Asset Management Plan

Town of Smiths Falls

2024

This Asset Management Plan was prepared by:

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

Key Statistics[1]

Replacement cost of asset portfolio
$370.0 million

Replacement cost of infrastructure per household
$82,000 (2021)

Percentage of assets in fair or better condition
77%

Percentage of assets with assessed condition data
86%

Annual capital infrastructure deficit
TBD

Recommended timeframe for eliminating annual infrastructure deficit
TBD

Target reinvestment rate
2.7%

Actual reinvestment rate
TBD

[1] As per O. Reg. 588/17, Smiths Falls will be completing a 10-year financial strategy for its asset portfolio by July 1, 2025.

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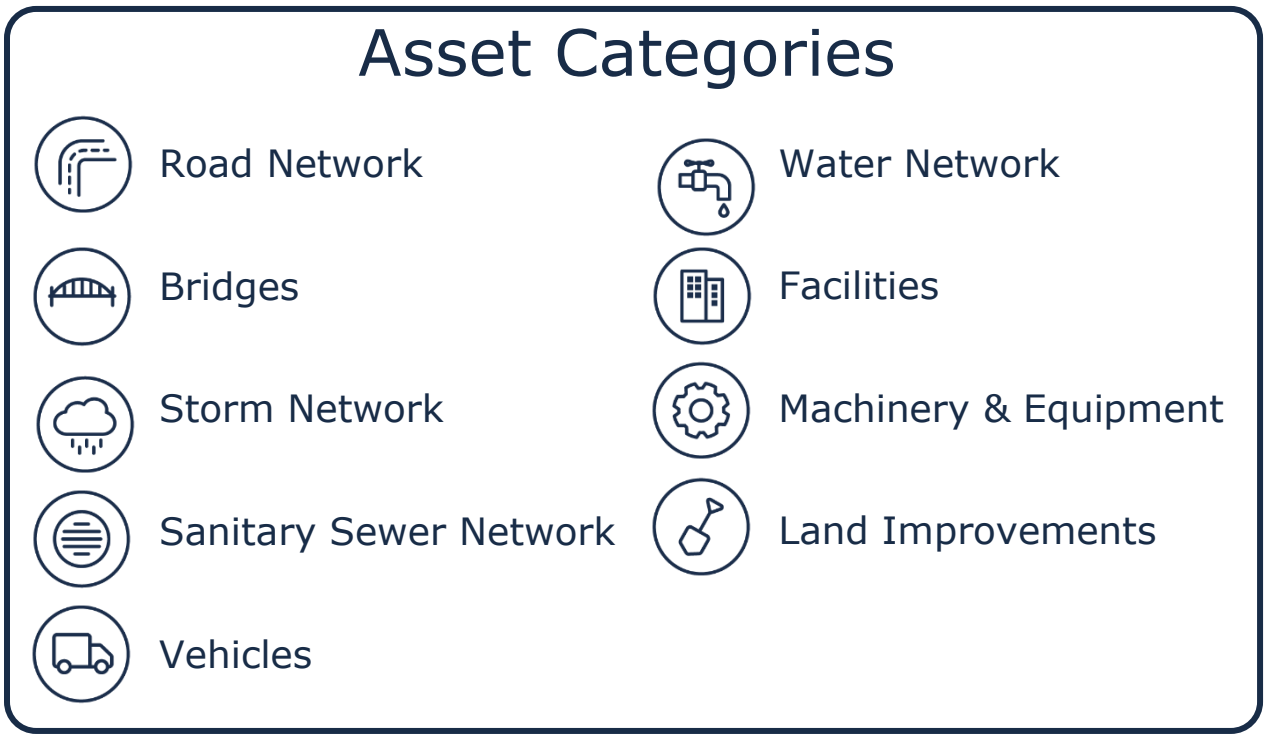
Executive Summary

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

Scope

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

This AMP include the following asset categories:



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

Findings

The overall replacement cost of the asset categories included in this AMP totals $370.0 million. 77% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 86% of assets. For the remaining 14% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP. The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (paved roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, Smiths Falls' average annual capital requirement totals $10.0 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 of Smiths Falls. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources.

Recommendations

Recommendations to guide continuous refinement of Smiths Falls' asset management program. These include:

- Reviewing asset data to update and maintain a complete and accurate centralized asset register
- Developing portfolio-wide condition assessment strategies with a regular schedule
- Reviewing and updating lifecycle management strategies
- Developing and regularly reviewing short- and long-term plans to meet capital requirements
- Continuing to measure current levels of service and identify sustainable proposed levels of service
- Developing a 10-year financial strategy that will support proposed levels of service

1 Introduction & Context

Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio

- Smiths Falls asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management

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

- Ontario Regulation 588/17 outlines several key milestone and requirements for asset management plans in Ontario between July 1, 2022, and 2025

1.1 The Town of Smiths Falls Community Profile

Census Characteristic	Town of Smiths Falls	Lanark County	Ontario
Population 2021	9,254	75,760	14,223,942
Population Change 2016-2021 (%)	5.4	10.3	5.8
Total Private Dwellings	4,523	35,441	5,929,250
Population Density	958.0/km^2	25.4/km^2	15.9/km^2
Land Area	9.66 km^2	2,986.71 km^2	892,411.76 km^2

Smiths Falls is a town in Eastern Ontario, located about 72 kilometers southwest of Ottawa. It is in the census division for Lanark County but is separated from the county.

Smiths Falls was incorporated first as a village in 1854, and then as a town in 1882. The Town's name is derived from the original owner of the land, Thomas Smyth, and the once-magnificent falls that were diverted to create the Rideau Canal and the three lock stations. The rideau canal was constructed to link Lake Ontario and Ottawa River. Its opening in 1832 is seen as a milestone for the area since it allowed for economic growth.

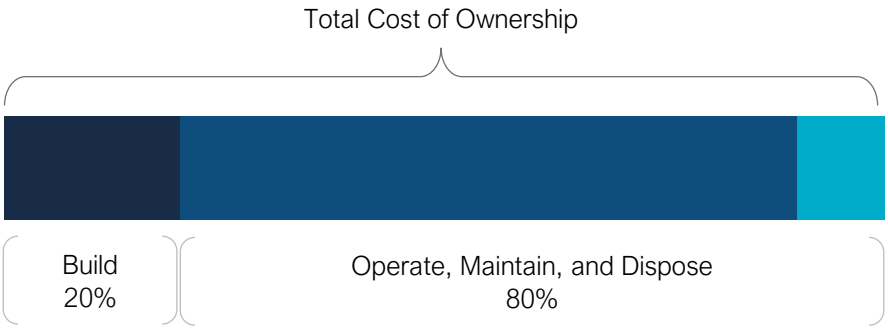
The Canadian Pacific Railway constructed part of its line through the area, which provided a direct trade route to Montreal and its shipping lines. That led to an economic boom and rapid increase in population after 1884. Due to those early ventures, Smiths Falls has a diverse history of important industries, such as Frost and Wood Co. Ltd., Coca-Cola, RCA Victor Ltd., Rideau Regional Centre and Hershey's Canada Inc.

The Town of Smiths Falls is a growing and vibrant community, a safe and friendly community routed in history and culture. Smiths Falls is approximately 1 hour from Ottawa and Kingston and less than 30 minutes to Perth, and Carleton Place. Smiths Falls is a regional hub offering health care, education, recreation, shopping and dining services to the surrounding areas in Lanark County making it an ideal place to live, visit, and do business.

1.2 An Overview of Asset Management

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

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



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

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

1.2.1 Asset Management Policy

An asset management policy represents a statement of the principles guiding Smiths Falls' 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.

Smiths Falls approved by-law 10048-2019 to adopt Schedule A: "Strategic Asset Management Policy" on June 17th, 2019, in accordance with Ontario Regulation 588/17. The stated goals of the policy are:

- To provide a comprehensive and holistic approach for managing municipal infrastructure assets to ensure they deliver expected service levels efficiently and effectively
- To comply with provincial and national standards and regulations, such as the Infrastructure for Jobs and Prosperity Act, 2015, and Ontario Regulation 588/17, and to leverage available grant funding opportunities
- To direct how staff and Council should engage with the Municipality's Asset Management Plan, ensuring alignment with financial planning and capital forecasting
- To provide principles and a framework for managing assets in a coordinated, cost-effective manner across all departments, with specific goals to:
    - Optimize lifecycle costs while maintaining acceptable service levels
    - Link infrastructure investments to service outcomes
    - Improve decision-making accountability and transparency
    - Establish organizational accountability for asset management

The policy provides a foundation for the development of an asset management program within the Municipality. It covers key components that define a comprehensive asset management policy:

- The policy's objectives dictate the use of asset management and data management practices to ensure all assets meet the expected levels and provide the desired levels of service in the most efficient and effective manner
- The policy commits to, where appropriate, incorporating asset management in the Municipality's other plans
- There are formally defined roles and responsibilities of internal staff
- The key principles include the use of a cost/benefit analysis in the management of risk; and
- The policy statements are well defined

1.2.2 Asset Management Strategy

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

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

1.2.3 Asset Management Plan

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

1.3 Key Concepts in Asset Management

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

1.3.1 Lifecycle Management Strategies

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

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

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

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

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

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

1.3.2 Risk Management Strategies

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

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused. This AMP includes a high-level evaluation of asset risk and criticality. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to prioritize maintenance, rehabilitation and replacement strategies for critical assets.

1.3.3 Levels of Service

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

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

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (roads, bridges, water, sanitary sewer, & storm) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core asset categories, Smiths Falls has determined the qualitative descriptions that will be used to determine the community levels of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

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

For core asset categories (roads, bridges, water, sanitary sewer, & storm), the province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP. For non-core asset categories, Smiths Falls has determined the technical metrics that will be used to determine the technical levels of service provided. These metrics can be found in the Levels of Service subsection within each asset category.

Current and Proposed Levels of Service

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

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

1.4 Ontario Regulation 588/17

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

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

2019

Strategic Asset Management Policy

2022

Asset Management Plan for Core Assets with the following components:

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

2024

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

2025

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

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

1.4.1 O. Reg. 588/17 Compliance Review

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

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

2 Scope and Methodology

Key Insights

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

2.1 Asset Categories Included in this AMP

This asset management plan for the Town of Smiths Falls is produced in compliance with Ontario Regulation 588/17. The July 2024 iteration of the Asset Management Plan requires analysis of both core and non-core assets.

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

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

2.2 Deriving Replacement Costs

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

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

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 Smiths Falls incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.3 Estimated Useful Life and Service Life Remaining

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

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

2.4 Reinvestment Rate

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

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

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

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

2.5 Deriving Asset Condition

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

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

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

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

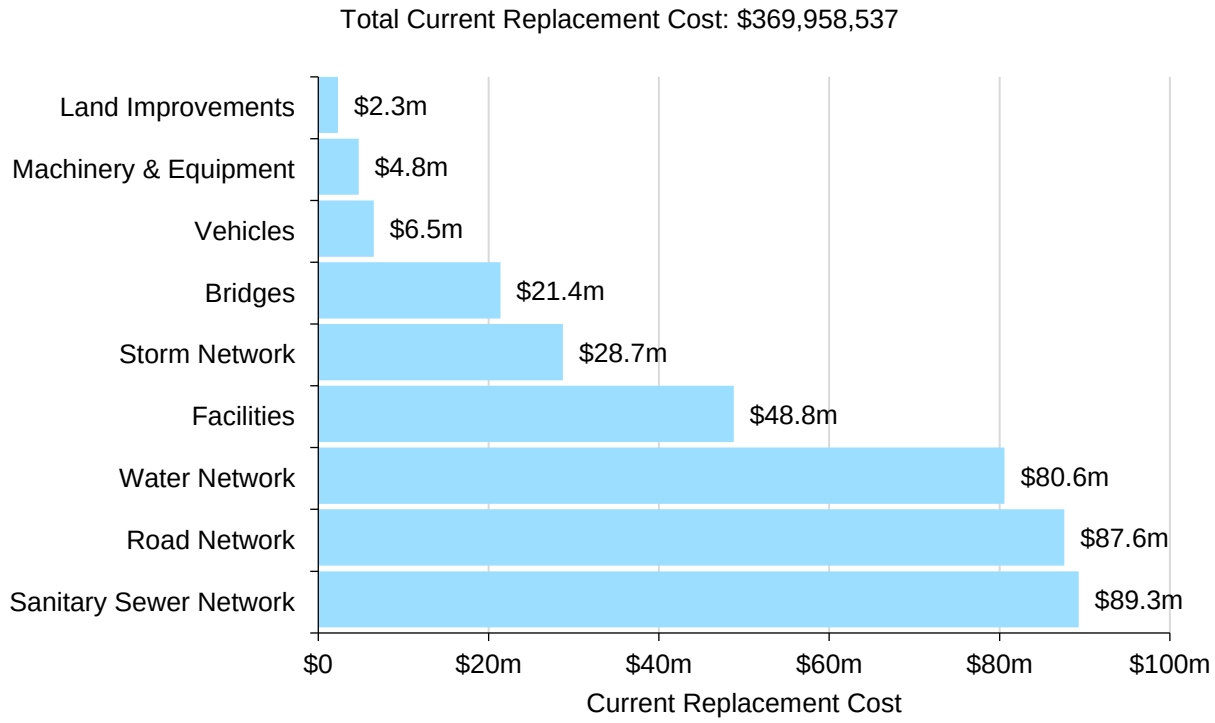
3 Portfolio Overview

Key Insights

- The total replacement cost of Smiths Falls' asset portfolio is $370.0 million
- 77% of all assets are in fair or better condition
- Average annual capital requirements total $10.0 million per year across all assets

