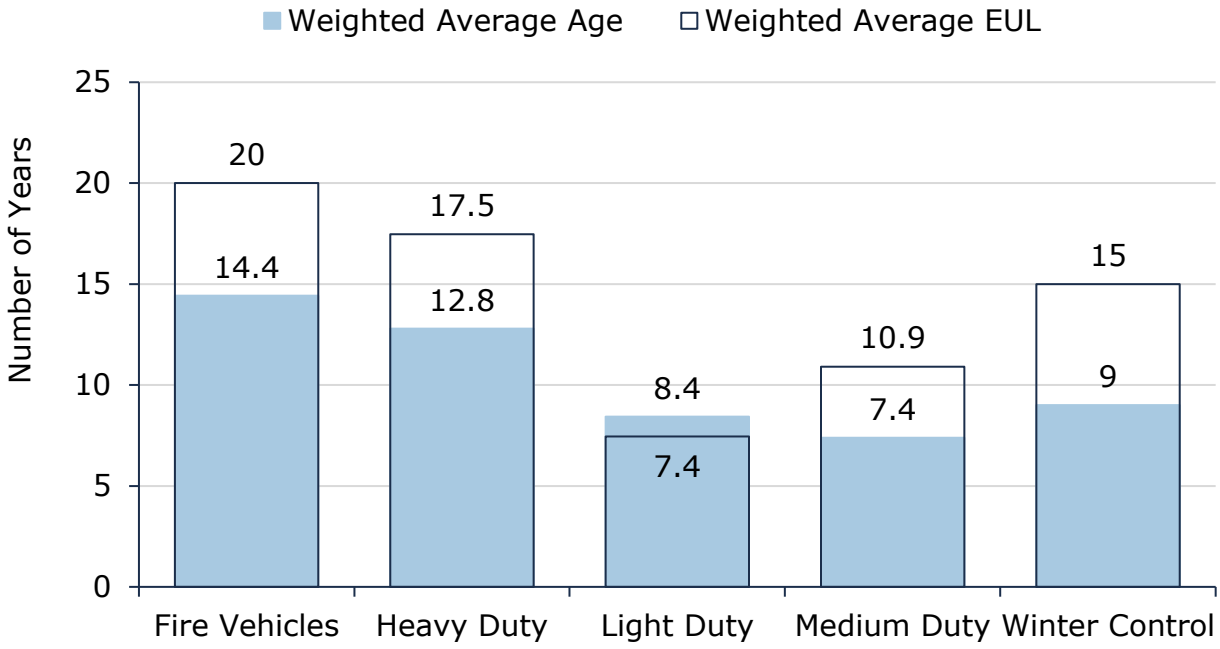


Figure 50 Estimated Useful Life vs. Asset Age: Vehicles

10.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Visual inspections are conducted daily to promptly identify and address any visible issues with the vehicle
	Routine maintenance is scheduled based on hours and mileage, occurring every 10,000 km or every 6 months, ensuring timely

Activity Type	Description of Current Strategy
	and preventive care for optimal performance. Larger trucks undergo a comprehensive inspection daily
	Annual safety certifications are carried out by internal mechanics, ensuring compliance with safety standards and identifying any potential concerns that may impact the vehicle's functionality
	Fire vehicles adhere to NFPA standards, with pump tests conducted to ensure the firefighting equipment's operational readiness and effectiveness
Replacement	While a formal plan is not currently in place, vehicles are typically replaced on a 5–7-year cycle. Many vehicles continue to be in-service beyond their Estimated Useful Life (EUL)
	Replacement is prioritized based on asset condition, costs, risks to health and safety, service life remaining, and its usefulness for the Town
	The Town is in the process of transitioning its lifecycle strategies, specifically regarding its fleet assets. Hawkesbury is transitioning its light-duty vehicles to a leasing model managed by a third-party fleet provider. This new approach offers improved lifecycle planning, professional fleet oversight, and better resale outcomes. Under the new model, vehicles will typically be replaced every 3 to 5 years, allowing the Town to recoup more value at disposal and reduce long-term maintenance burdens. It is critical that when the Town's lifecycle management strategies have fully transitioned over to the new model, that its asset register, and consequently, its asset management plan, be updated

Table 40 Lifecycle Management Strategy: Vehicles

The Town does not currently have a formal fleet policy in place; however, one is expected to be developed within the next 1-2 years. Establishing a fleet policy will support consistent decision-making, optimize lifecycle planning, and ensure that vehicle procurement, maintenance, and replacement align with service delivery objectives and cost-efficiency goals.

10.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, replacement costs, and department.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 **Very Low** $910,268 (15%)	**5 - 7** **Low** $3,356,225 (55%)	**8 - 9** **Moderate** $585,000 (10%)	**10 - 14** **High** $765,000 (13%)	**15 - 25** **Very High** $450,000 (7%)

Figure 51 Risk Matrix: Vehicles

10.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

10.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description or images of the types of vehicles (e.g. light, medium and heavy-duty) that the Municipality operates and the services that they help to provide to the community	Scope	Refer to section 10.1
Community	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 10.2 & 10.4

Metric Type	KPI Metric	Service Attribute	Current LOS
Technical	Average condition rating	Quality	Good – 70

Table 41: Vehicles – Current Levels of Service

10.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 20-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for vehicle assets.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$6,066,000	51%	$382,000
Scenario 2 - Current Capital Investment Rate		36%	$178,000
Scenario 3 - Maintain Condition 40%		47%	$294,000

Table 42: Vehicles - Proposed Levels of Service Scenarios

10.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire Vehicles	-	-	-	-	-	-	-	-	-	-
Heavy Duty	-	-	-	$450k	-	-	-	-	$450k	$295k
Light Duty	$35k	$37k	-	$246k	-	$67k	-	-	$246k	$68k
Medium Duty	-	-	-	-	-	-	-	$161k	-	$36k
Winter Control	-	-	-	-	-	-	$315k	-	-	-
Total	**$35k**	**$37k**	**-**	**$696k**	**-**	**$67k**	**$315k**	**$161k**	**$696k**	**$399k**

Table 43: Vehicles - 10-Year Capital Forecast

11. Machinery & Equipment

11.1 Inventory & Valuation

Table 44 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's machinery & equipment inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire	615	Assets	$1,865,422	User-Defined
General Government	22	Assets	$952,401	User-Defined
Parks	17	Assets	$675,962	User-Defined
Sports Complex	30	Assets	$1,990,059	User-Defined
Transportation	27	Assets	$1,804,230	User-Defined
TOTAL			**$7,288,074**	

Table 44 Detailed Asset Inventory: Machinery and Equipment

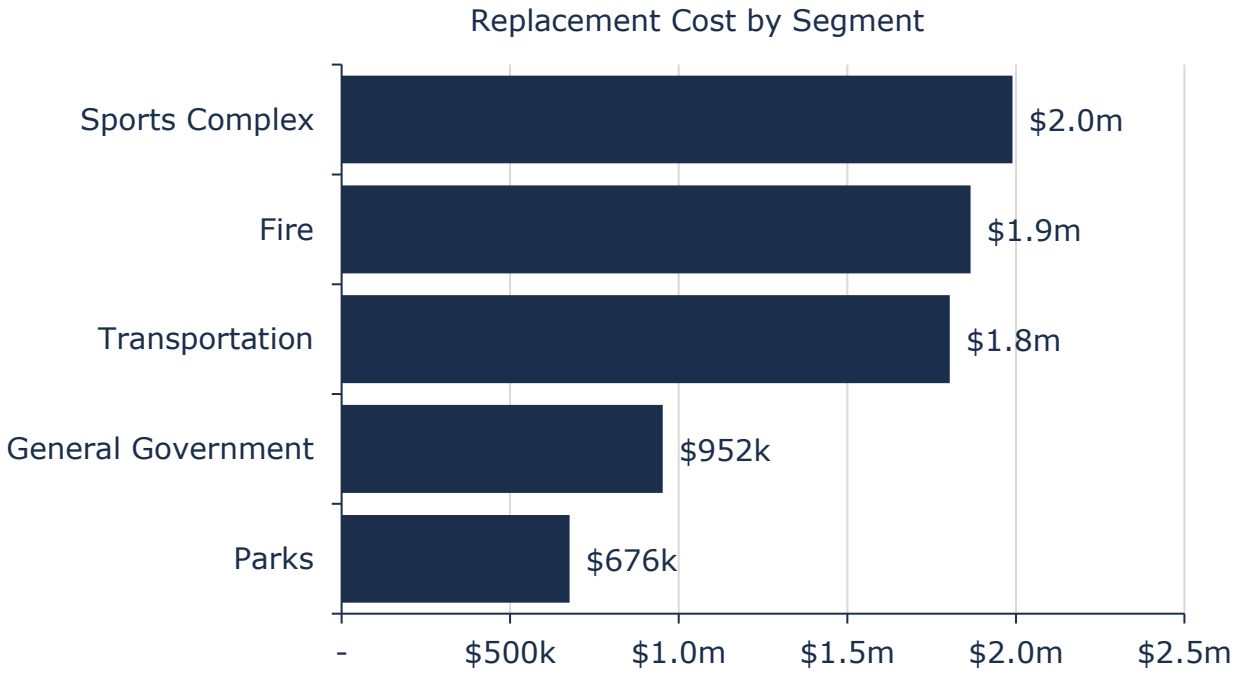


Figure 52 Portfolio Valuation: Machinery and Equipment

11.2 Asset Condition

Figure 53 summarizes the replacement cost-weighted condition of the Town's machinery and equipment portfolio. Based on a combination of assessed conditions and age data, 29% of assets are in fair or better condition; the remaining 71% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

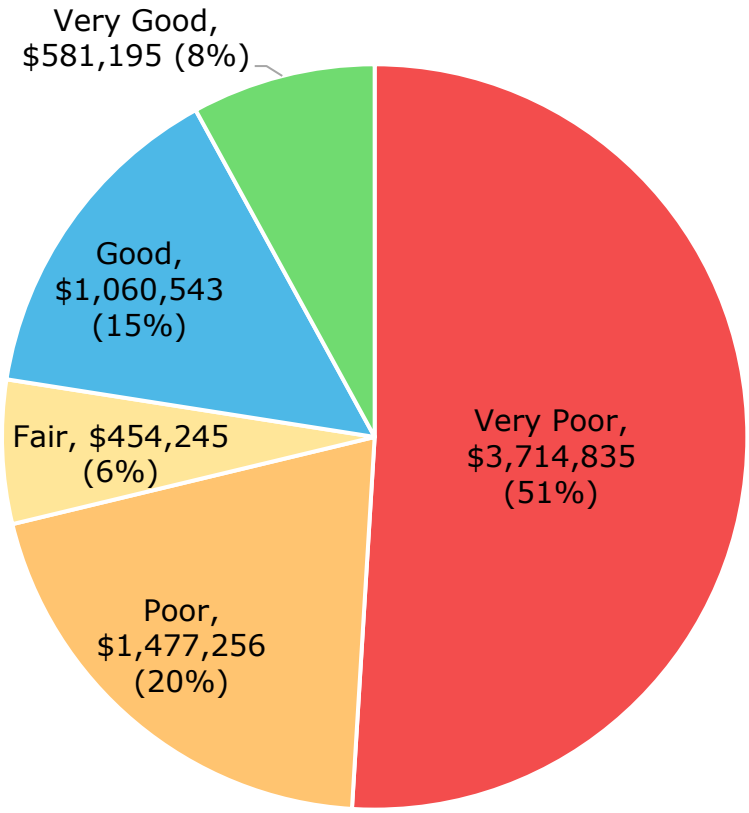


Figure 53 Asset Condition: Machinery and Equipment Overall

Figure 54 summarizes the age-based condition of machinery and equipment by each department.

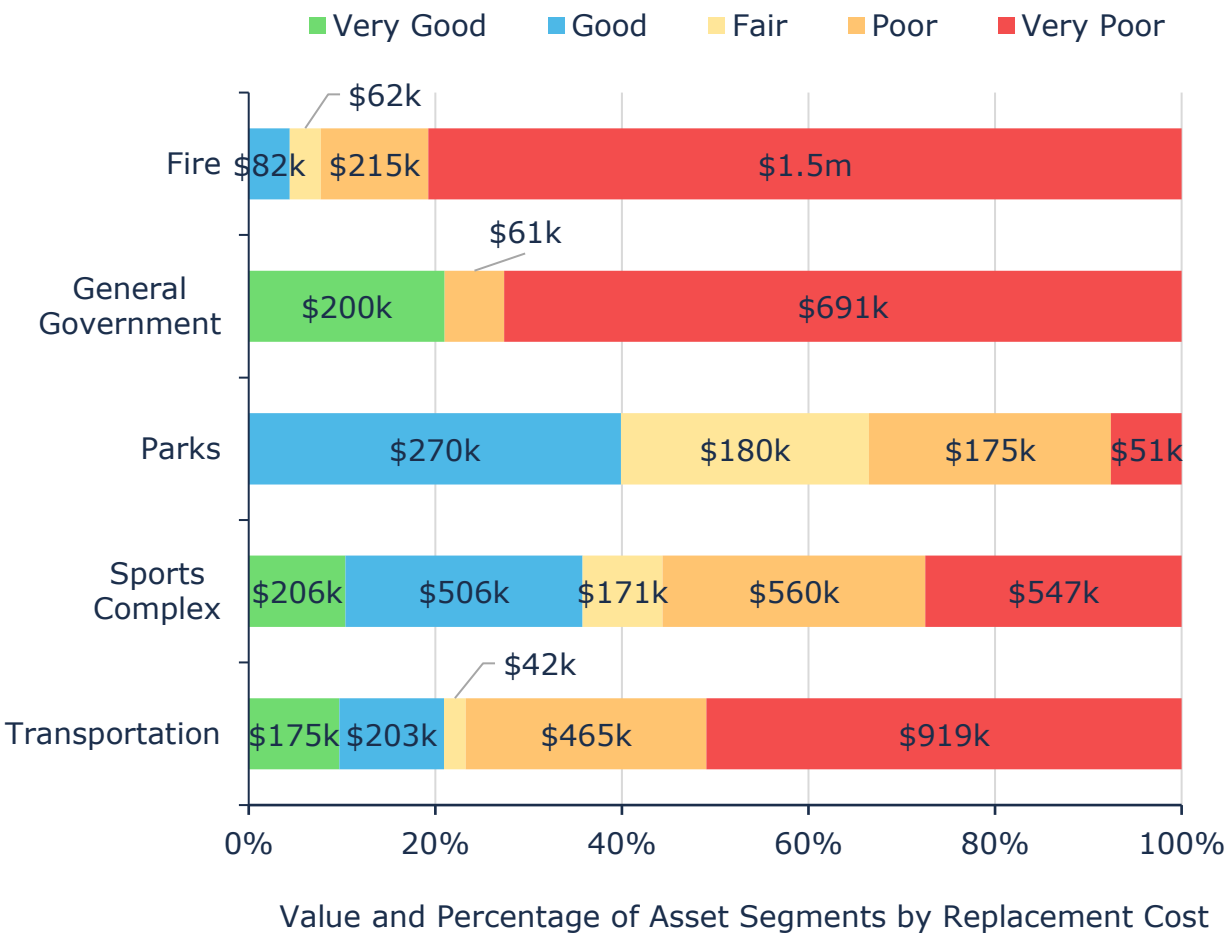


Figure 54 Asset Condition: Machinery and Equipment by Segment

11.2.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections, document mileage, and hours of use of machinery and equipment to ensure they are in state of adequate repair
- Small equipment and lifting devices, including hoists for trucks, undergo inspections once per year by external contractors
- There are no formal internal condition assessment programs in place, although some machinery and equipment were assigned cursory condition ratings for this AMP

11.3 Age Profile

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

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

Figure 55 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

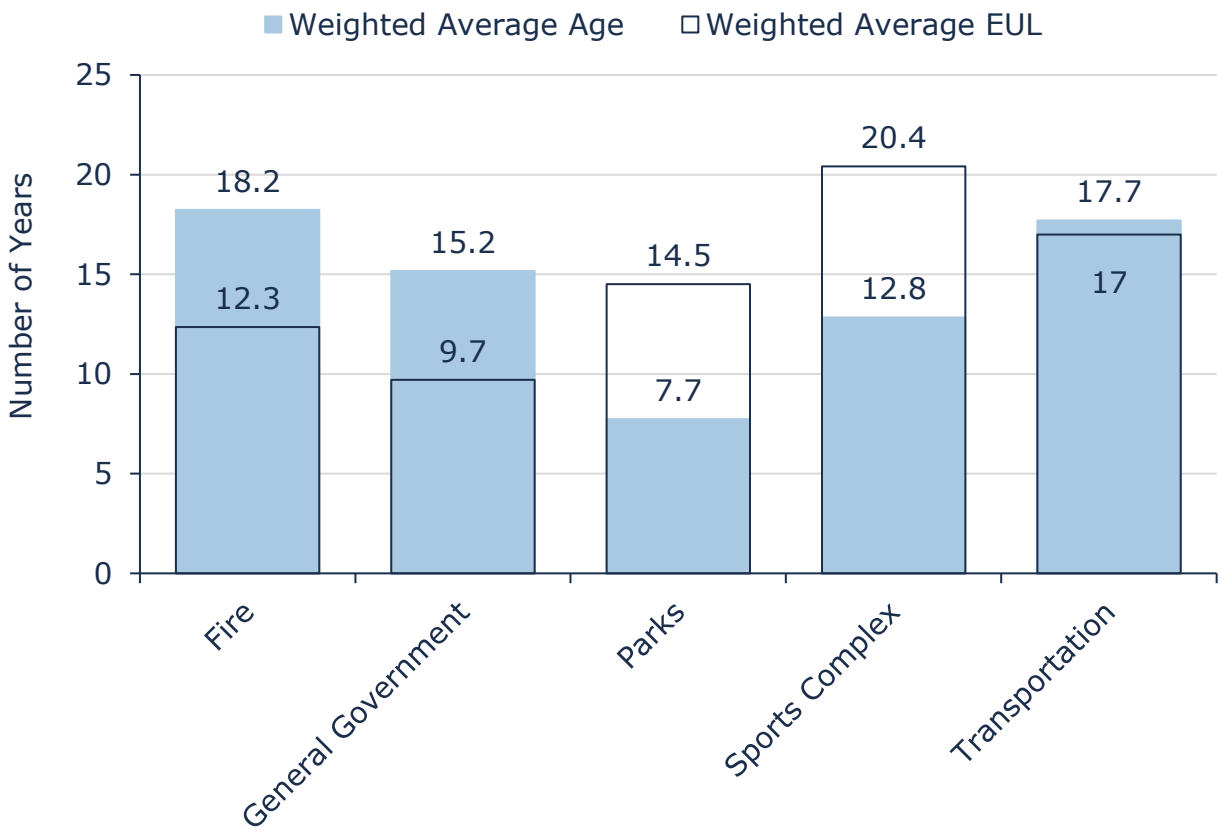


Figure 55 Estimated Useful Life vs. Asset Age: Machinery and equipment

11.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Bunker gear undergoes annual warranty inspections, ensuring that the safety and functionality of equipment is maintained
	Regular inspection and maintenance activities are conducted on various machinery based on specific mileage or hours of use
	Elevators undergo an annual inspection conducted by contracted professionals, ensuring compliance with safety standards and identifying any potential issues
	Small equipment and lifting devices, including hoists for trucks, undergo repairs once per year, completed by external contractors
	Generators, dehumidifiers, and other components not directly part of the building infrastructure are maintained by external contractors
Replacement	The replacement of machinery and equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks
	IT equipment replacement is conducted reactively, promptly addressing failures to minimize disruptions and proactively guided by consultant recommendations

Table 45 Lifecycle Management Strategy: Machinery and Equipment

11.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, department, and replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability

of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 Very Low $685,638 (9%)	5 - 7 Low $1,120,395 (15%)	8 - 9 Moderate $378,100 (5%)	10 - 14 High $1,561,175 (21%)	15 - 25 Very High $3,542,766 (49%)

Figure 56 Risk Matrix: Machinery and equipment

11.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

11.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description or images of the types of machinery and equipment that the Municipality operates and the services that they help to provide to the community	Scope	Refer to section 11.1
Community	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 11.2 & 11.4
Technical	Average condition rating	Scope	Poor – 29

Table 46: Machinery and Equipment – Current Levels of Service

11.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 40-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

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

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$7,288,000	49%	$600,000
Scenario 2 - Current Capital Investment Rate		23%	$278,000
Scenario 3 - Maintain Condition 40%		43%	$503,000

Table 47: Machinery and equipment - Proposed Levels of Service Scenarios

11.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire	$1.0 m	$506k	$23k	$23k	-	$147k	$202k	$23k	-	-
General Government	-	-	$16k	-	$29k	$596k	-	-	-	-
Parks	$21k	-	-	$150k	$21k	$4k	$30k	$125k	$150k	-
Sports Complex	-	-	$72k	-	$350k	$173k	$46k	-	$71k	-
Transportation	-	$32k	$400k	$427k	$8k	$15k	$116k	-	-	-
Total	**$1.0m**	**$538k**	**$511k**	**$600k**	**$408k**	**$935k**	**$393k**	**$148k**	**$221k**	**-**

Table 48: Machinery and equipment - 10-Year Capital Forecast

12. Land Improvements

12.1 Inventory & Valuation

Table 49 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's land improvements inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Parking Lots	6	Assets	$931,054	User-Defined
Parks	87	Assets	$2,548,207	CPI
TOTAL			**$3,479,261**	

Table 49 Detailed Asset Inventory: Land Improvements

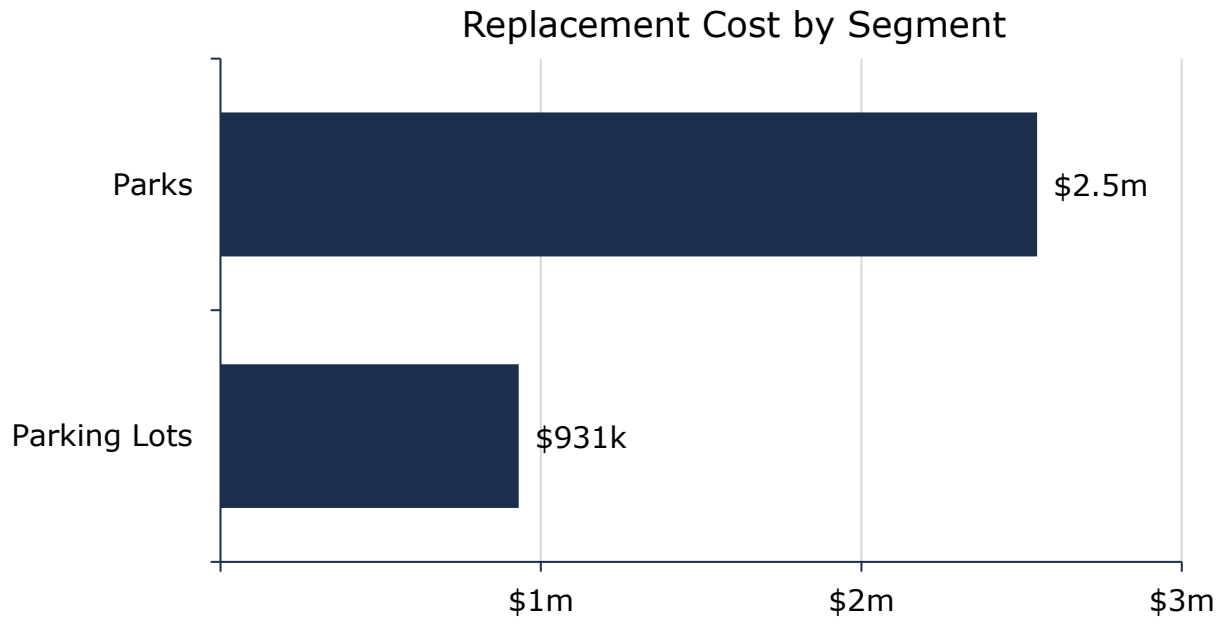


Figure 57 Portfolio Valuation: Land Improvements

12.2 Asset Condition

Figure 58 summarizes the replacement cost-weighted condition of the Town's land improvements portfolio. Based on age data, 10% of assets are in fair or better condition; the remaining 90% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

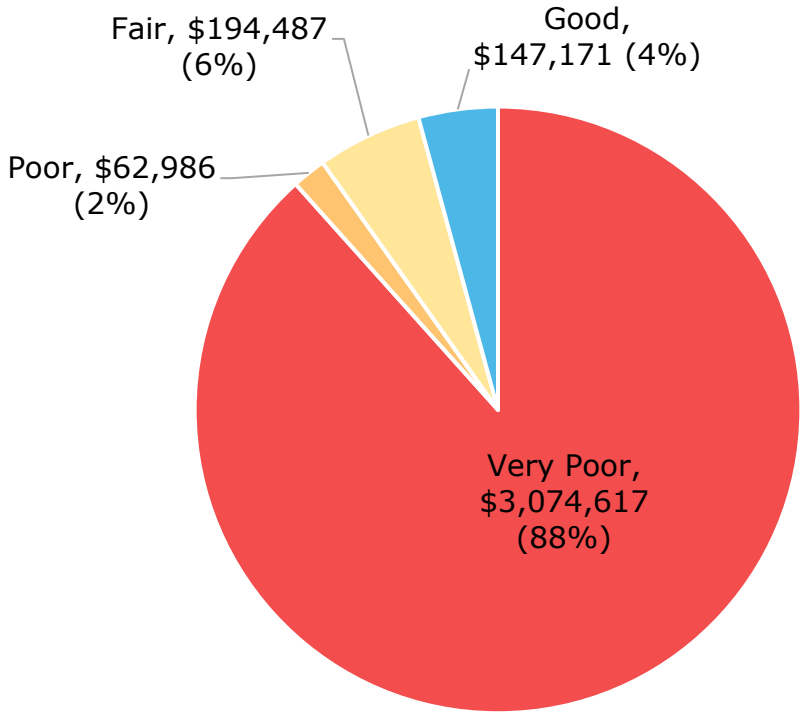


Figure 58 Asset Condition: Land Improvements Overall

Figure 59 summarizes the age-based condition of land improvements by each department. Most assets all assets are in poor or worse condition.