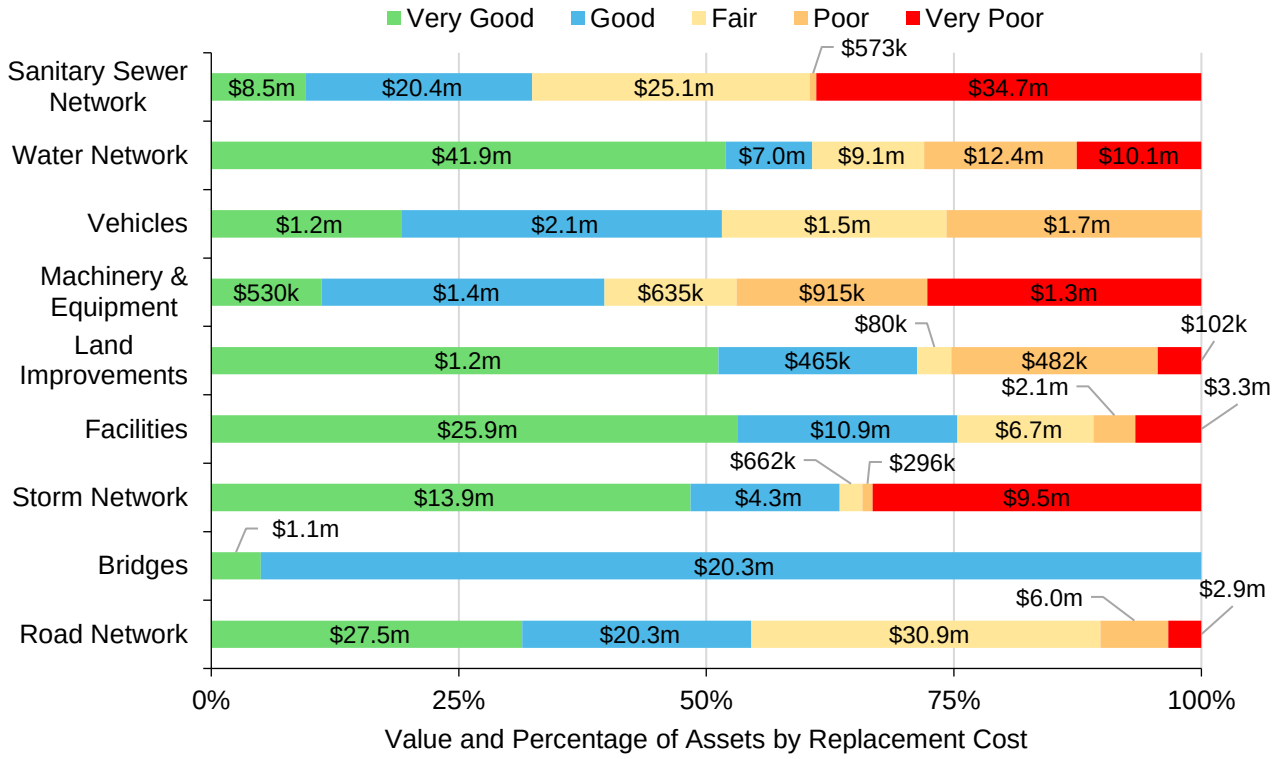
3.1 Total Replacement Cost of Asset Portfolio

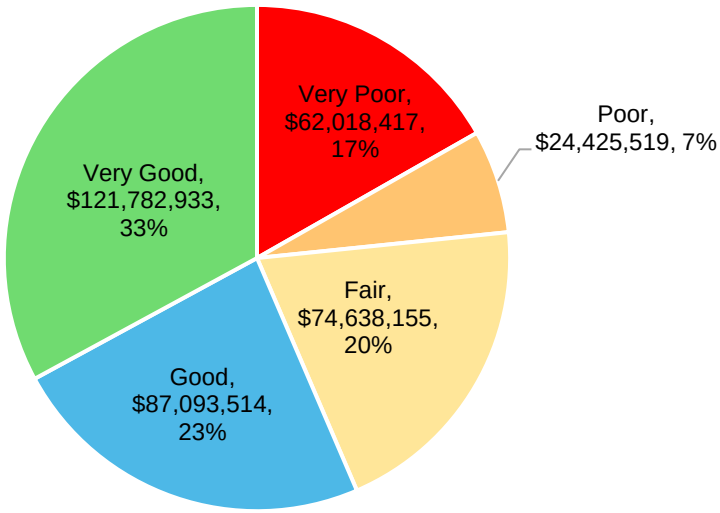
The asset categories analyzed in this AMP have a total replacement cost of $370.0 million based on inventory data from 2022. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.



3.2 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 77% of assets in Smiths Falls are in fair or better condition. This estimate relies on both age-based and field condition data.





This AMP relies on assessed condition data for 86% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

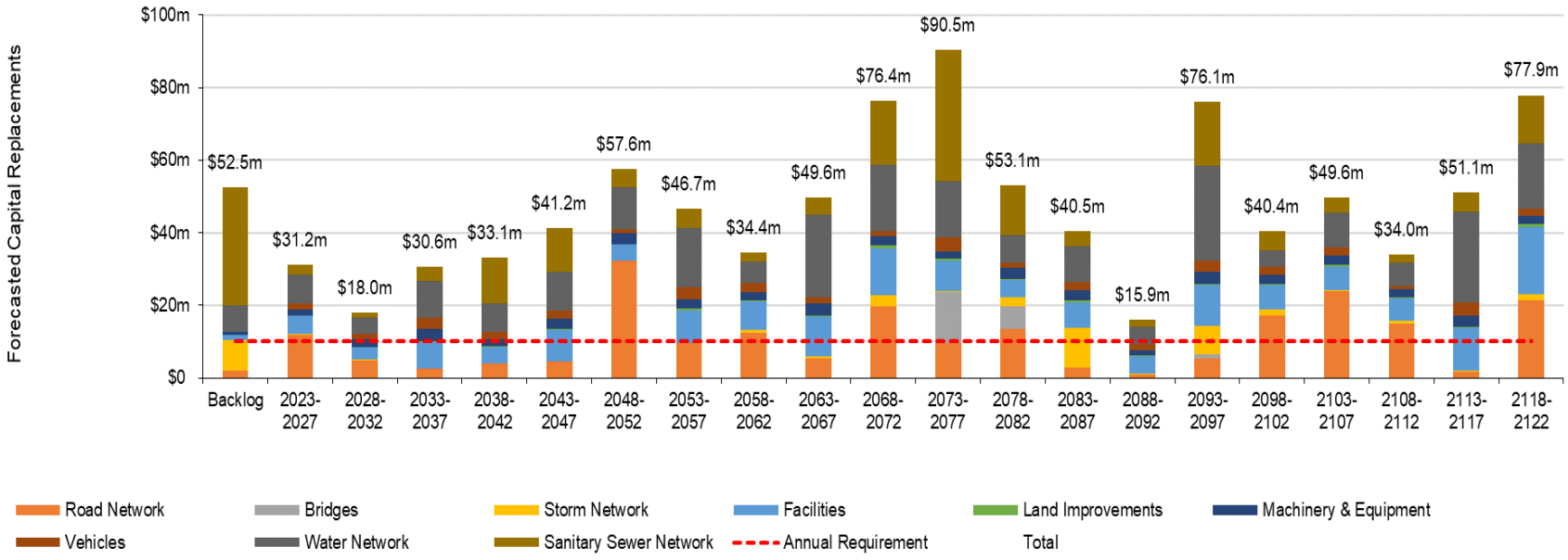
Asset Category	Asset Segment	% of Assets with Assessed Condition[2]	Source of Condition Data
Road Network	All	84%	Road Needs Study Staff Assessments
Bridges	All	100%	OSIM Report
Storm Network	All	53%	CCTV Inspections Staff Assessments
Facilities	All	85%	Building Condition Assessments Staff Assessments
Machinery & Equipment	All	66%	Staff Assessments
Vehicles	All	79%	Staff Assessments
Land Improvements	All	79%	Staff Assessments
Water Network	All	93%	Staff Assessments
Sanitary Sewer Network	All	90%	CCTV Inspections Staff Assessments
	Total	**86%**	

[2] Replacement cost weighted average

3.3 Forecasted Capital Requirements

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

The following graph identifies capital requirements over the next 100 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins.



4 Analysis of Tax-funded Assets

Key Insights

- Tax-funded assets are valued at $200.1 million
- 86% of tax-funded assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for tax-funded assets is approximately $5.5 million

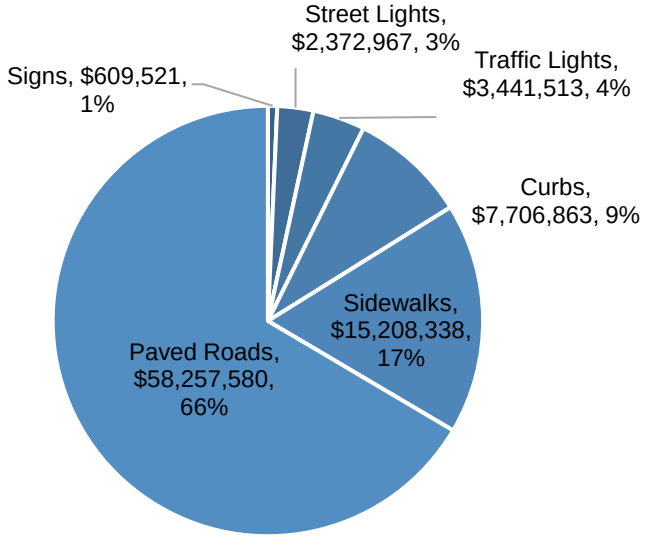
4.1 Road Network

The road network is a critical component of the provision of safe and efficient transportation services. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including sidewalks, streetlights, traffic lights, signs, and curbs.

4.1.1 Asset Inventory & Replacement Costs

The table below includes 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
Curbs	24,406	Meters	$7,707,000	CPI
Paved Roads	569,116	Area	$58,258,000	User-defined
Sidewalks	61,440	Meters	$15,208,000	CPI
Signs	1,828	Assets	$610,000	CPI
Street Lights	478	Assets	$2,373,000	CPI
Traffic Lights	25	Assets	$3,442,000	CPI

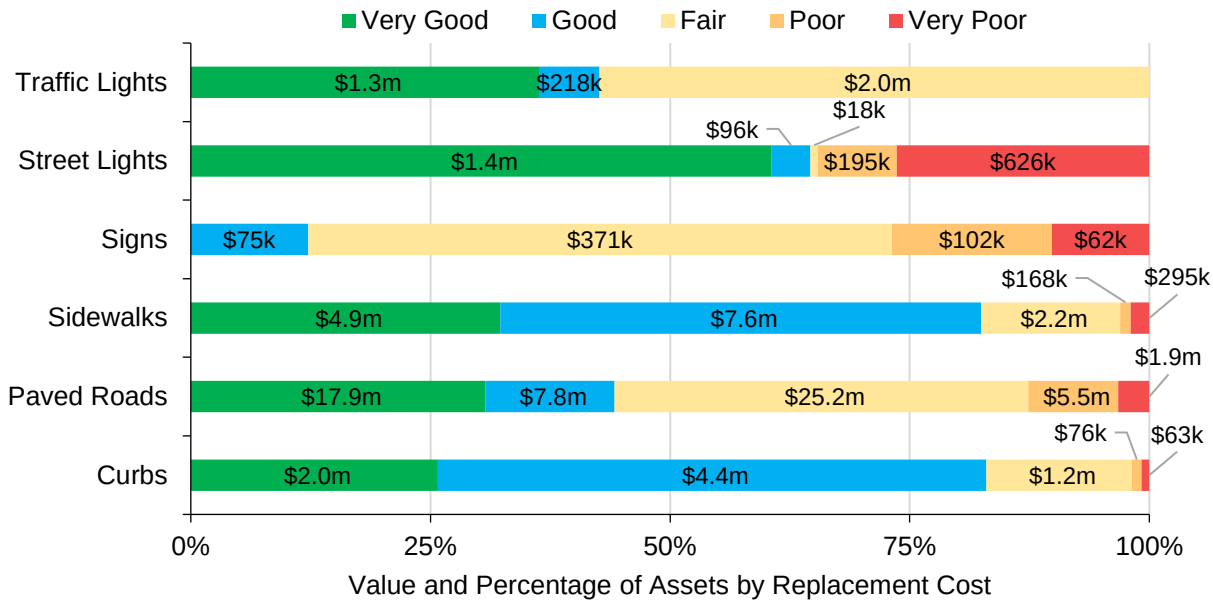


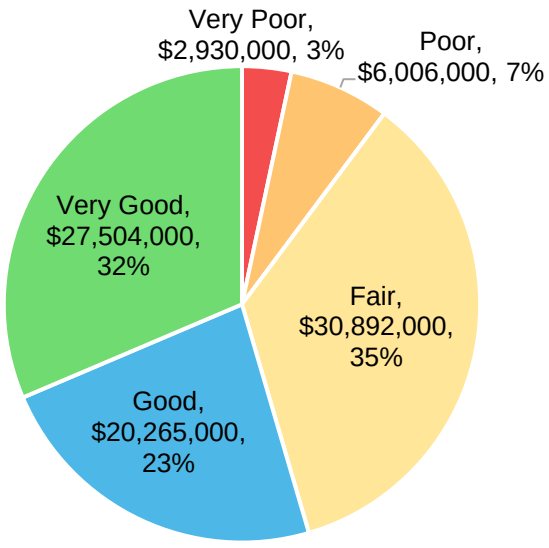
Total Current Replacement Cost: $87,596,782

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

4.1.2 Asset Condition

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





To ensure that the Town's road network continues to provide an acceptable level of service, it should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to

determine what combination of maintenance, rehabilitation, and replacement activities is required to increase the overall condition of the roads.