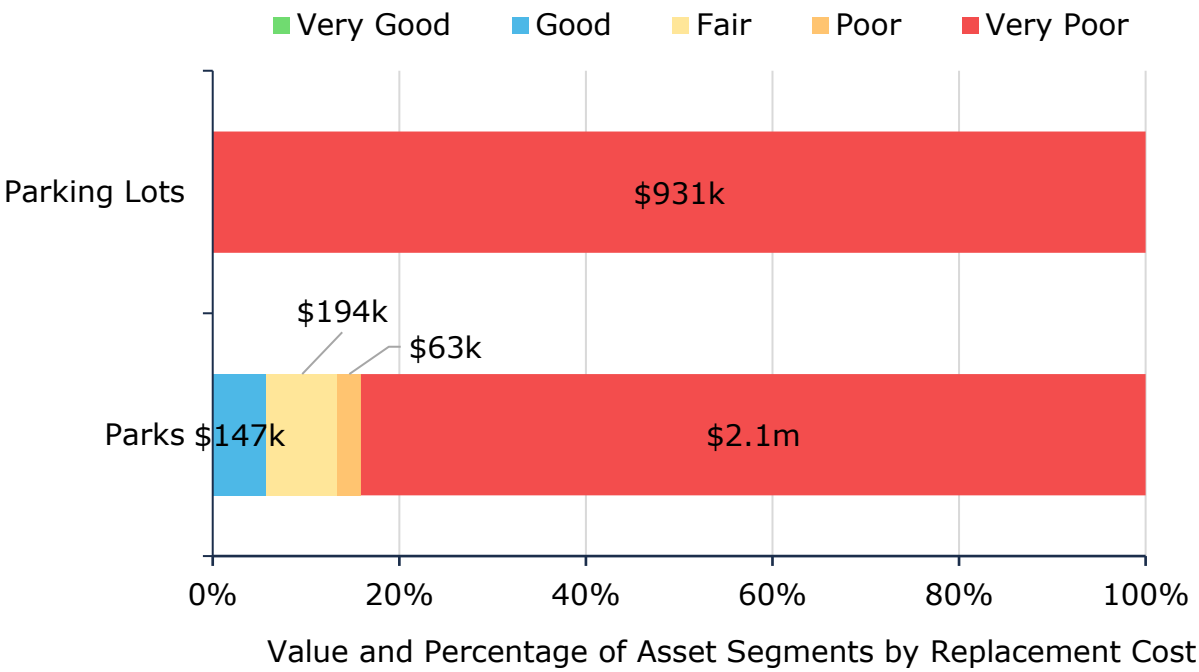


Figure 59 Asset Condition: Land Improvements by Segment

12.2.1 Current Approach to Condition Assessment

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

- Play structures undergo a comprehensive CSA inspection annually to ensure compliance with safety standards
- Visual inspections for play structures are carried out routinely
- The splash pad also receives regular visual inspections to ensure optimal functionality and safety
- Park shelters undergo weekly inspections to address any visible concerns related to safety and maintenance

12.3 Age Profile

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

age, their performance diminishes, often more rapidly as they approach the end of their design life.

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

Figure 60 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

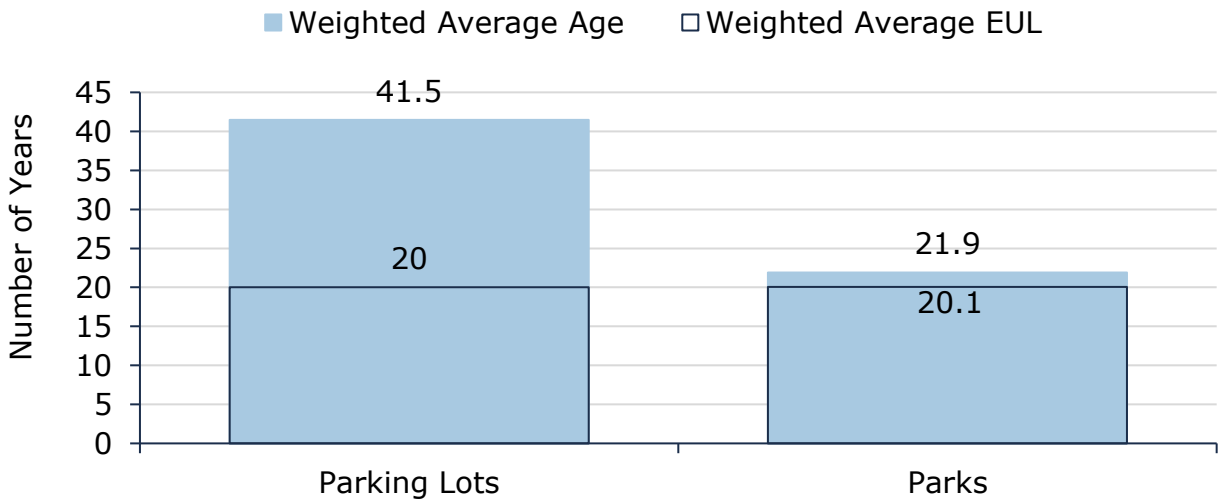


Figure 60 Estimated Useful Life vs. Asset Age: Land Improvements

12.4 Current Approach to Lifecycle Management

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

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

Activity Type	Description of Current Strategy
Maintenance & Rehabilitation	Sports fields, tennis courts, and splash pads receive an annual pressure wash and undergo a weekly routine involving the use of a blower

Activity Type	Description of Current Strategy
	Sports fields receive regular checks and leveling of the field, along with grass cutting before every summer game to uphold playing conditions and aesthetic standards
	Repairs to land improvement assets are conducted reactively, addressing specific issues as they arise
Replacement	The land improvements asset category includes several unique asset types and replacements are dealt with on a case-by-case basis

Table 50 Lifecycle Management Strategy: Land Improvements

12.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, department, and replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the Town may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

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

1 - 4 **Very Low**	5 - 7 **Low**	8 - 9 **Moderate**	10 - 14 **High**	15 - 25 **Very High**
- (0%)	$15,631 (<1%)	$201,948 (6%)	$304,041 (9%)	$2,957,641 (85%)

Figure 61 Risk Matrix: Land Improvements

12.6 Levels of Service

The table that follows summarizes the Town's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the Town has selected for this AMP.

12.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description, which may include maps, of the land improvements that the Municipality operates and maintains	Scope	Refer to section 12.1
Community	Describe criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 12.2 & 12.4
Technical	Average condition rating	Scope	Very Poor – 12

Table 51: Land Improvements – Current Levels of Service

12.6.2 Levels of Service – Proposed

The scenarios that were used to analyze Hawkesbury's inventory were run for 20-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

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

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

Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

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

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle **(Selected)**	$3,479,000	49%	$177,000
Scenario 2 - Current Capital Investment Rate		5%	$16,000
Scenario 3 - Maintain Condition 40%		47%	$183,000

Table 52: Land Improvements - Proposed Levels of Service Scenarios

12.6.3 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe (see 1.4).

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Parking Lots	-	-	-	-	-	-	-	-	-	-
Parks	-	-	$1.5m	-	$16k	$24k	$23k	-	$29k	-
Total	**-**	**-**	**$1.5m**	**-**	**$16k**	**$24k**	**$23k**	**-**	**$29k**	**-**

Table 53: Land Improvements - 10-Year Capital Forecast

Strategies

Growth

Financial Strategy

13. Growth

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

13.1 United Counties of Prescott and Russell Official Plan (September 2022)

The United Counties of Prescott and Russell is comprised of eight local municipalities which includes the Town of Hawkesbury. The Official Plan is a planning document for the purpose of guiding the future development of the Town of Hawkesbury. The Official Plan has been approved by the Ministry of Municipal Affairs and Housing as of September 2022.

The objective of the Official Plan is to offer guidance for growth, development, redevelopment, and conservation efforts in the United Counties. The plan establishes a policy framework for regulatory tools like zoning by-laws, community planning permits systems, plans of subdivision and consents, capital works programs, municipal budgets, and various municipal by-laws, ultimately aiming to enhance the livability and quality of the United Counties of Prescott and Russell.

The Settlement Area will be the focus of future urban habitat expansion within the Town, shaping urban density, growth, and functional diversity. There will be a focus on developing and intensifying the Town's existing land without necessitating the expansion of its Settlement Area, which will limit urban sprawl.

To illustrate historical growth rates, the following table shows population and housing figures from 1996 to 2021. The following table outlines the population and employment forecasts allocated to Hawkesbury.

Historical Figures	1996	2001	2006	2011	2016	2021
Population	10,162	10,319	10,869	10,551	10,263	10,194
Population Change	N/A	1.5%	5.3%	-2.9%	-2.7%	-0.7%
Private Dwellings	N/A	4,691	4,974	4,948	4,956	5,308

The population of Hawkesbury ranges from 10,162 in 1996 to 10,869 in 2006, and back down to 10,194 in 2021. Between the years of 2001 and 2006 there were significant increases in population. Since 2006, there has been a slight decrease of population until 2021. The district Official Plan has predicted slight increases of population, and recent census data for Hawkesbury indicates that the Town may not reach the future projected population.

13.2 Impact of Growth on Lifecycle Activities

As the municipality continues to evolve in the coming years, so will demand. Consequently, it is likely that funding will need to be reprioritized.

As growth-related assets are acquired, constructed, or retired, updated records should be integrated into the Town's asset register and asset management plan. Furthermore, the municipality should continue to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to achieve the municipality's proposed levels of service.

14. Financial Strategy

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 Hawkesbury 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/proposed service levels
    c. Requirements of contemplated changes in service
    d. Requirements of anticipated growth
2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Debt
    d. 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. Canada Community-Building Fund (CCBF)
    b. Annual grants

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

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

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

14.1 Annual Requirements & Capital Funding

14.1.1 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 $9.93 million annually to address capital requirements for the assets included in this AMP.

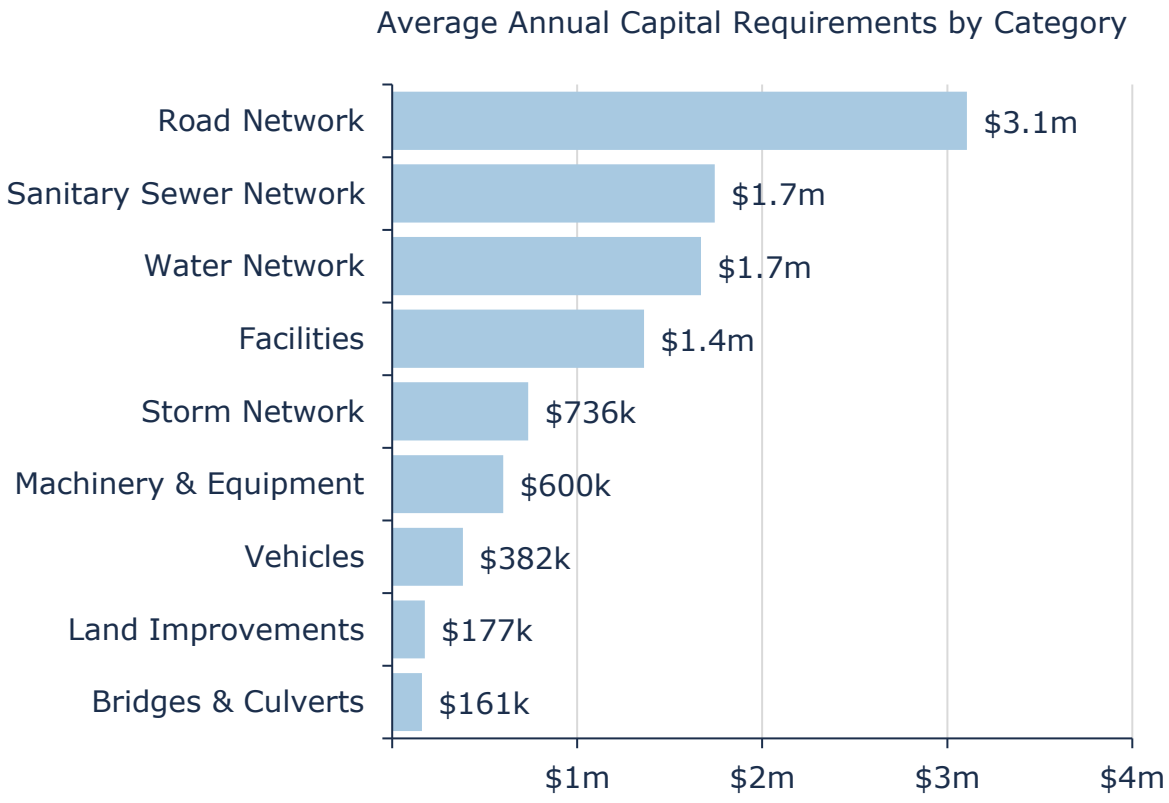


Figure 62 Annual Capital Funding Requirements by Asset Category

Where applicable, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of some of the main assets in these categories. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table compares the two different strategies:

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

The implementation of a proactive lifecycle strategy leads to potential annual cost avoidance and better overall performance. 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.

14.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Town is committing approximately $3.57 million towards capital projects per year. Given the annual capital requirement of $9.93 million, there is currently a funding gap of $6.36 million annually.

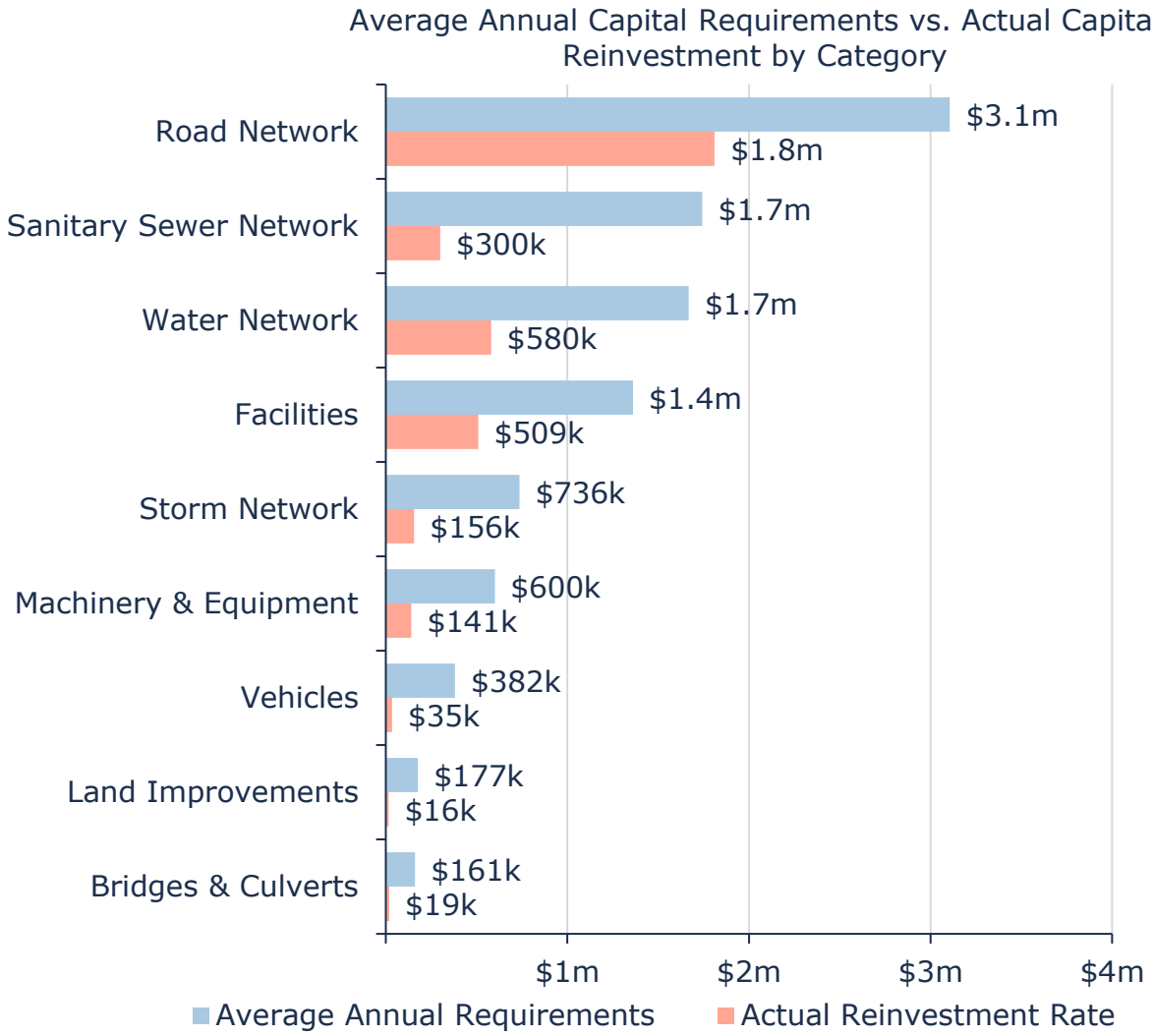


Figure 63 Annual Requirements vs. Capital Funding Available

14.2 Funding Objective

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

1. **Tax Funded Assets:** road network, bridges & culverts, storm network, facilities, vehicles, machinery & equipment, and land improvements

2. **Rate-Funded Assets:** water network, and sanitary sewer network

14.3 Financial Profile: Tax Funded Assets

14.3.1 Current Funding Position

The following tables show, by asset category, Hawkesbury'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 Require-ment	Annual Funding Available				Annual Deficit
		Taxes	Reserves [13]	Grants[14]	Total Available	
Bridges & Culverts	161,000	15,000	4,000	-	19,000	142,000
Facilities	1,361,000	123,000	386,000	-	509,000	852,000
Land Improvements	177,000	16,000	-	-	16,000	161,000
Machinery & Equipment	600,000	54,000	87,000	-	141,000	459,000
Road Network	3,107,000	281,000	21,000	1,509,000	1,811,000	1,296,000
Storm Network	736,000	67,000	89,000	-	156,000	580,000
Vehicles	382,000	35,000	-	-	35,000	347,000
Total	**6,524,000**	**591,000**	**587,000**	**1,509,000**	**2,687,000**	**3,837,000**

Table 54 Annual Available Funding for Tax Funded Assets

The average annual investment requirement for the above categories is approximately $6.52 million. Annual revenue currently allocated to these assets for capital purposes is approximately $2.69 million leaving an annual deficit of about $3.83 million. Put differently, these infrastructure categories are currently funded at 41.2% of their long-term requirements.

14.3.2 Full Funding Requirements

In 2024, Hawkesbury had annual tax revenues of $12.54 million. 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:

[13] 3-year rolling average of reserve contributions
[14] CCBF and OCIF

Asset Category	Tax Change Required for Full Funding
Bridges & Culverts	1.1%
Facilities	6.8%
Land Improvements	1.3%
Machinery & Equipment	3.7%
Road Network	10.3%
Storm Network	4.6%
Vehicles	2.8%
Total	**30.6%**

Table 55 Tax Increase Requirements for Full Funding

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:

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	3,837,000	3,837,000	3,837,000	3,837,000
Change in Debt Costs	339,000	39,000	39,000	39,000
Resulting Infrastructure Deficit:	**4,176,000**	**3,876,000**	**3,876,000**	**3,876,000**
Tax Increase Required	33.3%	30.9%	30.9%	30.9%
Annually:	**6.7%**	**3.1%**	**2.1%**	**1.5%**

Table 56 Tax Increase Options 5-20 Years

14.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 20-year option. This involves full funding being achieved over 20 years by:

- when realized, reallocating the debt cost reductions to the infrastructure deficit as outlined above
- increasing tax revenues by 1.5% each year for the next 20 years solely for the purpose of phasing in the proposed levels of service for asset categories covered in this section of the AMP
- adjusting tax revenue increases in future year(s) when allocations to capital expenditure exceed or fail to meet budgeted amounts

- allocating the current CCBF and OCIF revenue as outlined previously.
- reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
- there may be an opportunity to proactively address the Town's infrastructure deficit by determining whether implementing a dedicated stormwater charge is a viable, long-term solution to support critical infrastructure upgrades while also mitigating risk (flooding). As more municipalities across Ontario increasingly implement dedicated stormwater funding, it is recommended that Hawkesbury determines in the short term, if doing so would be beneficial.

Notes:

- 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[15].
- 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.
- The Town is in the process of transitioning its lifecycle strategies, specifically regarding its fleet assets. Hawkesbury is transitioning its light-duty vehicles to a leasing model managed by a third-party fleet provider. This new approach offers improved lifecycle planning, professional fleet oversight, and better resale outcomes. Under the new model, vehicles will typically be replaced every 3 to 5 years, allowing the Town to recoup more value at disposal and reduce long-term maintenance burdens. It is critical that when the Town's lifecycle management strategies have fully transitioned over to the new model,

[15] The Municipality 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.

that its asset register, and consequently, its asset management plan, be updated.

Although this option achieves full funding within 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 $46 million, for tax funded assets.[16]

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.

14.4 Financial Profile: Rate Funded Assets

14.4.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Rates	Grants	To Operations	Total Available	
Water Network	1,669,000	2,616,000	-	-2,036,000	580,000	1,089,000
Sanitary Sewer Network	1,743,000	2,755,000	-	-2,455,000	300,000	1,443,000
Total	**3,412,000**	**5,371,000**	**-**	**-4,491,000**	**880,000**	**2,532,000**

Table 57 Annual Available Funding for Rate Funded Assets

The average annual investment requirement for the above categories is $3.41 million. Annual revenue currently allocated to these assets for capital purposes is $880 thousand leaving an annual deficit of $2.53 million. Put differently, these infrastructure categories are currently funded at 25.8% of their long-term requirements.

[16] $37.9 of the $46 million identified as backlog, belongs to the road network. It is highly likely that this figure is overinflated – this is because the most recent road needs study was approximately 10 years ago. It is recommended that the Town conduct an external road assessment in the short term.

14.4.2 Full Funding Requirements

In 2024, the Hawkesbury had annual water and sanitary revenues of $2,616,000 and $2,755,000, respectively. As illustrated in the table below, without consideration of any other sources of revenue, full funding would require the following changes over time:

Asset Category	Rate Change Required for Full Funding
Water Network	41.6%
Sanitary Sewer Network	52.4%

Table 58 Rate Increase Requirements for Full Funding

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:

	Water Network			
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	1,089,000	1,089,000	1,089,000	1,089,000
Rate Increase Required	53.7%	51.2%	51.2%	51.2%
Annually:	**10.7%**	**5.1%**	**3.4%**	**2.6%**

Table 59 Water Rate Increase Options 5-20 Years

	Sanitary Sewer Network			
	5 Years	**10 Years**	**15 Years**	**20 Years**
Infrastructure Deficit	1,443,000	1,443,000	1,443,000	1,443,000
Rate Increase Required	46.5%	42.9%	42.9%	21.2%
Annually:	**9.3%**	**4.3%**	**2.9%**	**1.1%**

Table 60 Sanitary Rate Increase Options 5-20 Years

14.4.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 15-year option for both the water network and sanitary sewer network. This involves full funding being achieved over 15 years by:

- Annually increasing rate revenues by 3.4% for the water network and 2.9% for the sanitary sewer network for the next 15 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

- As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. This periodic funding should not be incorporated into an AMP unless there are firm commitments in place.
- We realize that raising rate revenues 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.
- Any increase in rates required for operations would be in addition to the above recommendations.

Although this option achieves full funding on an annual basis of 15 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 the pent-up investment demand of $6 million in backlog, for rate-funded assets.

14.5 Use of Debt

The following tables outline how Hawkesbury has historically used debt for investing in the asset categories as listed. There is currently $14.1 million of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $986,000 (2024), well within its provincially prescribed maximum of $3,726,959.

Asset Category	Current Debt Outstanding (2024)	Use of Debt in the Last Five Years				
		2019	2020	2021	2022	2023
Bridges & Culverts	98,000	-	-	-	-	-
Facilities	3,405,000	228,000				2,500,000
Land Improvements	98,000	-	-	-	-	-
Machinery & Equipment	104,000	-	-	-	-	-
Road Network	9,805,000	228,000				
Storm Network	260,000	-	-	-	-	-
Vehicles	98,000	-	-	-	-	-
Total Tax Funded	**13,868,000**	**456,000**	**-**	**-**	**-**	**2,500,000**
Water Network	5,953,000	-	-	-	-	-
Sanitary Sewer Network	8,318,000	-	-	-	-	-
Total Rate Funded	**14,271,000**	**-**	**-**	**-**	**-**	**-**

Table 61: Current Debt Overview

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2025	2026	2027	2028	2029	2030	2035
Bridges & Culverts	14,000	14,000	14,000	14,000	14,000	-	-
Facilities	321,000	298,000	298,000	298,000	298,000	298,000	175,000
Land Improvements	14,000	14,000	14,000	14,000	14,000	-	-
Machinery & Equipment	17,000	17,000	14,000	14,000	14,000	-	-
Road Network	205,000	693,000	665,000	665,000	665,000	665,000	488,000
Storm Network	39,000	39,000	39,000	39,000	39,000	-	-
Vehicles	14,000	14,000	14,000	14,000	14,000	-	-
Total Tax Funded	**624,000**	**1,089,000**	**1,058,000**	**1,058,000**	**1,058,000**	**963,000**	**663,000**
Water Network	65,000	380,000	380,000	380,000	380,000	380,000	316,000
Sanitary Sewer Network	858,000	858,000	695,000	695,000	695,000	695,000	596,000
Total Rate Funded	**923,000**	**1,238,000**	**1,075,000**	**1,075,000**	**1,075,000**	**1,075,000**	**912,000**

Table 62: Principal Interest

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

14.6 Use of Reserves

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 Hawkesbury:

Asset Category	Current Reserve Balances
Bridges & Culverts	-
Facilities	730,000
Land Improvements	48,000
Machinery & Equipment	1,297,000
Road Network	470,000
Storm Network	-
Vehicles	-
Total Tax Funded:	**2,545,000**
Water Network	2,935,000
Sanitary Sewer Network	607,000
Total Rate Funded:	**3,542,000**

Table 63: Use of Reserves

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:

- breadth of services provided
- age and condition of infrastructure
- use and level of debt
- economic conditions and outlook
- internal reserve and debt policies

These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with Hawkesbury'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.