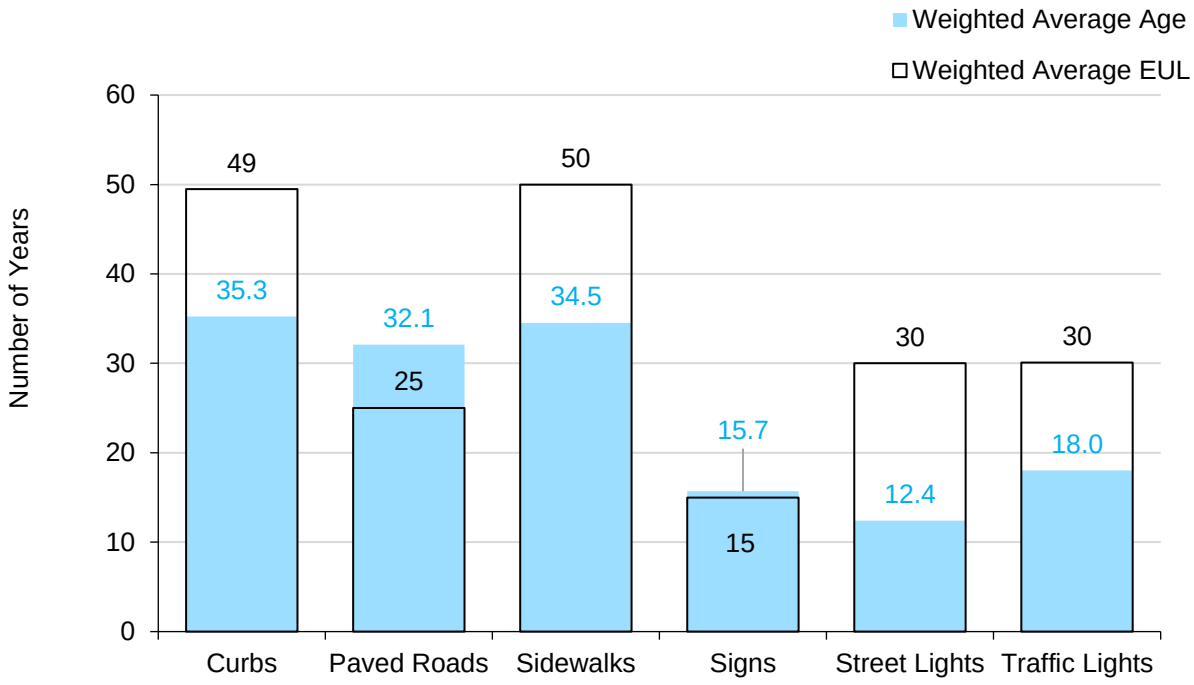
Current Approach to Condition Assessment

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 Smiths Falls' current approach:

- The Town conducts a roads assessment every 5 years. The last assessment was completed in 2021, and the next is scheduled for 2026. Streetscan assigns a PCI rating, forming the basis for project prioritization, with consideration for underground linear condition.
- The Town has recently (2021 & 2023) undergone external sidewalk assessments, where a SCI score was assigned to assets.
- Streetlights and other roadside appurtenances are assessed according to minimum maintenance standards. Sidewalk assessments are conducted by contractors, while Public Works staff handle streetlight assessments.
- Data on infrastructure conditions guides The Town's budgeting process, allowing for resource allocation where most needed and prioritizing safety improvements.

4.1.3 Estimated Useful Life & Average Age

The Estimated Useful Life for road network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

4.1.4 Lifecycle Management Strategy

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

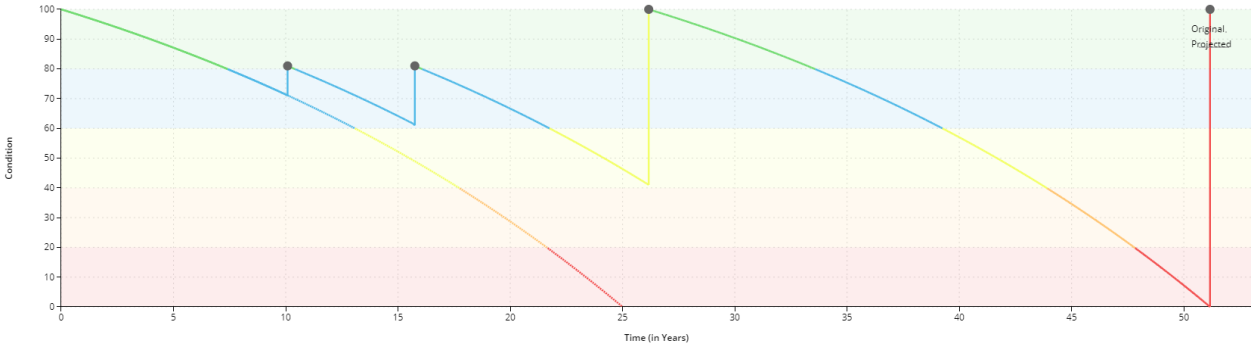
The following table outlines the Town's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	The Town employs lifecycle strategies for gravel road assets to maintain current levels of service to the public. Routine maintenance includes pothole filling and shoulder maintenance.
	For paved roads, rehabilitation includes crack sealing, surface treatment, and mill & overlay, based on road conditions and road assessments.
	Assets are considered for replacement when their condition significantly deteriorates or when rehabilitation is no longer cost-effective. Assets nearing the end of their service life or

requiring frequent and costly repairs are prioritized for replacement.

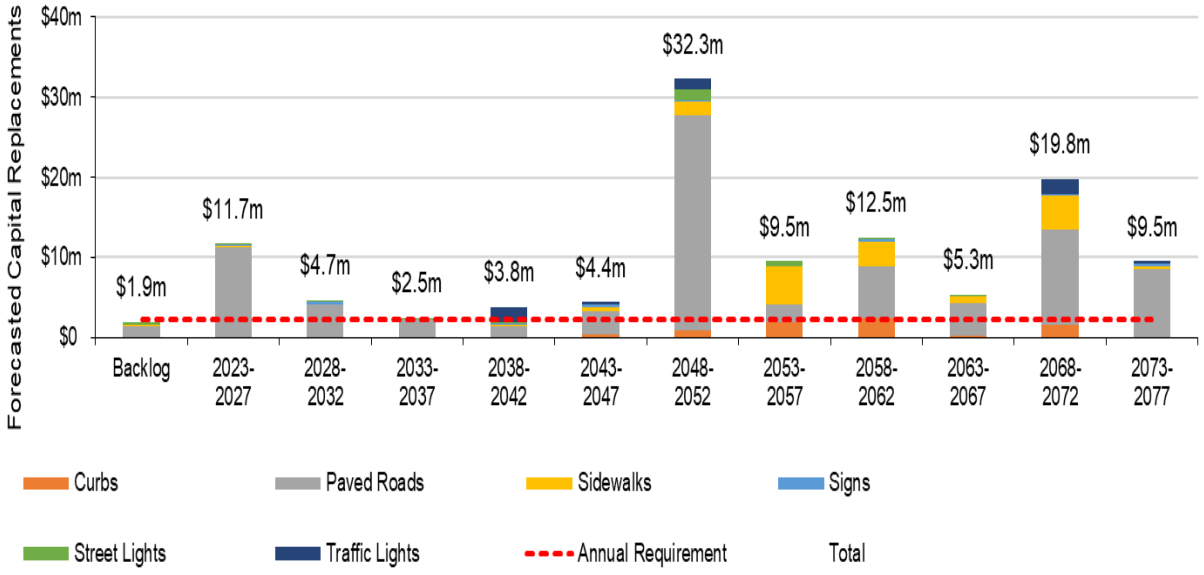
The following lifecycle strategies have been developed as a proactive approach to managing Smiths Falls' paved roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Paved Roads (HCB)		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Maintenance	71%-90% Condition
Surface Treatment – Single Lift	Rehabilitation	61%-70% Condition
Mill & Overlay	Rehabilitation	41%-60% Condition
Full Reconstruction	Replacement	0%-40% Condition



Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The graph identifies capital requirements over the next 55 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement.

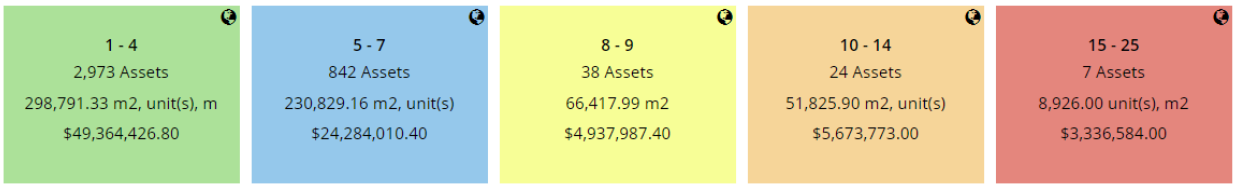


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.1.5 Risk & Criticality

Risk Matrix

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



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

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

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
Service Life Remaining (%)	Classification (Social)
	AADT (Health and Safety)

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

Risks to Current Asset Management Strategies

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

Aging Infrastructure

A significant portion of The Town's road network infrastructure is approaching or has exceeded its expected service life. Current budgetary constraints pose challenges to implementing a proactive internal replacement plan, as the costs associated with such initiatives often exceed available funding resources. However, developing a proactive and strategic capital forecast is essential to minimize hidden road failures and risks.

Growth

The Town is expected to experience continuous growth. Population and employment growth will increase the demand on municipal services and potentially decrease the lifecycle of certain assets. The Town is currently updating its Official Plan to project and accommodate future community growth. This initiative is crucial for determining whether the existing asset network can adequately support anticipated increases in population and infrastructure demands.

Capital Funding Strategies

Major capital rehabilitation and replacement projects are often entirely dependant on the availability of grant funding opportunities. When grants are not available, rehabilitation and replacement projects may be deferred. An annual capital funding strategy could reduce dependency on grant funding and help prevent deferral of capital works.

4.1.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix B
Quality	Description or images that illustrate the different levels of road class pavement condition	A Streetscan Road Condition Assessment was completed in 2021. The rating numbers were assigned on a scale of 1 to 100 with the lower numbers describing those roads with the most structural distress or poorest shaped road cross section. (1-50) Road surface exhibits moderate to significant deterioration and requires improvement. (50-100) Road surface is in generally good condition, with localized deficiencies.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0.96
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	0.93
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	4.76
Quality	Average pavement condition index for paved roads in the municipality	63
	Average surface condition for unpaved roads in the municipality (e.g., excellent, good, fair, poor)	Good
	Capital reinvestment rate	TBD

4.1.7 Recommendations

Asset Inventory

- Continue to refine and update attribute information to supplement the risk and lifecycle strategies.
- Update replacement costs based on recent project prices on a regular basis, every 1-2 years.
- Update condition (PCI) information regularly, as it becomes available, to ensure capital forecasts are reliable.

Lifecycle Management Strategies

- Implement and continuously refine the identified lifecycle management strategies for paved roads to realize potential cost avoidance and maintain a high quality of road pavement condition.
- Evaluate the efficacy of the Town's lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk. This could be done by updating the condition assessment data whenever new data becomes available and rerunning the capital projections and risk reports.

Risk Management Strategies

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

Levels of Service

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

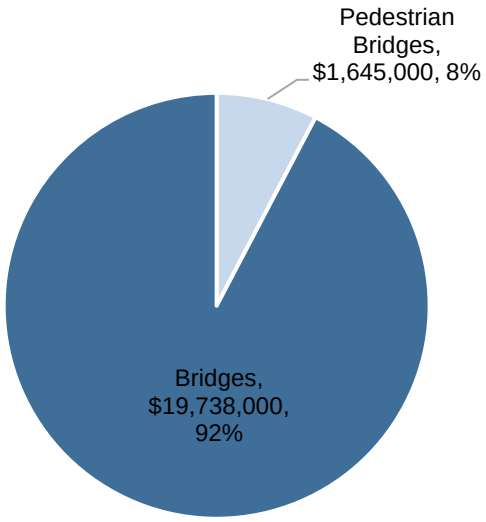
4.2 Bridges

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

4.2.1 Asset Inventory & Replacement Costs

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

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Bridges	5	Assets	$19,738,000	User-defined
Pedestrian Bridges	3	Assets	$1,645,000	User-defined

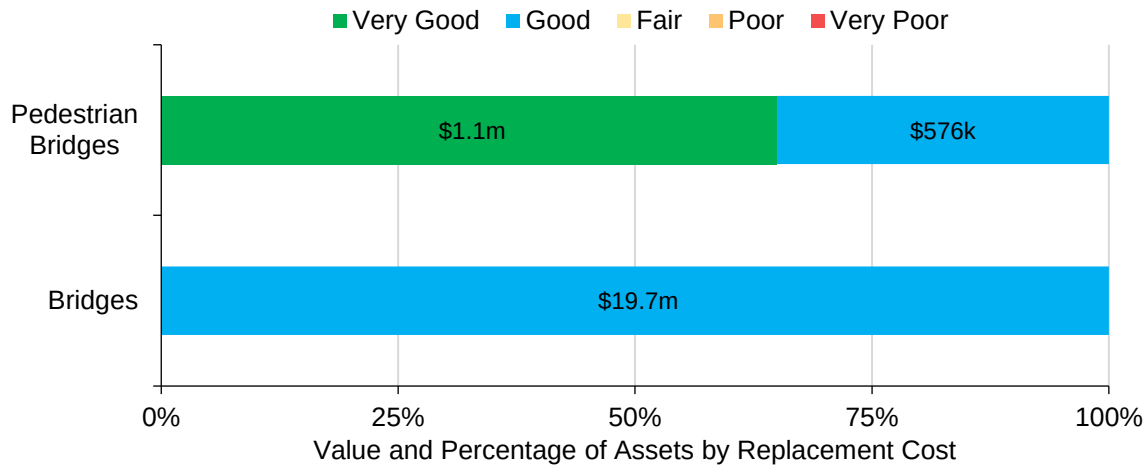


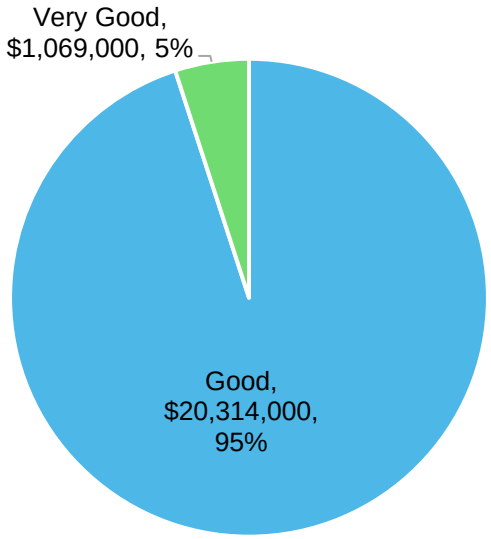
Total Current Replacement Cost: $21,383,000

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

4.2.2 Asset Condition

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





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

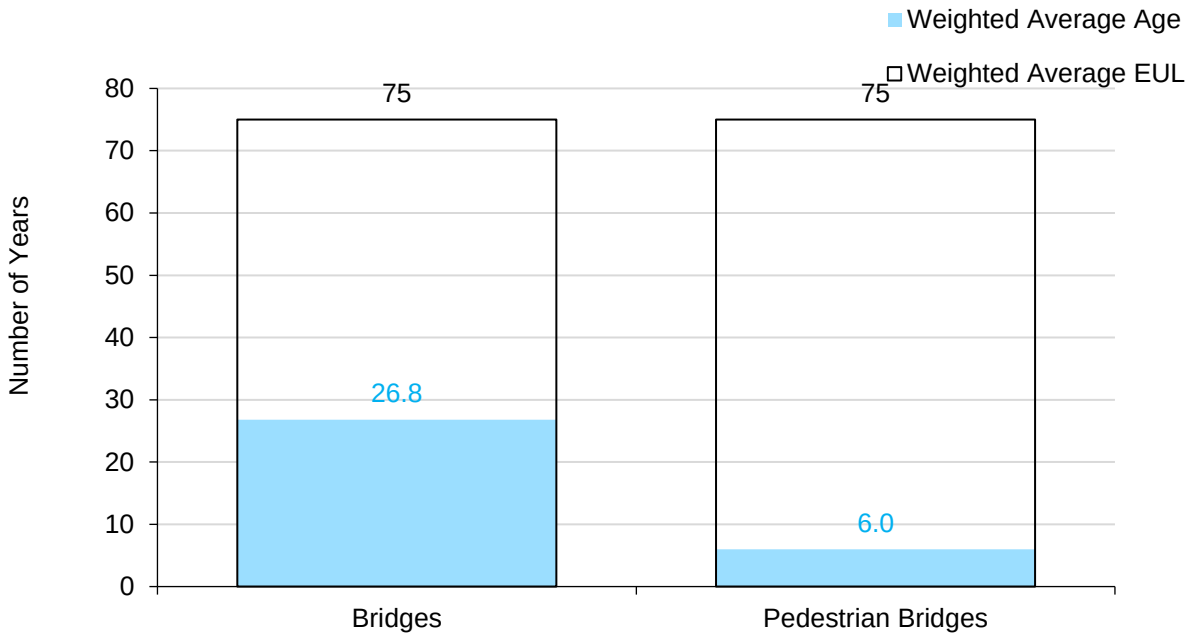
Current Approach to Condition Assessment

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

- Condition assessments of all bridges are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM)

4.2.3 Estimated Useful Life & Average Age

The Estimated Useful Life for bridge assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

4.2.4 Lifecycle Management Strategy

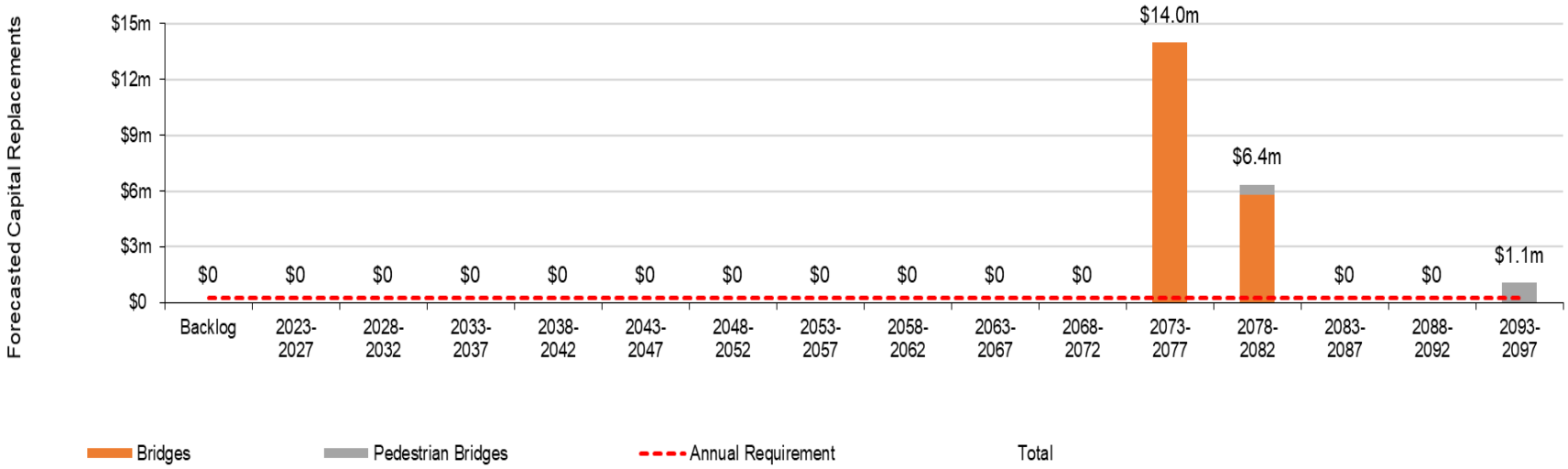
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM) These inspections identify maintenance needs, rehabilitation opportunities, and potential replacement considerations based on the structural condition assessments conducted.

Forecasted Capital Requirements

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

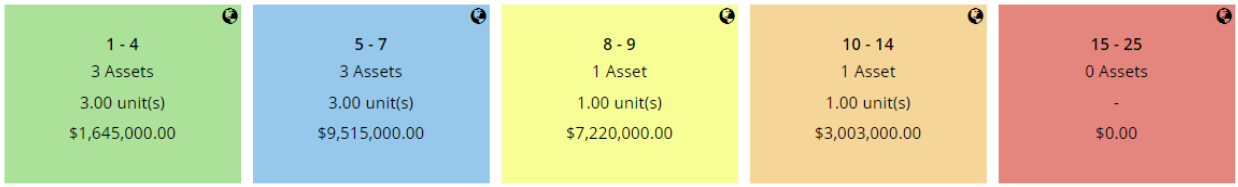


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.2.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Weather

An increase in the frequency and intensity of precipitation events can result in flooding and washouts, which negatively impacts the Town's bridges. This is further exacerbated by freeze-thaw cycles. The Town must continuously assess and adapt its infrastructure management strategies to mitigate these risks and ensure resilience against changing environmental conditions.

Capital Funding Strategies

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

4.2.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges are a key component of Smiths Falls' municipal transportation network. No bridges in the Town have load or dimensional restriction. Traffic that is supported by municipal bridges includes heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians and cyclists.
Quality	Description or images of the condition of bridges and how this would affect use of the bridges	See Appendix B

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% of bridges in the Town with loading or dimensional restrictions	0
Quality	Average bridge condition index value for bridges in the Town	71
	Average bridge condition index value for pedestrian bridges in the Town	89
	Capital reinvestment rate	TBD

4.2.7 Recommendations

Asset Inventory

- Continue to review and validate inventory data, assessed condition data and replacement costs for all bridges upon the completion of OSIM inspections every 2 years.

Risk Management Strategies

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

Lifecycle Management Strategies

- This AMP only includes capital costs associated with the reconstruction of bridges. The Town should work towards identifying projected capital rehabilitation and renewal costs for bridges integrating these costs into long-term planning.

Levels of Service

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

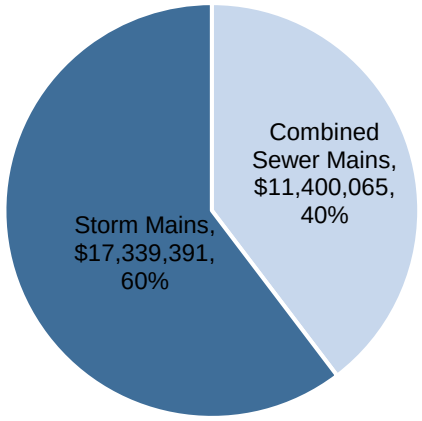
4.3 Storm Network

The Town owns and maintains a storm network consisting of storm mains and combined sewer mains.

4.3.1 Asset Inventory & Replacement Costs

The table below includes 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
Combined Sewer Mains	26,728	Meters	$11,400,000	Cost per unit
Storm Mains	23,882	Meters	$17,339,000	Cost per unit

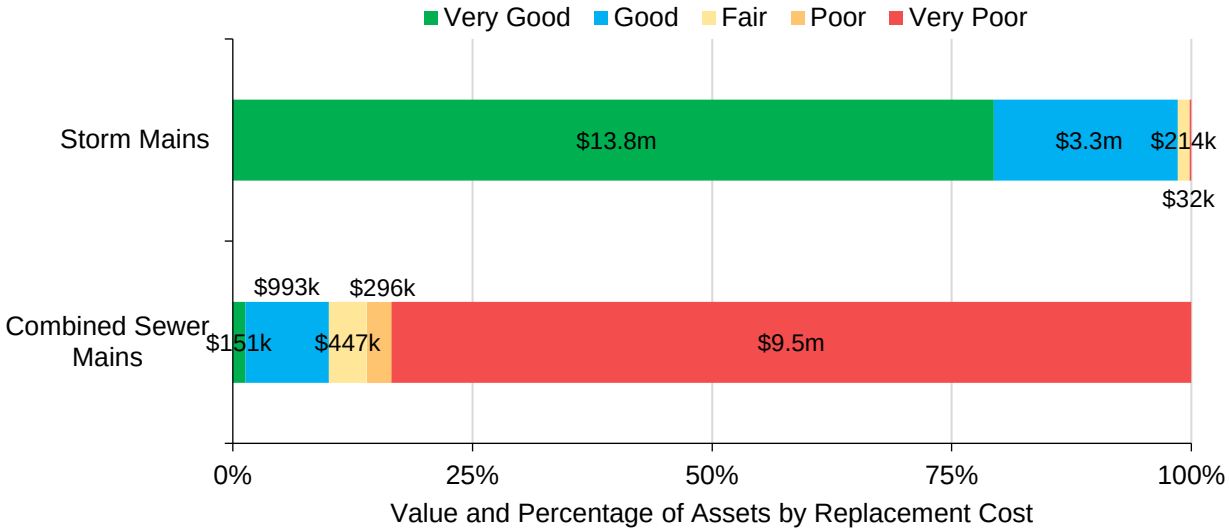


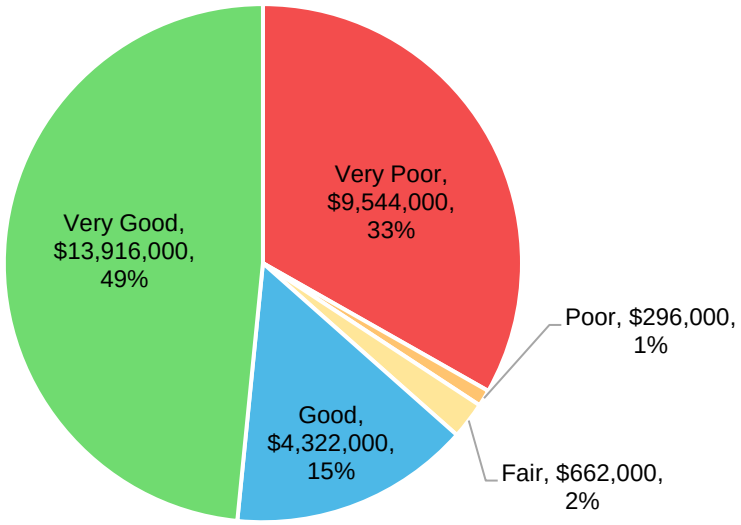
Total Current Replacement Cost: $28,739,456