Appendices

Appendix A – Infrastructure Report Card

Appendix B – Level of Service Maps

Appendix C – Condition Assessment Guidelines

Appendix D – Public Engagement Questionnaire

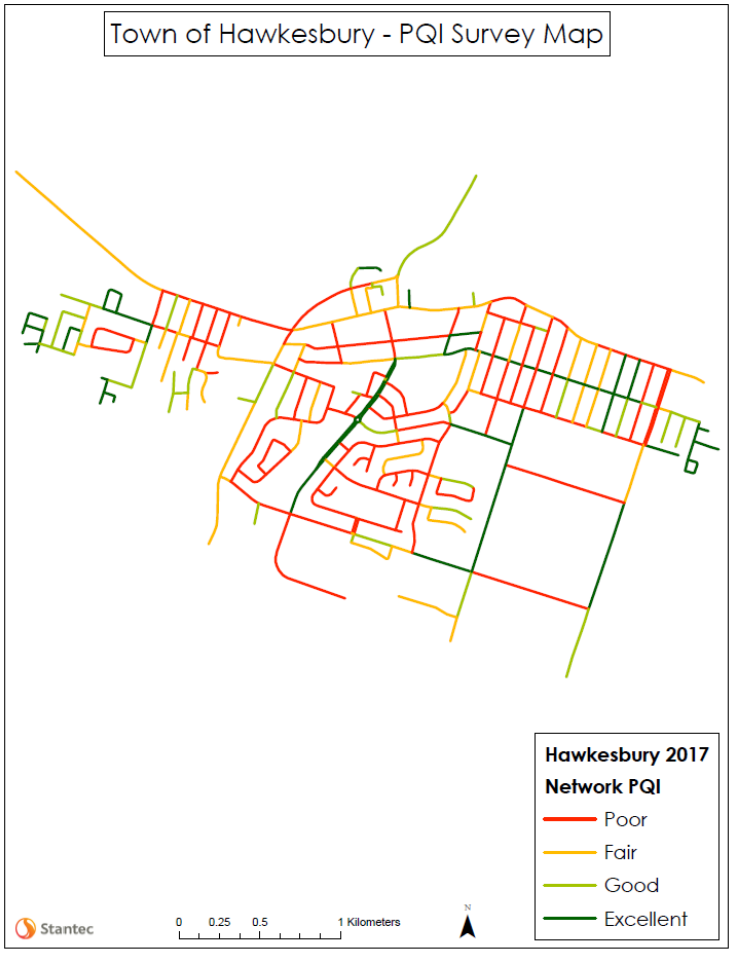
Appendix A – Infrastructure Report Card

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Road Network	**$ 113.5m**	**Poor**	Annual Requirement:	$3,107,000
			Funding Available:	$1,811,000
			Annual Deficit:	**$1,296,000**
Bridges & Culverts	**$ 8.3m**	**Good**	Annual Requirement:	$161,000
			Funding Available:	$19,000
			Annual Deficit:	**$142,000**
Water Network	**$ 101.2m**	**Good**	Annual Requirement:	$1,669,000
			Funding Available:	$580,000
			Annual Deficit:	**$1,089,000**
Sanitary Sewer Network	**$ 93.2m**	**Good**	Annual Requirement:	$1,743,000
			Funding Available:	$300,000
			Annual Deficit:	**$1,443,000**
Storm Network	**$ 44.1m**	**Fair**	Annual Requirement:	$736,000
			Funding Available:	$156,000
			Annual Deficit:	**$580,000**
Facilities	**$ 57.3m**	**Poor**	Annual Requirement:	$1,361,000
			Funding Available:	$509,000
			Annual Deficit:	**$852,000**
Vehicles	**$ 6.1m**	**Good**	Annual Requirement:	$382,000
			Funding Available:	$35,000
			Annual Deficit:	**$347,000**
Machinery & Equipment	**$ 7.3m**	**Poor**	Annual Requirement:	$600,000
			Funding Available:	$141,000
			Annual Deficit:	**$459,000**

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Land Improvements	**$ 3.5m**	**Very Poor**	Annual Requirement:	$177,000
			Funding Available:	$16,000
			Annual Deficit:	**$161,000**

Appendix B – Level of Service Maps & Photos

Road Network Map[17]



[17] The map above is from the Town's road needs study (RNS), which was conducted in 2017. It displays all roads which are managed and owned by the Town.

Road Network Classification

The following table summarizes the roads which are owned and managed by the Town of Hawkesbury.

Asset ID	Profile	Name	In-Service Date	Unit of Measure	Quantity
427	Local Roads	Abbott Street	1/1/1962	Length (m)	246
424	Local Roads	Abbott Street	1/1/1968	Length (m)	259
445	Local Roads	Aberdeen Street	1/1/1997	Length (m)	89
433	Local Roads	Aberdeen Street	1/1/1965	Length (m)	175
442	Local Roads	Aberdeen Street	1/1/1997	Length (m)	180
430	Local Roads	Aberdeen Street	1/1/1965	Length (m)	186
436	Local Roads	Aberdeen Street	1/1/1997	Length (m)	209
439	Local Roads	Aberdeen Street	1/1/1997	Length (m)	298
452	Local Roads	Albert Street	1/1/1985	Length (m)	299
455	Local Roads	Albert Street	1/1/1977	Length (m)	386
458	Local Roads	Alexander Siversky Street	1/1/2001	Length (m)	387
461	Local Roads	Allan Street	1/1/1968	Length (m)	183
464	Local Roads	Andr? Street	1/1/2002	Length (m)	118
467	Local Roads	Atlantic Street	1/1/1992	Length (m)	153
471	Local Roads	Belle Rive Street	1/1/2001	Length (m)	385
474	Local Roads	Bertha Street	1/1/1965	Length (m)	226
477	Local Roads	Bertha Street	1/1/1965	Length (m)	247
480	Local Roads	Berthiaume Street	1/1/1988	Length (m)	389
487	Collector Roads	Bon Pasteur Street	12/31/2007	Length (m)	256
504	Collector Roads	Cameron Street	1/1/1976	Length (m)	153
494	Collector Roads	Cameron Street	1/1/1963	Length (m)	249
502	Collector Roads	Cameron Street	1/1/1970	Length (m)	297
1993	Collector Roads	Cameron Street	12/31/2021	Length (m)	364
1850	Collector Roads	Cameron Street	12/31/2016	Length (m)	373
1617	Collector Roads	CAMERON STREET	11/2/2012	Length (m)	689
1812	Collector Roads	Cameron Street	1/1/2015	Length (m)	695
1774	Collector Roads	Cartier Blvd	1/1/2015	Length (m)	87

1775	Collector Roads	Cartier Blvd	1/1/2015	Length (m)	93
1776	Collector Roads	Cartier Blvd	1/1/2015	Length (m)	110
1778	Collector Roads	Cartier Blvd	1/1/2015	Length (m)	135
1777	Collector Roads	Cartier Blvd	1/1/2015	Length (m)	177
1779	Collector Roads	Cartier Blvd	1/1/2015	Length (m)	408
537	Local Roads	Catherine Street	1/1/1963	Length (m)	244
540	Local Roads	Catherine Street	1/1/1965	Length (m)	246
543	Collector Roads	Cecile Blvd	1/1/1968	Length (m)	210
1780	Local Roads	Cecile Blvd	1/1/2015	Length (m)	262
1865	Local Roads	Cecile Blvd	12/31/2016	Length (m)	398
556	Local Roads	Chamberlain Street	1/1/2006	Length (m)	247
553	Local Roads	Chamberlain Street	1/1/2006	Length (m)	251
563	Local Roads	Champlain Street	1/1/1968	Length (m)	246
559	Local Roads	Champlain Street	1/1/1968	Length (m)	304
566	Local Roads	Charlebois Street	1/1/1996	Length (m)	226
569	Local Roads	Charles Emile Street	1/1/1980	Length (m)	95
572	Local Roads	Chartrand Street	1/1/1993	Length (m)	88
575	Local Roads	Chartrand Street	1/1/1996	Length (m)	232
578	Arterial Roads	Chenail Blvd	1/1/1998	Length (m)	758
582	Local Roads	Christine Street	1/1/1996	Length (m)	199
585	Local Roads	Church Street	1/1/1951	Length (m)	58
588	Local Roads	Clement Street	1/1/2001	Length (m)	130
592	Local Roads	Desjardins Street	1/1/1994	Length (m)	197
595	Local Roads	Dollard Stret	1/1/1960	Length (m)	78
601	Local Roads	Dufferin Street	1/1/1996	Length (m)	244
598	Local Roads	Dufferin Street	1/1/1996	Length (m)	257
604	Local Roads	Duplate Street	1/1/1977	Length (m)	196
610	Local Roads	Edmond Street	1/1/1995	Length (m)	72
607	Local Roads	Edmond Street	1/1/2005	Length (m)	75
622	Local Roads	Edmond Street	1/1/1992	Length (m)	115
613	Local Roads	Edmond Street	1/1/1977	Length (m)	130
619	Local Roads	Edmond Street	1/1/1977	Length (m)	190
625	Local Roads	Edmond Street	1/1/1996	Length (m)	195
616	Local Roads	Edmond Street	1/1/1977	Length (m)	214

628	Local Roads	Emerald Street	1/1/1974	Length (m)	275
637	Local Roads	Garneau Street	1/1/2001	Length (m)	80
634	Local Roads	Garneau Street	1/1/1983	Length (m)	83
631	Local Roads	Garneau Street	1/1/1967	Length (m)	180
640	Local Roads	Gascon Street	1/1/1979	Length (m)	257
643	Local Roads	Genevieve Street	1/1/1981	Length (m)	218
646	Local Roads	Gerard Street	1/1/1980	Length (m)	197
658	Local Roads	Ghislain Street	1/1/1977	Length (m)	277
655	Local Roads	Ghislain Street	1/1/1977	Length (m)	383
649	Local Roads	Ghislain Street	1/1/1977	Length (m)	406
652	Local Roads	Ghislain Street	1/1/1977	Length (m)	489
664	Local Roads	Gladstone Street	1/1/1969	Length (m)	246
661	Local Roads	Gladstone Street	1/1/1969	Length (m)	250
667	Local Roads	Gordon Street	1/1/1994	Length (m)	256
673	Local Roads	Hamilton Street	1/1/1997	Length (m)	115
670	Local Roads	Hamilton Street	1/1/1997	Length (m)	200
677	Local Roads	Hampden Street	1/1/1961	Length (m)	178
684	Collector Roads	Higginson Street	1/1/1968	Length (m)	167
691	Collector Roads	Higginson Street	1/1/1989	Length (m)	267
687	Collector Roads	Higginson Street	1/1/1996	Length (m)	332
695	Local Roads	Industrial Blvd	1/1/1970	Length (m)	818
700	Local Roads	Jacynthe Street	1/1/2002	Length (m)	52
697	Local Roads	Jacynthe Street	1/1/2002	Length (m)	198
703	Local Roads	James Street	1/1/1981	Length (m)	261
707	Local Roads	James Street	1/1/1970	Length (m)	302
710	Local Roads	James Street	1/1/1974	Length (m)	700
713	Local Roads	Jerome Street	1/1/1980	Length (m)	151
716	Arterial Roads	John Street	1/1/2005	Length (m)	200
720	Arterial Roads	John Street	1/1/1998	Length (m)	618
727	Local Roads	Kipling Street	1/1/1973	Length (m)	148
723	Local Roads	Kipling Street	1/1/1968	Length (m)	221
730	Local Roads	Kitchener Street	1/1/1965	Length (m)	221
733	Local Roads	Kitchener Street	1/1/2002	Length (m)	314
740	Local Roads	Lafleche Street	1/1/1983	Length (m)	238
743	Local Roads	Lafleche Street	1/1/1983	Length (m)	262

737	Local Roads	Lafleche Street	1/1/1994	Length (m)	370
746	Local Roads	Lafrance Street	1/1/2007	Length (m)	93
1853	Collector Roads	Lansdowne Street	12/31/2016	Length (m)	94
764	Local Roads	Lansdowne Street	1/1/1994	Length (m)	250
1847	Collector Roads	Lansdowne Street	12/31/2016	Length (m)	297
1843	Collector Roads	Lansdowne Street	12/31/2016	Length (m)	303
1857	Collector Roads	Lansdowne Street	12/31/2016	Length (m)	477
775	Local Roads	Laurier Street	1/1/1968	Length (m)	238
772	Local Roads	Laurier Street	1/1/1968	Length (m)	247
768	Local Roads	Laurier Street	1/1/1968	Length (m)	361
778	Local Roads	Laurin Street	1/1/1985	Length (m)	85
781	Arterial Roads	Main Street East	1/1/1968	Length (m)	228
790	Arterial Roads	Main Street East	1/1/1997	Length (m)	437
793	Arterial Roads	Main Street East	1/1/1968	Length (m)	465
783	Arterial Roads	Main Street East	1/1/1987	Length (m)	466
787	Arterial Roads	Main Street East	1/1/1987	Length (m)	505
796	Arterial Roads	Main Street East	1/1/2005	Length (m)	585
799	Arterial Roads	Main Street West	1/1/1997	Length (m)	414
802	Arterial Roads	Main Street West	1/1/1997	Length (m)	438
806	Arterial Roads	Main Street West	1/1/1968	Length (m)	833
808	Local Roads	Mario Street	1/1/2002	Length (m)	219
815	Local Roads	Mary Street	1/1/1962	Length (m)	246
811	Local Roads	Mary Street	1/1/1961	Length (m)	268
1709	Arterial Roads	McGill CONNECTING LINK	7/2/2014	Length (m)	900
818	Arterial Roads	McGill Street	1/1/2005	Length (m)	241
826	Arterial Roads	McGill Street	1/1/2005	Length (m)	604
822	Arterial Roads	McGill Street	1/1/2005	Length (m)	772
829	Local Roads	Mill Entrance	1/1/1968	Length (m)	108
832	Local Roads	Montcalme Street	1/1/1963	Length (m)	151

842	Collector Roads	Nelson Street East	1/1/1977	Length (m)	134
835	Local Roads	Nelson Street East	1/1/1967	Length (m)	136
838	Local Roads	Nelson Street East	1/1/1977	Length (m)	314
852	Collector Roads	Nelson Street West	1/1/2002	Length (m)	255
849	Collector Roads	Nelson Street West	1/1/2007	Length (m)	404
845	Collector Roads	Nelson Street West	1/1/1982	Length (m)	411
855	Local Roads	Omer Street	1/1/1980	Length (m)	396
858	Local Roads	Paquette Street	12/31/2007	Length (m)	109
861	Local Roads	Parisien Street	1/1/1980	Length (m)	403
864	Local Roads	Paul Crescent	1/1/2001	Length (m)	351
867	Local Roads	Pilon Street	1/1/1996	Length (m)	379
870	Local Roads	Poplar Street	1/1/1957	Length (m)	92
874	Local Roads	Portelance Street	1/1/1976	Length (m)	640
881	Local Roads	Prospect Street	1/1/1997	Length (m)	177
877	Local Roads	Prospect Street	1/1/1997	Length (m)	221
885	Local Roads	Race Street	1/1/1990	Length (m)	150
889	Collector Roads	Regent Street	1/1/1968	Length (m)	277
895	Collector Roads	Regent Street	1/1/1978	Length (m)	339
898	Local Roads	Rejane Street	1/1/1980	Length (m)	434
1531	Local Roads	Richer Street	9/1/2009	Length (m)	153
904	Local Roads	Riordon Street	1/1/1956	Length (m)	137
907	Local Roads	Roch Street	1/1/1996	Length (m)	147
910	Local Roads	Roch Street	1/1/2001	Length (m)	175
913	Local Roads	Roxanne Street	1/1/2007	Length (m)	81
919	Local Roads	Royal Avenue	1/1/2007	Length (m)	125
916	Local Roads	Royal Avenue	1/1/1993	Length (m)	281
922	Local Roads	Rupert Street	1/1/2006	Length (m)	154
929	Local Roads	Salisbury Street	1/1/2002	Length (m)	107
925	Local Roads	Salisbury Street	1/1/2002	Length (m)	221
932	Local Roads	Seguin Street	1/1/1980	Length (m)	166
935	Local Roads	Sidney Street	1/1/1992	Length (m)	328
938	Local Roads	Sinclair Street	1/1/1965	Length (m)	179
941	Local Roads	Sinclair Street	1/1/1965	Length (m)	214
949	Local Roads	Smerdon Street	1/1/1968	Length (m)	102
945	Local Roads	Smerdon Street	1/1/1995	Length (m)	178
958	Collector Roads	Spence Avenue	1/1/1968	Length (m)	378
955	Collector Roads	Spence Avenue	1/1/1968	Length (m)	400

952	Collector Roads	Spence Avenue	1/1/1968	Length (m)	498
964	Collector Roads	Spence Avenue	1/1/1977	Length (m)	759
966	Collector Roads	Stanley Street	1/1/2002	Length (m)	184
970	Local Roads	Stanley Street	12/31/2007	Length (m)	308
976	Local Roads	Stevens Street	1/1/1985	Length (m)	80
979	Local Roads	Stevens Street	1/1/1992	Length (m)	261
982	Local Roads	Tach? Blvd	1/1/1976	Length (m)	393
987	Local Roads	Tessier Street	1/1/1986	Length (m)	350
985	Local Roads	Tessier Street	1/1/1978	Length (m)	420
989	Local Roads	Theriault Street	1/1/1980	Length (m)	120
995	Local Roads	Theriault Street	1/1/1969	Length (m)	194
992	Local Roads	Theriault Street	1/1/1969	Length (m)	247
1002	Local Roads	Thorne Street	1/1/2003	Length (m)	96
998	Local Roads	Thorne Street	1/1/2002	Length (m)	120
1809	Collector Roads	Tupper Street	1/1/2015	Length (m)	260
1018	Collector Roads	Tupper Street	1/1/2007	Length (m)	443
1010	Collector Roads	Tupper Street	1/1/1988	Length (m)	494
1006	Collector Roads	Tupper Street	1/1/1988	Length (m)	496
1808	Collector Roads	Tupper Street	1/1/2015	Length (m)	656
1023	Local Roads	Wellesly Street	1/1/2005	Length (m)	246
1020	Local Roads	Wellesly Street	1/1/2005	Length (m)	253
1035	Local Roads	West Street	1/1/2006	Length (m)	104
1532	Local Roads	West Street	9/1/2009	Length (m)	116
1533	Local Roads	West Street	9/1/2009	Length (m)	284
1040	Collector Roads	William Street	1/1/1981	Length (m)	111
1037	Collector Roads	William Street	1/1/1968	Length (m)	253
1043	Local Roads	Wolfe Street	1/1/1960	Length (m)	144

Description or images that illustrate the different levels of road class pavement condition

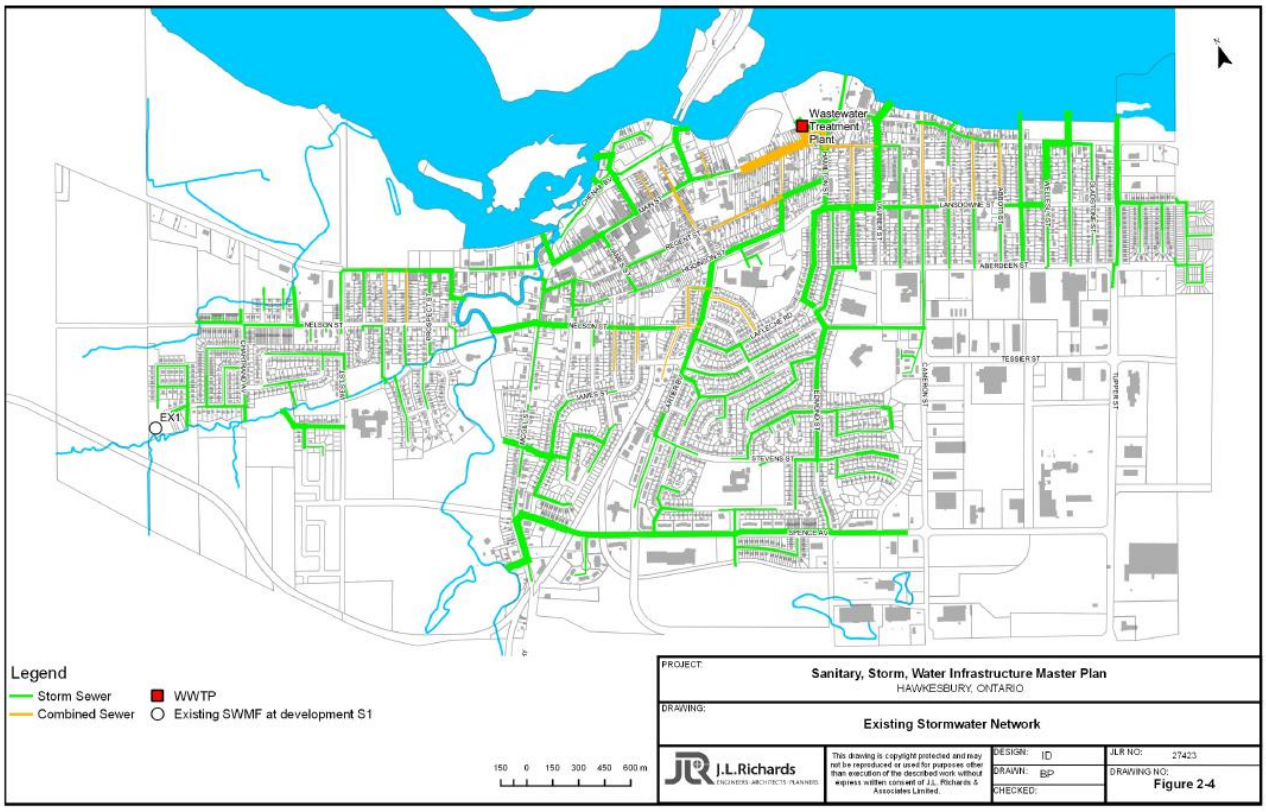
PQI= 80-100 (Excellent)
No distresses
Good ride quality

PQI = 60-80 (GOOD)
Localized slight/moderate linear cracks
Little to no alligator cracking present
No rutting or distortions
Fair to good ride quality

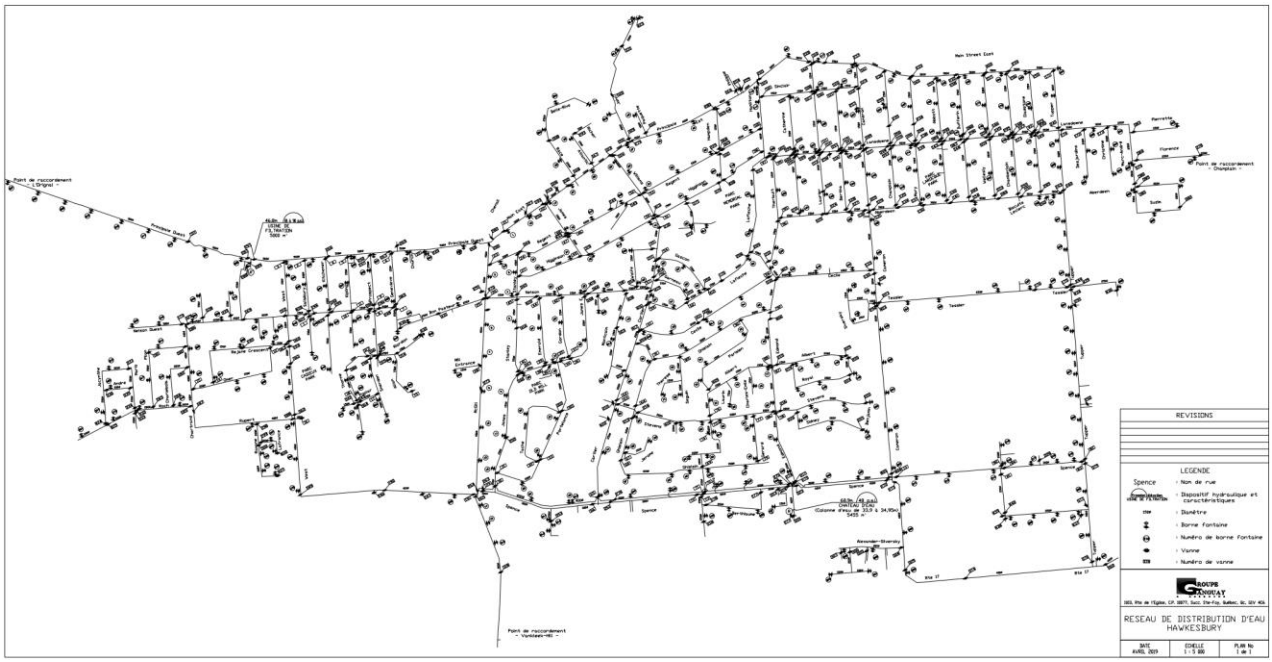
PQI=40-60 (FAIR)
Extensive slight/moderate linear cracks
Localized alligator/edge cracking
Fair ride quality

PQI=0 - 40 (POOR)
Extensive moderate to severe cracking
Extensive Alligator or Edge Cracking
Potholes or poor patches
Poor ride quality