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

4.3.2 Asset Condition

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





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

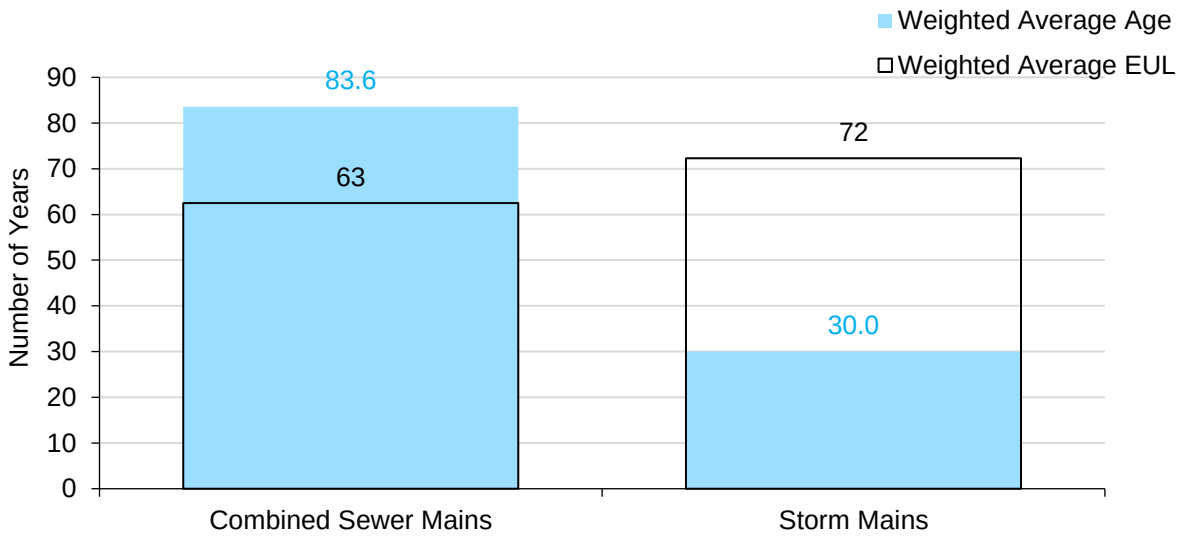
Current Approach to Condition Assessment

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 Smiths Falls' current approach:

- An assessment is conducted every 10 years, utilizing a rotating six-quadrant schedule. External contractors conduct CCTV inspections, assigning condition ratings that form the basis for prioritizing projects. These assessments consider underground linear conditions, providing critical data for infrastructure planning.
- Internal staff perform weekly inspections at critical points throughout the system, complemented by monthly inspections covering the entire network.
- Manholes are also assessed through CCTV.

4.3.3 Estimated Useful Life & Average Age

The Estimated Useful Life for storm network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

4.3.4 Lifecycle Management Strategy

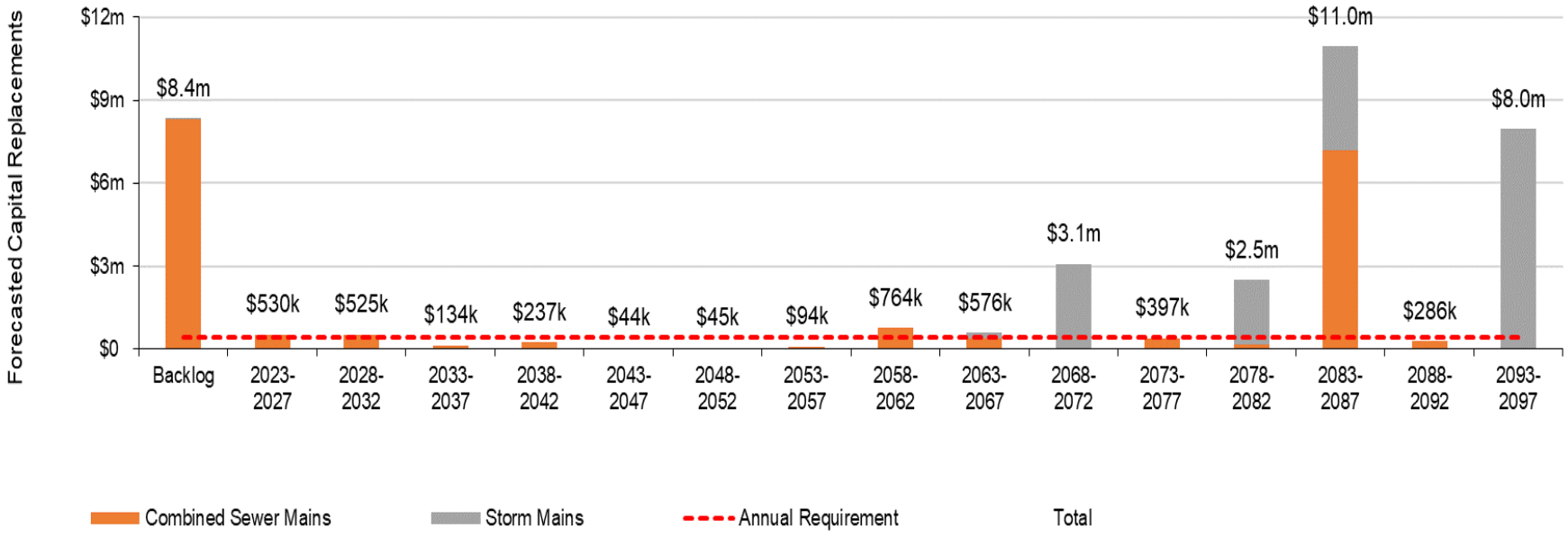
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines Smiths Falls' current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Regular cleaning of sewer lines based on findings from CCTV inspection reports to prevent blockages and maintain optimal flow.
	Routine maintenance to ensure catch basins remain clear and functional, minimizing the risk of flooding.
Rehabilitation /Replacement	Rehabilitation activities encompass trenchless relining, structural repairs, and upgrades to outdated systems. Rehabilitation decisions are prompted by CCTV inspections identifying defects and structural assessments indicating deterioration.
	Combined sewers are prioritized for replacement to separate storm and sanitary flows, contingent on available budgetary resources.

Forecasted Capital Requirements

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

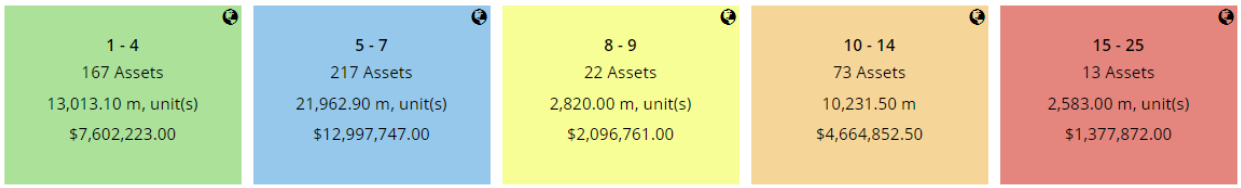


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.3.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Infrastructure Design/Installation

Concerns arise from the predominant use of vitrified clay pipes in combined sewers, which are susceptible to infiltration issues. Past storm designs may not adequately account for current and future climate change impacts, highlighting potential deficiencies in system resilience. The Town continues to focus on prioritizing combined sewers for replacement to separate storm and sanitary flows.

Climate Change & Extreme Weather Events

Climate change and extreme weather events significantly impact the Storm Network infrastructure. The system was originally designed to handle 5-year storm events, but increasingly frequent and intense storms, equivalent to 100-year events, exceed its capacity. This necessitates ongoing assessments and adaptations to enhance infrastructure resilience against evolving climate conditions.

4.3.6 Levels of Service

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

Community Levels of Service

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

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

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% of properties in municipality resilient to a 100-year storm[3]	TBD
	% of the municipal storm management system resilient to a 5-year storm[4]	TBD
	Capital Reinvestment Rate	TBD

[3] The Town does not currently have data available to determine this technical metric. The percentage of the storm network resilient to a 100-year storm is not expected to be high.

[4] The Town does not currently have data available to determine this technical metric. The percentage of the storm network resilient to a 5-year storm is expected to be high.

4.3.7 Recommendations

Asset Inventory

- Smiths Falls' storm network inventory remains at a basic level of maturity. It is recommended that when time and resources permit, that storm network assets be componentized.
- Currently, the Town's assets are pooled. Since assets have varying replacement costs, estimate useful lives, and other requirements, asset management best practices dictate that to have accurate capital projections, the Town should have greater asset granularity with its storm network infrastructure.
- It is recommended that the Town review and update assets which have been identified as backlog

Condition Assessment Strategies

- Continue to investigate the resilience of the storm network and the design specifications that they system was built to.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.
- Staff should consider conducting a storm system resiliency assessment and/or connect with conservation authorities to capture flood plain mapping information and better understand the resilience of their properties against severe storms (ex. 100-year storms)

Lifecycle Management Strategies

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

Levels of Service

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

4.4 Facilities

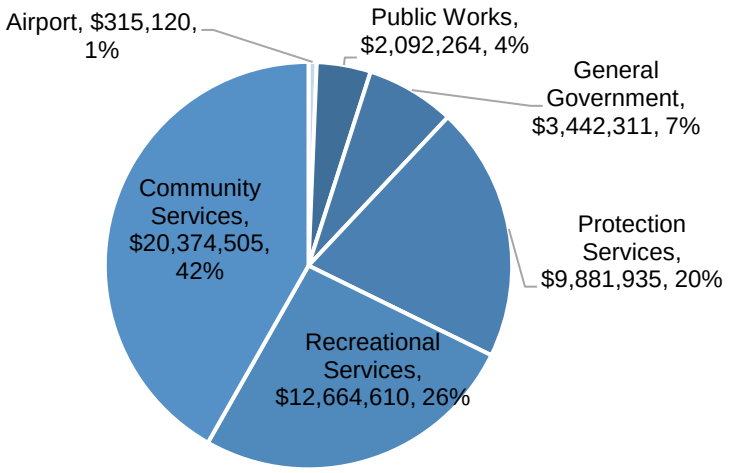
The Town of Smiths Falls owns and maintains several facilities that provide key services to the community. These include:

- Municipal airport
- Community Centres
- Administrative offices
- Protection service facilities
- Public works buildings, and more

4.4.1 Asset Inventory & Replacement Costs

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

Segment	Components	Unit of Measure	Replacement Cost	Primary RC Method
Airport	5	Assets	$315,000	CPI
Community Services	99	Assets	$20,375,000	CPI
General Government	19	Assets	$3,442,000	CPI
Protection Services	42	Assets	$9,882,000	CPI
Public Works	34	Assets	$2,092,000	CPI
Recreational Services	65	Assets	$12,665,000	CPI

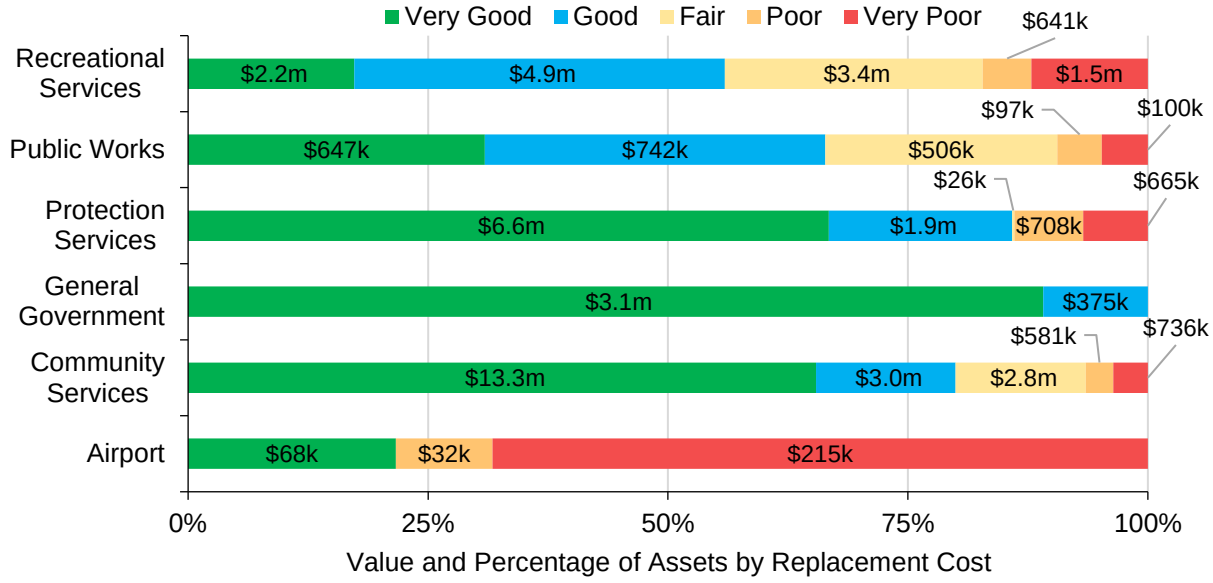


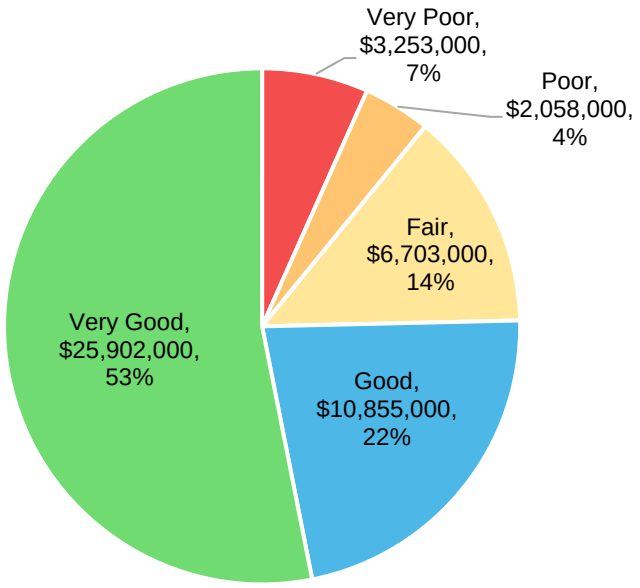
Total Current Replacement Cost: $48,770,745

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

4.4.2 Asset Condition

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





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

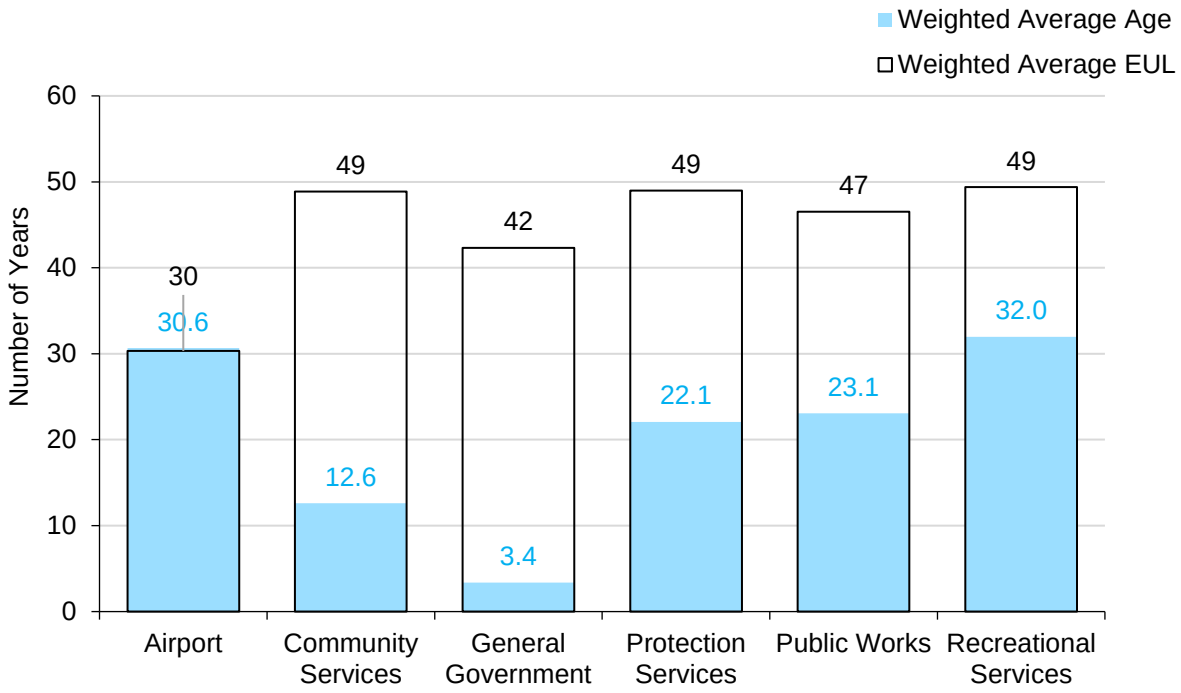
Current Approach to Condition Assessment

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 Smiths Falls' current approach:

- Building Condition Assessments (BCAs) are conducted by contractors at five-year intervals to evaluate the structural integrity, performance, and maintenance needs of the buildings.
- In addition to BCAs, annual inspections are conducted internally. The gathered condition data plays a crucial role in budget allocation, allowing the Town to prioritize projects based on asset condition and critical needs.

4.4.3 Estimated Useful Life & Average Age

The Estimated Useful Life for facility assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

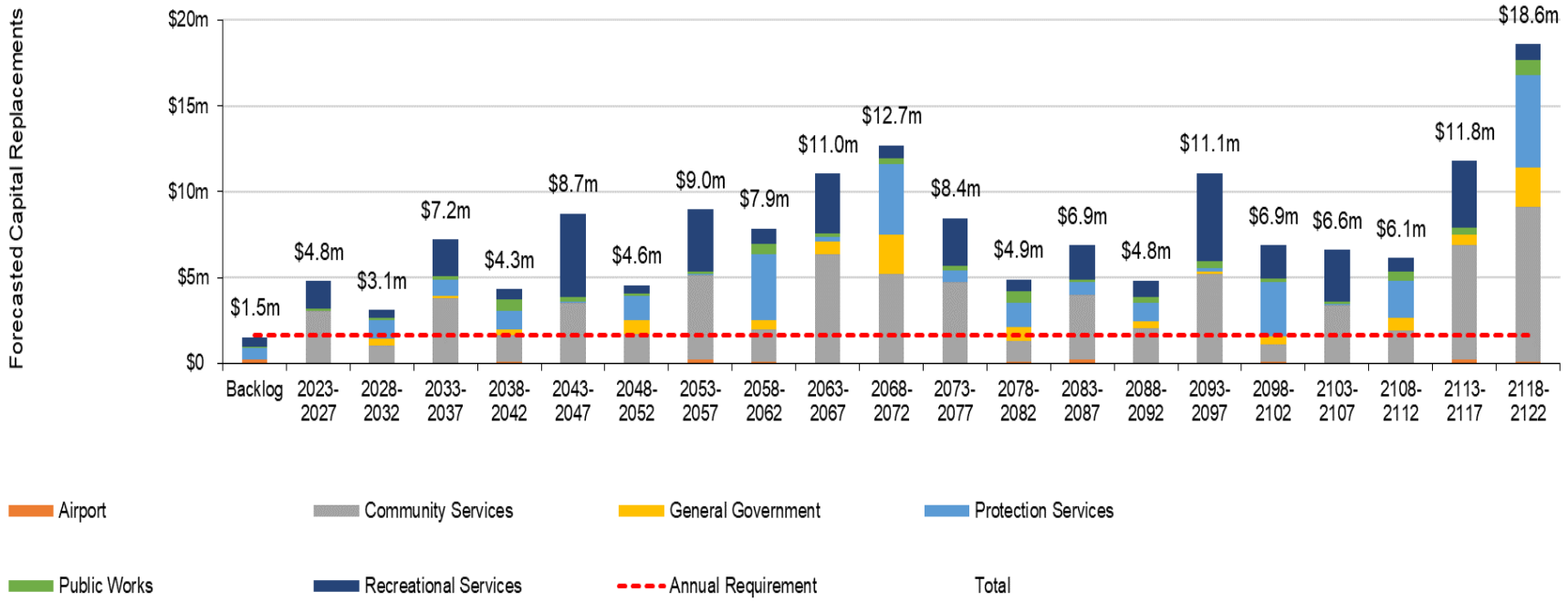
4.4.4 Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance	Regular maintenance encompasses HVAC servicing, fire suppression system inspections, specialized equipment assessments, water line evaluations, and overall building condition checks. Minor and major repairs are promptly addressed as needed. Maintenance actions are typically prompted by identified safety issues or structural/infrastructural deficiencies.
Rehabilitation	Rehabilitation efforts entail tasks such as replacing hot water heaters/boilers, repairing windows, and upgrading HVAC systems. These actions are undertaken based on the findings of inspections conducted.
Replacement	Replacement becomes necessary when a facility's condition has significantly deteriorated, rendering continued maintenance and rehabilitation impractical from a cost perspective. Assets nearing the end of their expected service life or experiencing frequent and costly repairs are given priority for replacement.

Forecasted Capital Requirements

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

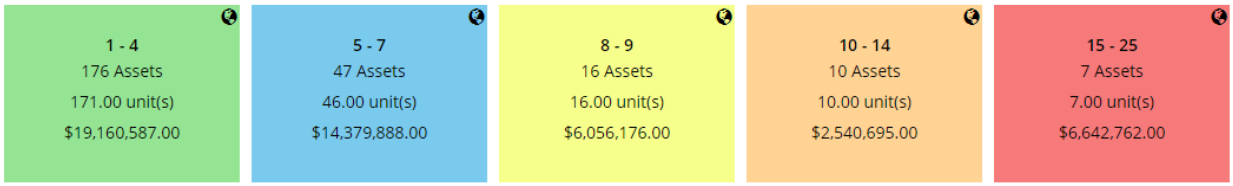


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.4.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Weather
Asset deterioration is accelerated due to extreme weather, which in some cases can cause unexpected failures. Ice jams and surface flooding from extreme rainfall have been experienced by the Town in recent years. These events accelerate the deterioration of assets and ultimately, can result in a lower level of service.

4.4.6 Levels of Service

The following tables identify the Town's current level of service for the facilities. These metrics include the technical and community level of service metrics that the Town has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the types of facility assets that the Town operates and maintains	Refer to section 4.4.1
Quality	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to section 4.4.4

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Average Condition Rating	72% (Good)
	Average Risk Rating	6.57[5]
Performance	Capital reinvestment Rate	TBD

4.4.7 Recommendations

Asset Inventory

- Continue to review and update the asset register as better asset data becomes available.

Condition Assessment Strategies

- Continue to conduct regularly scheduled, external building condition assessments for all facilities to better inform short- and long-term capital requirements.

Risk Management Strategies

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

Levels of Service

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

[5] Refer to section 4.4.5

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

4.5 Vehicles

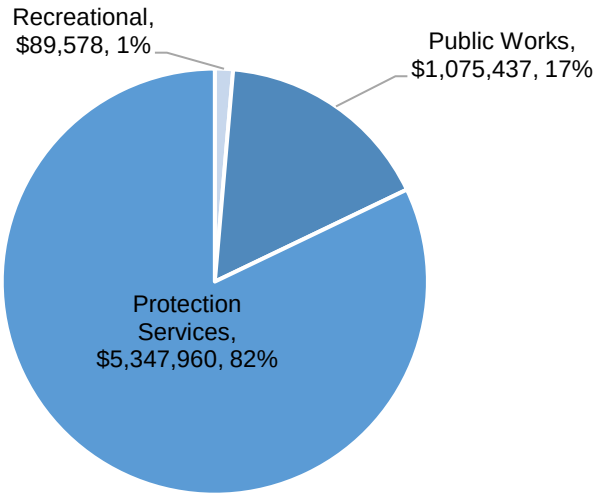
Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- Protection service vehicles to provide support for emergency services
- Public works and recreational vehicles to support transportation and recreational services

4.5.1 Asset Inventory & Replacement Costs

The table below includes 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
Protection Services	14	Assets	$5,348,000	User-defined
Public Works	13	Assets	$1,075,000	CPI
Recreational	2	Assets	$90,000	CPI

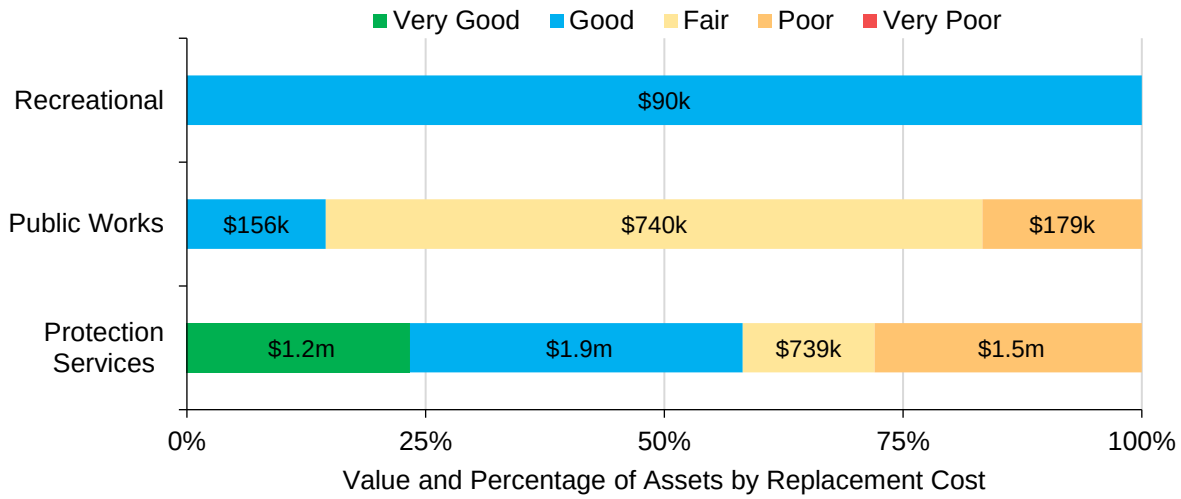


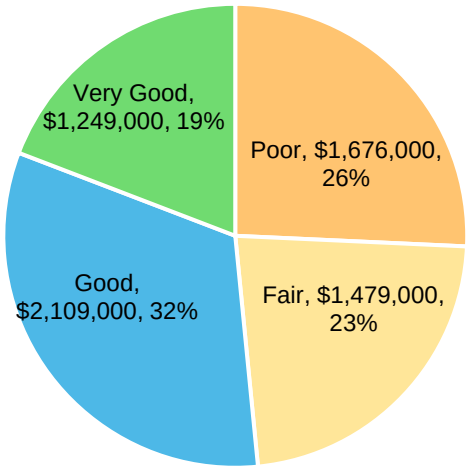
Total Current Replacement Cost: $6,512,975

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

4.5.2 Asset Condition

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





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

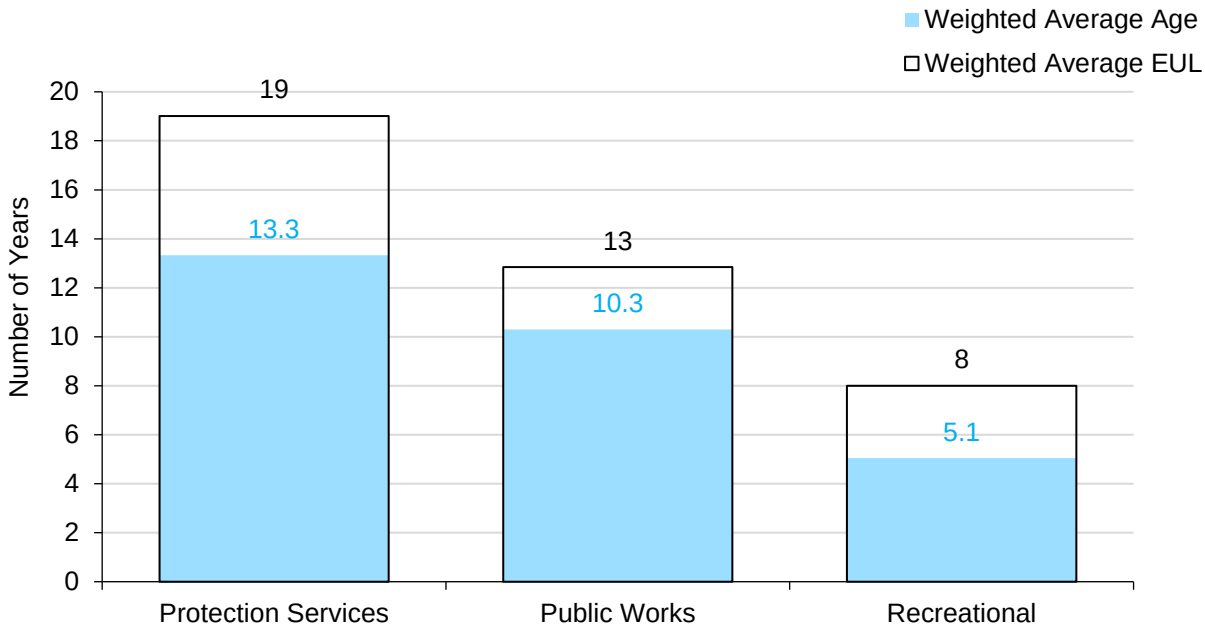
Current Approach to Condition Assessment

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

- Public Works, utilities, and fire protection vehicles undergo annual safety inspections, while police vehicles receive biannual inspections.
- Fire staff conduct daily inspections, with more comprehensive annual assessments.
- Vehicle age and condition are evaluated annually, with increasing emphasis on condition as vehicles approach their Estimated Useful Life (EUL), playing a critical role in budget allocation for capital replacements.