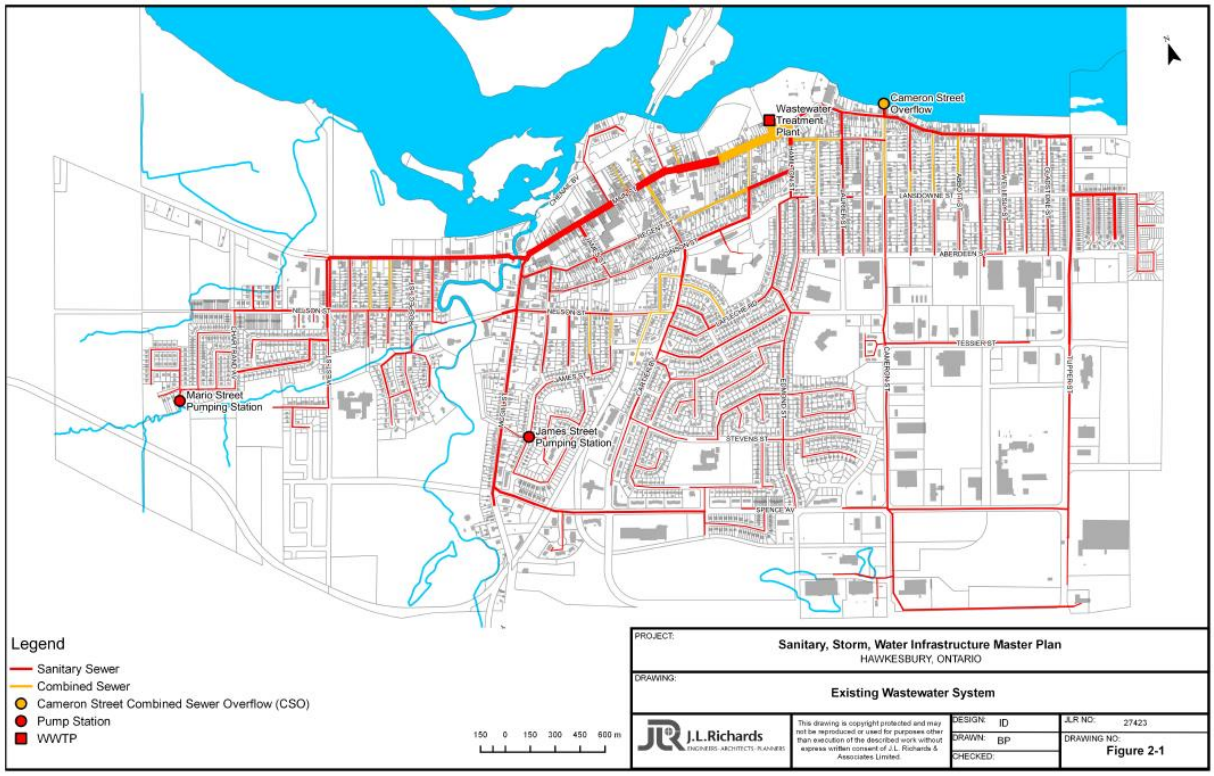
Storm Network Map



Water Network Map



Sanitary Sewer Network Map



Appendix C – Condition Assessment Guidelines

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

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the 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.

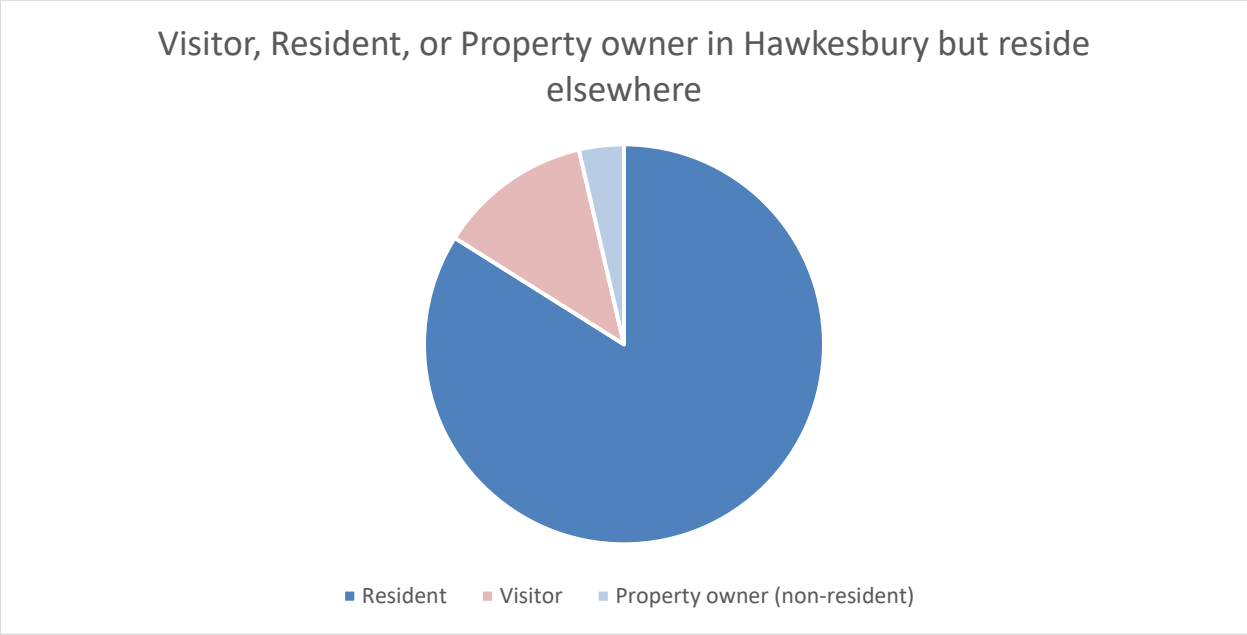
Developing a Condition Assessment Schedule

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:

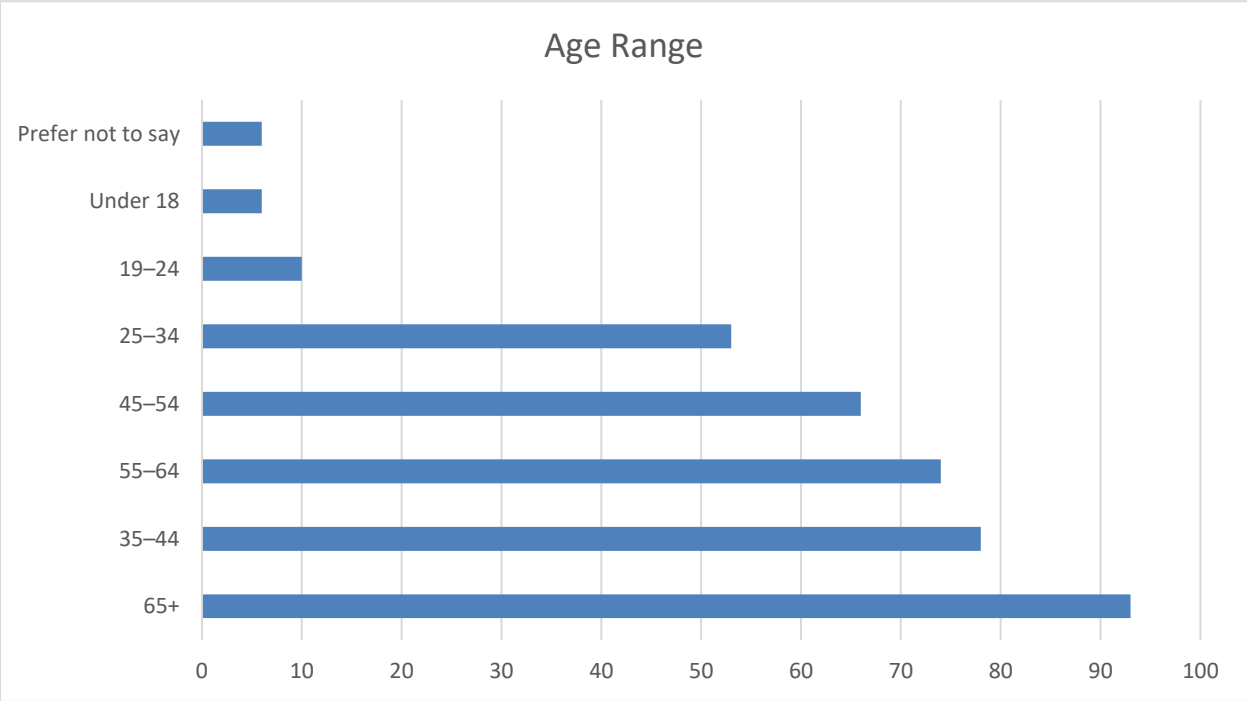
1. **Relevance**: every data item must have a direct influence on the output that is required
2. **Appropriateness**: the volume of data and the frequency of updating should align with the stage in the assets life and the service being provided
3. **Reliability**: the data should be sufficiently accurate,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

Appendix D – Public Engagement Questionnaire

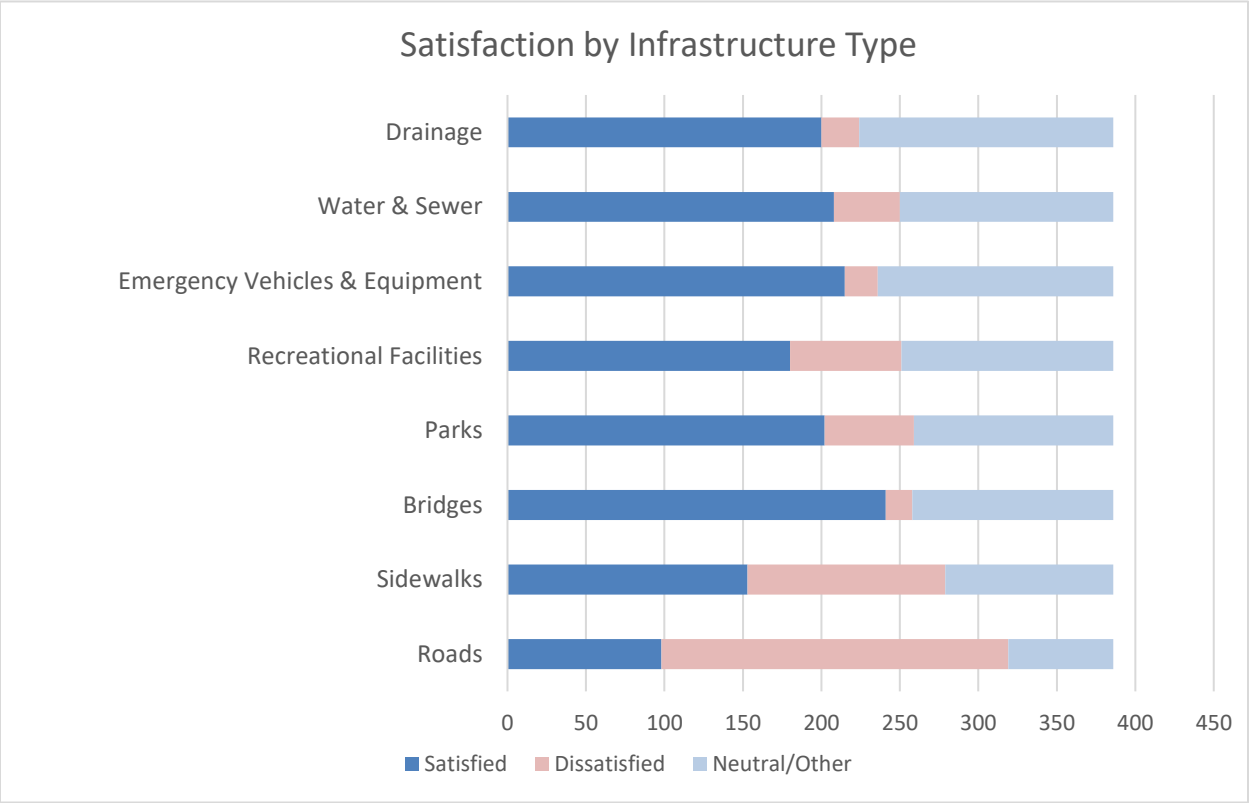
i. Are you a full-time resident of Hawkesbury or do you own property and reside elsewhere?