4.5.3 Estimated Useful Life & Average Age

The Estimated Useful Life for vehicle assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

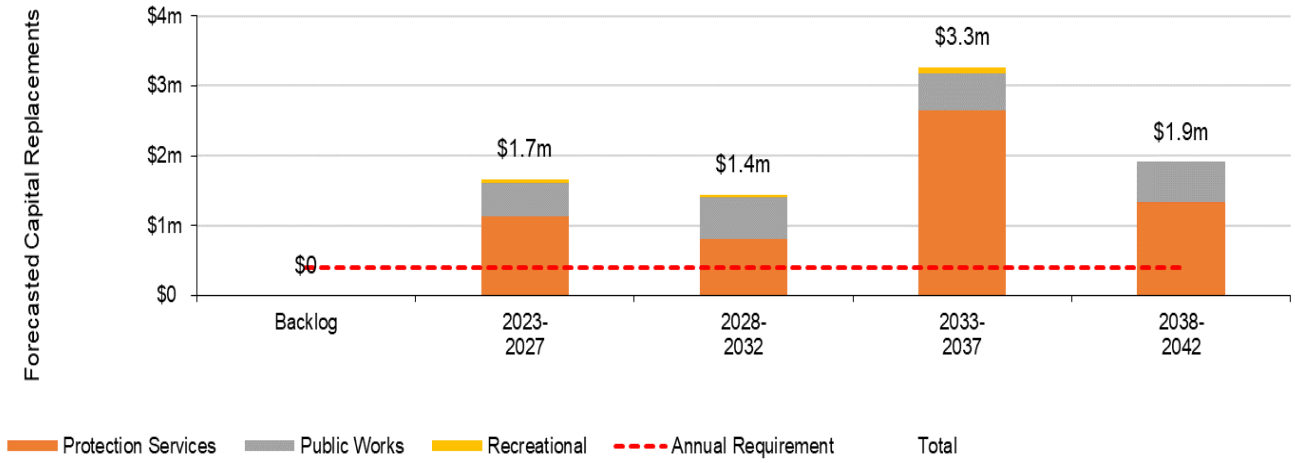
4.5.4 Lifecycle Management Strategy

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

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Maintenance tasks such as oil changes are performed according to manufacturers' recommendations. Police vehicles are equipped with winter tires, and tire replacements are scheduled during annual inspections. Geotab systems in Police vehicles provide notifications for necessary maintenance. Daily inspection sheets are completed prior to vehicle usage, with weekly inspection reports for Police vehicles. Maintenance activities are initiated based on inspection findings, addressing safety and mechanical issues identified, such as engine lights and abnormal noises.
Replacement	Smaller vehicles vehicles are replaced entirely, while larger vehicles such as construction equipment and fire apparatus' are considered for replacement based on their condition and available budget resources.
	Replacement decisions are guided by Estimated Useful Life (EUL) assessments conducted during annual inspections, in addition to repair costs and overall vehicle condition.

Forecasted Capital Requirements

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

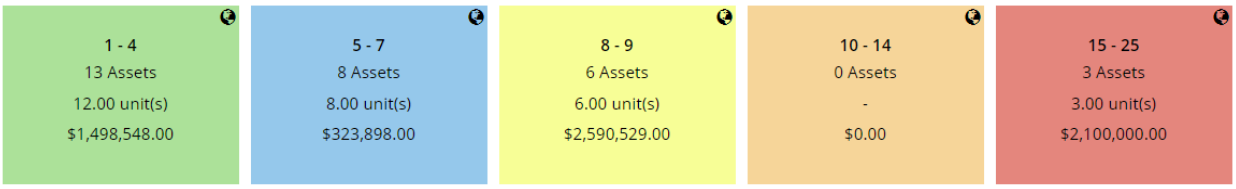


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.5.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Capital Funding Strategies
Numerous vehicles approaching or have exceeded their useful life. As vehicles age, they will require exponentially increasing O&M costs to ensure compliance with MTO standards and to function adequately. As capital budgets become more constrained, more maintenance will be postponed, which will further amplify this risk.

4.5.6 Levels of Service

The following tables identify the Town's current level of service for the vehicles. These metrics include the technical and community level of service metrics that the Town has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the types of vehicles assets that the Municipality operates and maintains	Refer to section 4.5.1
Quality	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to section 4.5.4

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Average Condition Rating	62% (Good)
	Average Risk Rating	10.33[6]
Performance	Capital reinvestment Rate	TBD

[6] Refer to section 4.5.5

4.5.7 Recommendations

Asset Inventory

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

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

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

4.6 Machinery & Equipment

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

- Recreational equipment to provide support for community services
- Public works equipment to support outdoor recreational areas
- General government equipment to support administrative staff
- Fire equipment to support the delivery of emergency services

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

4.6.1 Asset Inventory & Replacement Costs

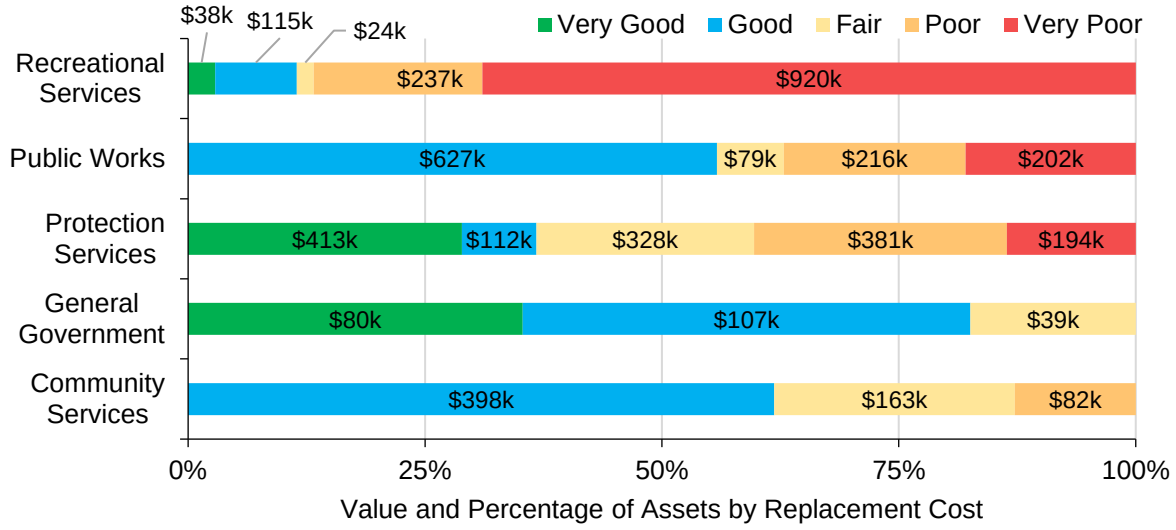
The table below includes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the Town's machinery and equipment inventory.

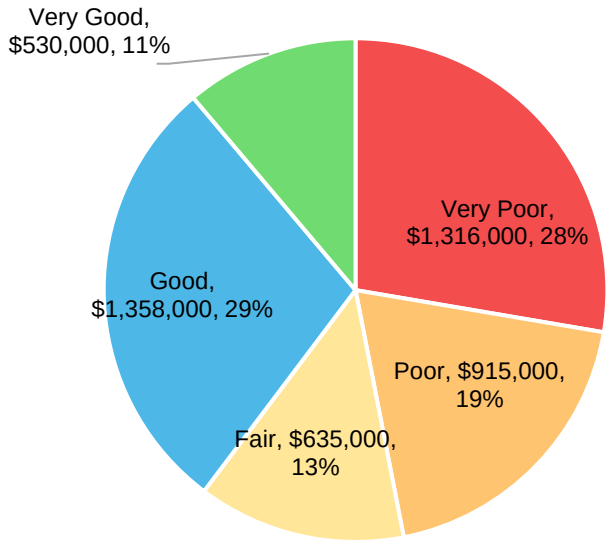
Segment	Components	Unit of Measure	Replacement Cost	Primary RC Method
Community Services	24	Assets	$643,000	CPI
General Government	3	Assets	$226,000	CPI
Protection Services	25	Assets	$1,428,000	CPI
Public Works	15	Assets	$1,123,000	CPI
Recreational Services	29	Assets	$1,334,000	CPI

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

4.6.2 Asset Condition

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





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

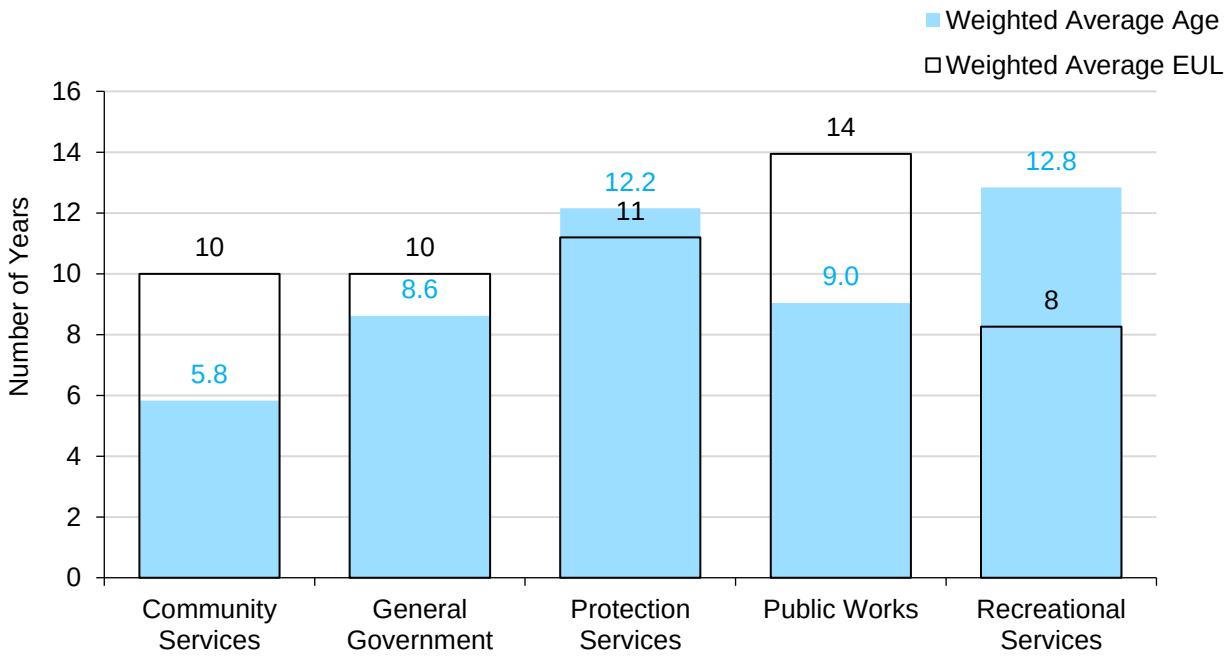
Current Approach to Condition Assessment

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

- Police equipment undergoes assessment prior to each use.
- Fire equipment is assessed daily.
- Recreational machinery & equipment is evaluated seasonally.
- Public Works machinery & equipment is assessed on an as-needed basis.
- Assessments are conducted internally and outsourced to external contractors for significant issues.