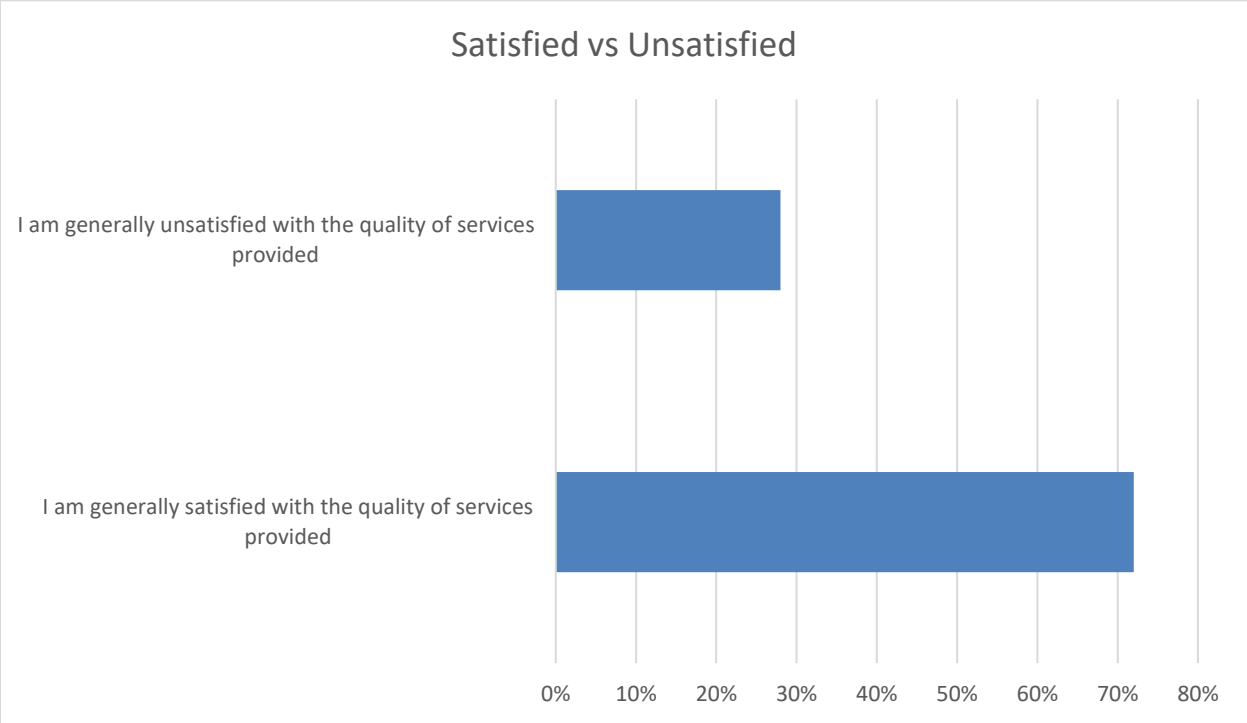
ii. Please select your age range:



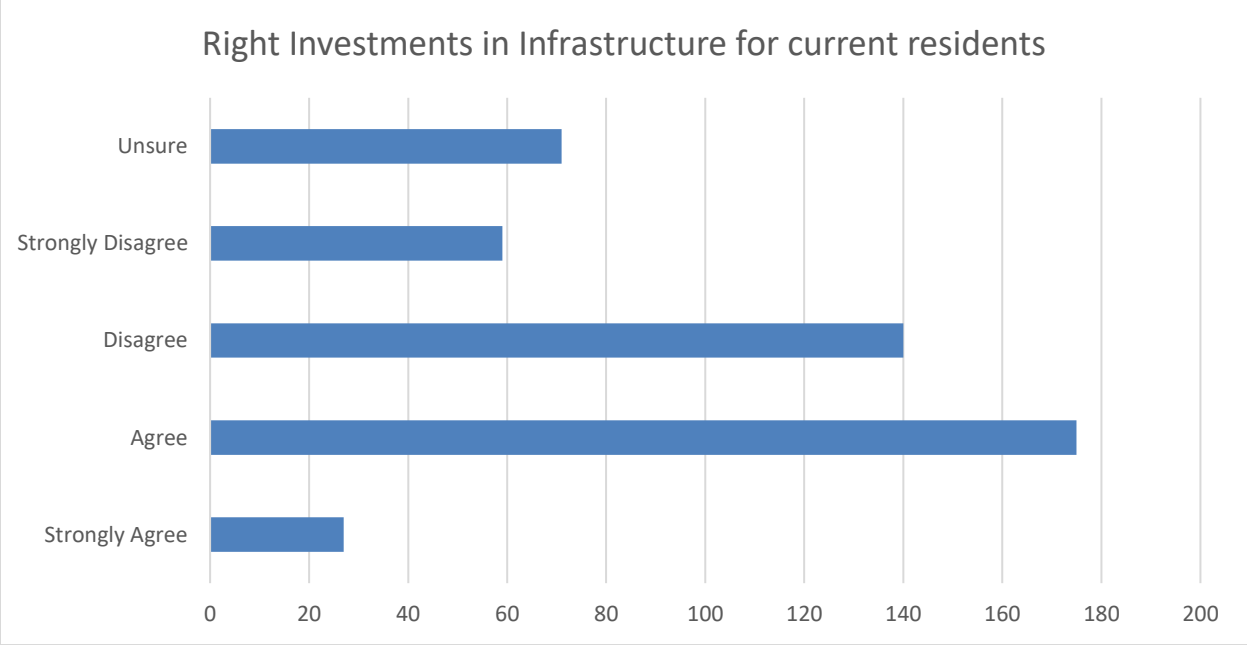
iii. How would you describe your experience with different infrastructure?



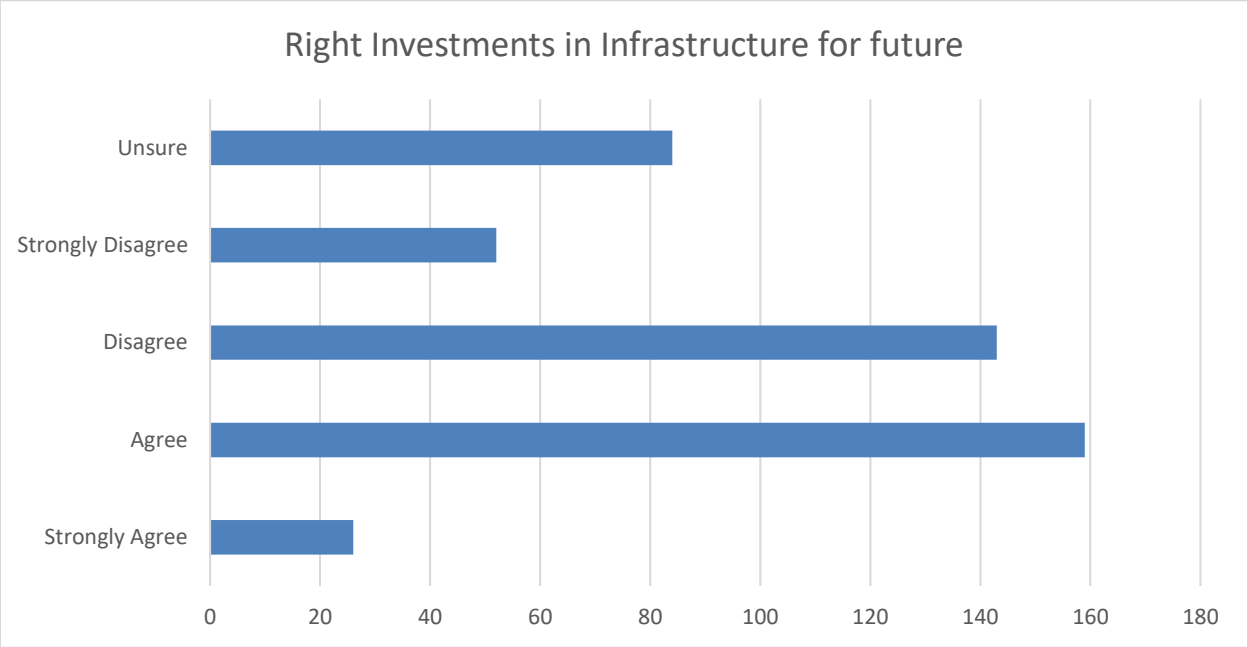
iv. Which of the following statements best describes your daily experiences with different infrastructure services such as roads, sidewalks, parks, recreational centers, water services, etc.?



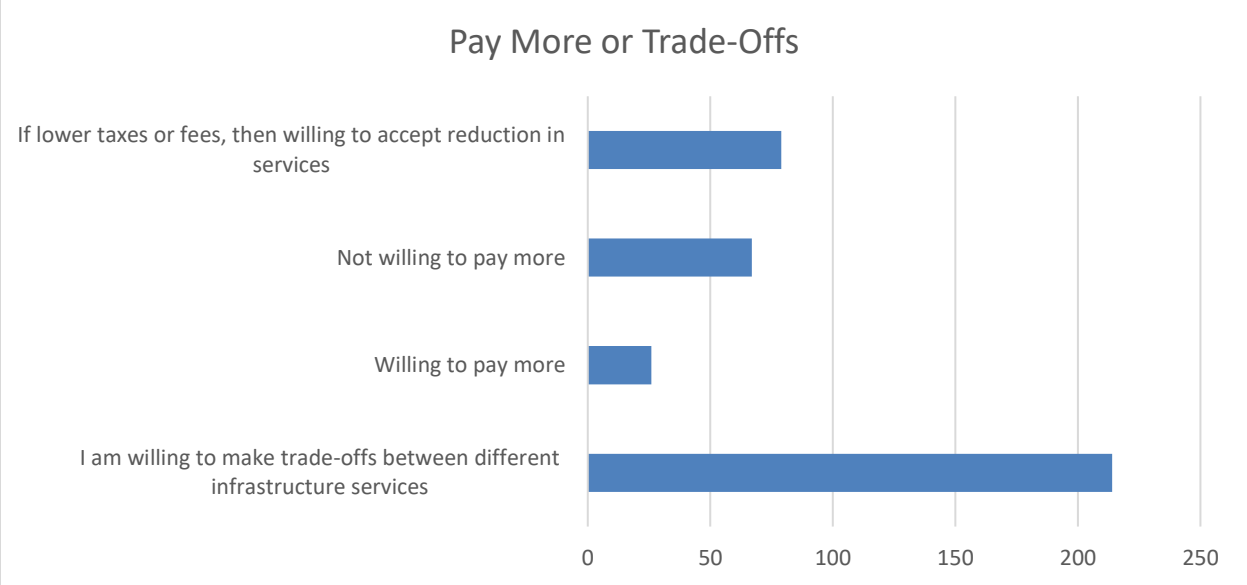
v. In my opinion, Hawkesbury is making the right investments in infrastructure for its current residents.



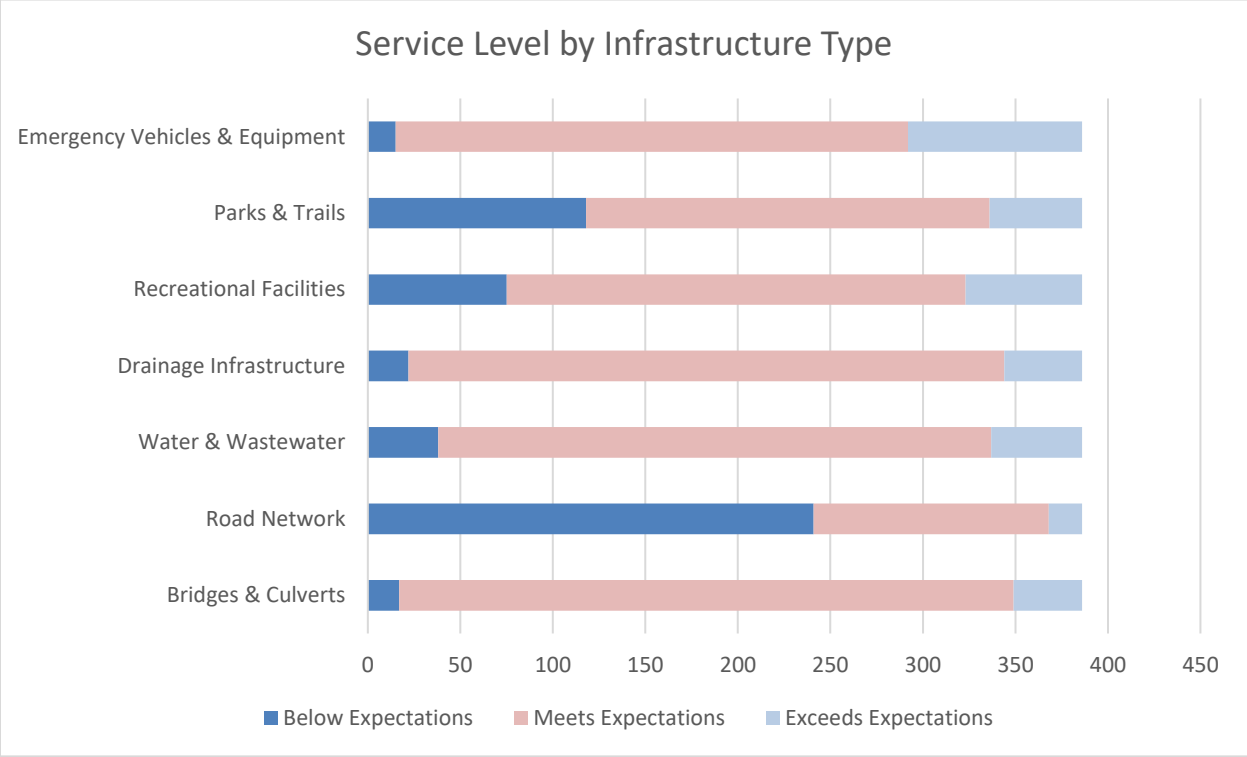
vi. In my opinion, Hawkesbury is making the right investments in infrastructure for its future.



vii. Since funds are limited, it is often necessary to make trade-offs between different infrastructure services and programs. This could mean reducing spending on some services while increasing expenditures.



viii. In your opinion, are service levels provided by each of the following assets exceeding expectations, meeting expectations, or below expectations:



ix. Which infrastructure services do you value the most? Please rank in order of importance.