4.6.3 Estimated Useful Life & Average Age

The Estimated Useful Life for machinery and equipment assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

4.6.4 Lifecycle Management Strategy

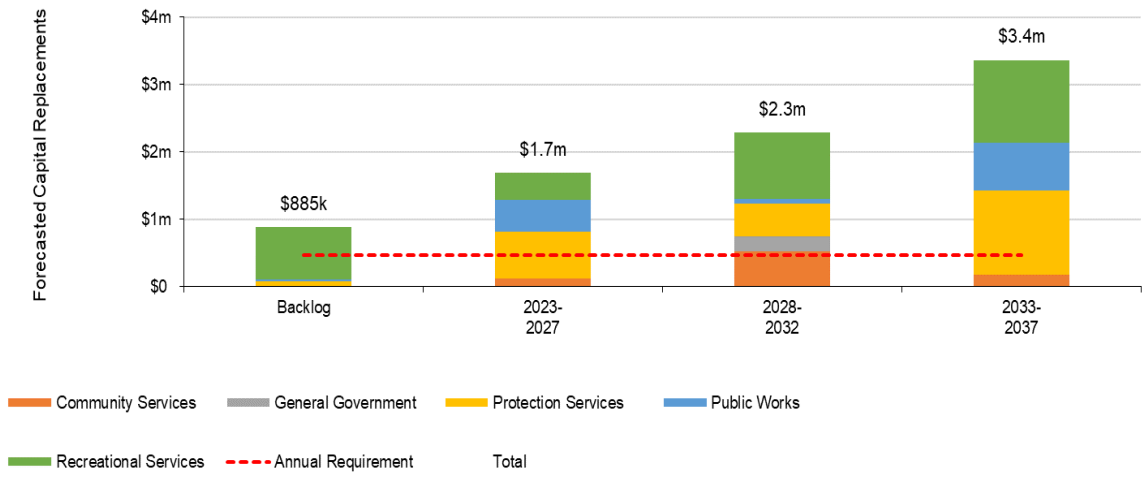
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines Smiths Falls' current lifecycle management strategy:

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Maintenance activities, such as fluid changes and blade sharpening, are performed annually. Daily or yearly inspections are conducted, with triggers including breakdowns or, for recreational equipment, seasonal changes.
Replacement	Police and Fire equipment are replaced in accordance with legislative requirements, particularly for Personal Protective Equipment (PPE), which is replaced preventatively based on mandated schedules.

Forecasted Capital Requirements

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

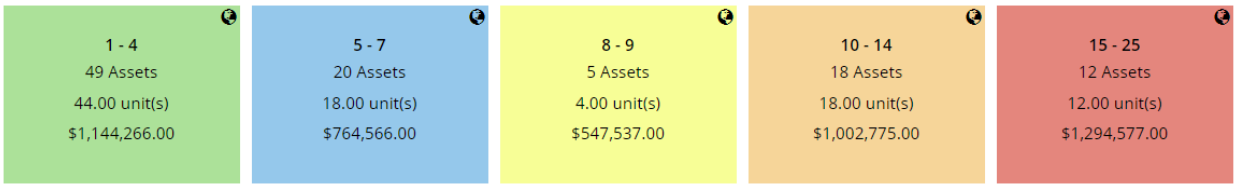


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.6.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Aging Infrastructure

A significant portion of machinery and equipment assets are approaching the end of their useful life. As equipment age, they will not perform as efficiently and may lead to increased operating costs. A related risk for the Town is the obsolescence of equipment. Trucks that are used by the Town are larger than they used to be. This is a risk because the buildings that house the equipment, as well as any attachments associated, will now have less available space. As the Town replaces the machinery and equipment with larger assets, there may be a risk of not meeting capacity or servicing requirements.

Asset Data Confidence

There is a lack of confidence in the available inventory data and condition data. Staff plan to prioritize data refinement efforts to increase the accuracy and reliability of asset data and information. Once completed, staff can confidently develop data-driven strategies to address infrastructure needs.

4.6.6 Levels of Service

The following tables identify the Town's current level of service for the machinery and equipment. These metrics include the technical and community level of service metrics that the Municipality has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the types of machinery & equipment assets that the Municipality operates and maintains	Refer to section 4.6.1
Quality	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to section 4.6.4

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Average Condition Rating	46% (Fair)
	Average Risk Rating	10.08[7]
Performance	Capital reinvestment Rate	TBD

[7] Refer to section 4.6.5

4.6.7 Recommendations

Replacement Costs

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

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

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

4.7 Land Improvements

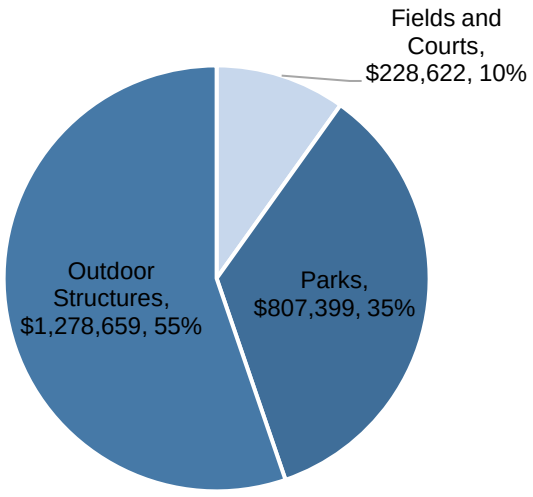
The Town of Smiths Falls owns various land improvement assets including:

- Fields and courts
- Outdoor structures
- Parks

4.7.1 Asset Inventory & Replacement Costs

The table below includes 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
Fields and Courts	6	Assets	$229,000	CPI
Outdoor Structures	20	Assets	$1,279,000	CPI
Parks	12	Assets	$807,000	CPI

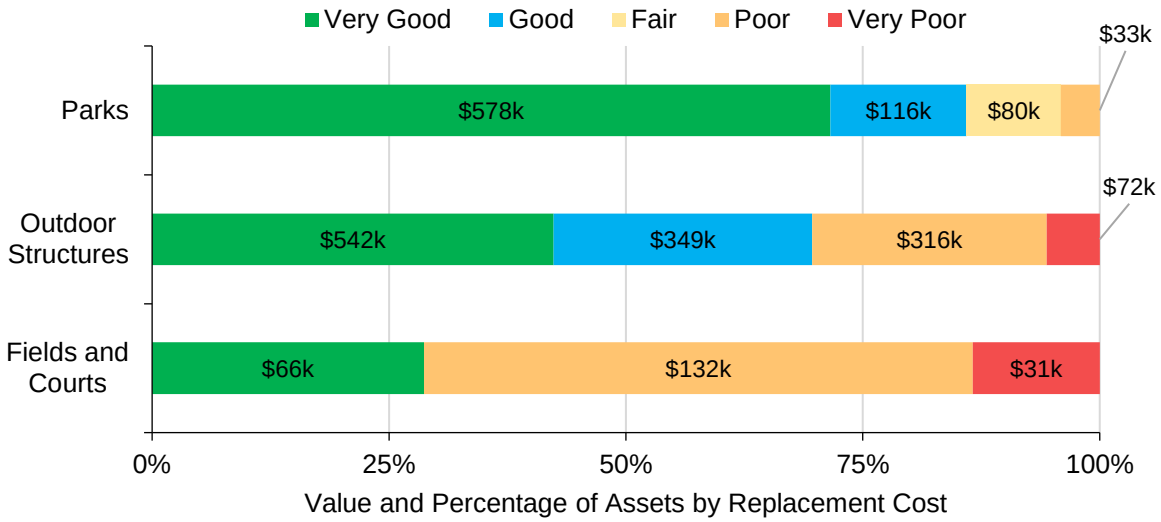


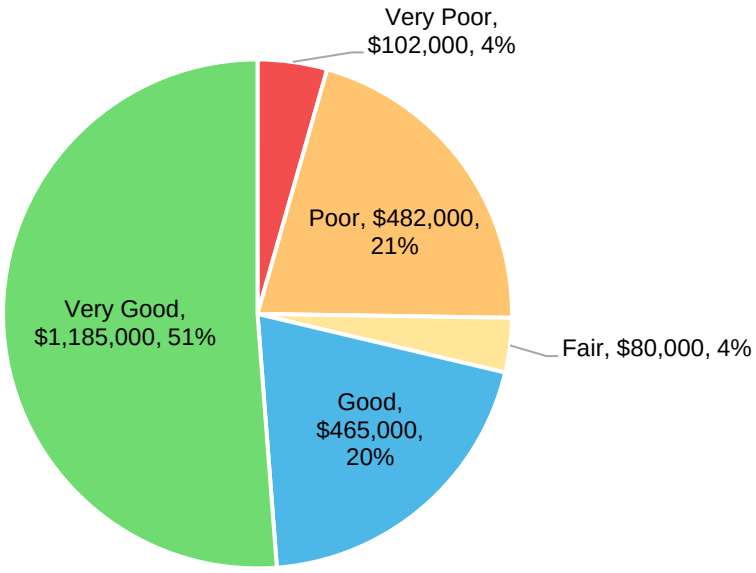
Total Current Replacement Cost: $2,314,680

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

4.7.2 Asset Condition

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





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

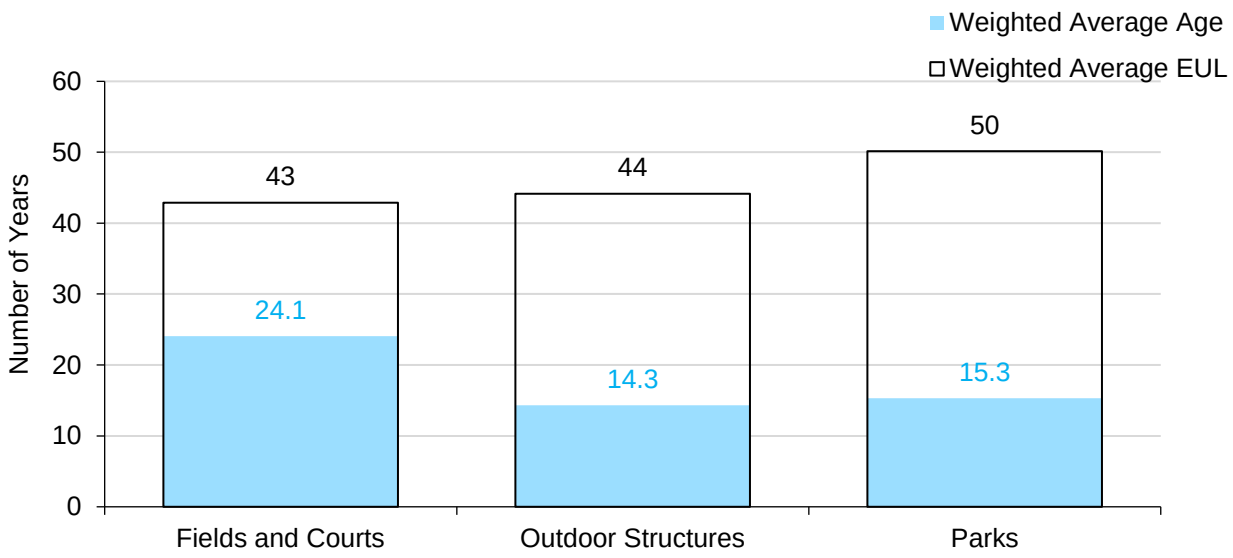
Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to 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:

- Land improvements and parks undergo annual assessments in the spring by internal staff, as per CSA standards. These yearly evaluations determine priority areas for improvement based on the current condition.

4.7.3 Estimated Useful Life & Average Age

The Estimated Useful Life for land improvement assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

4.7.4 Lifecycle Management Strategy

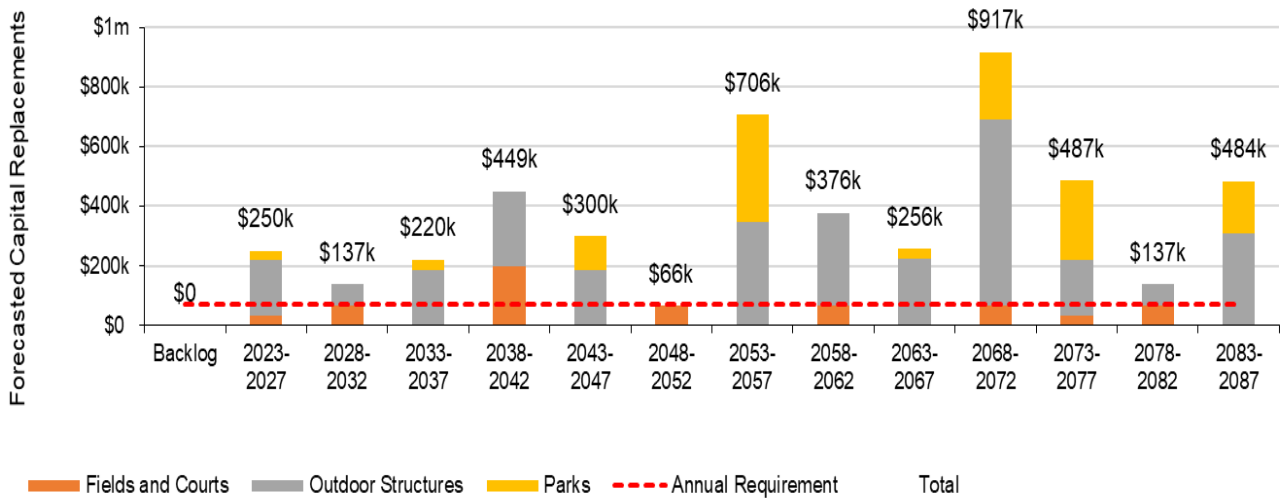
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Regular inspections and minor repairs are conducted weekly, and vegetation management activities are performed to upkeep the areas. Maintenance actions are prompted by customer complaints and staff observations.
Rehabilitation /Replacement	Rehabilitation occurs as needed, particularly when regular safe use of the area is compromised.
	Replacement follows industry standards, with priority given to assets with the highest usage and those approaching the end of their life cycle.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The graph identifies capital requirements over the next 65 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement.

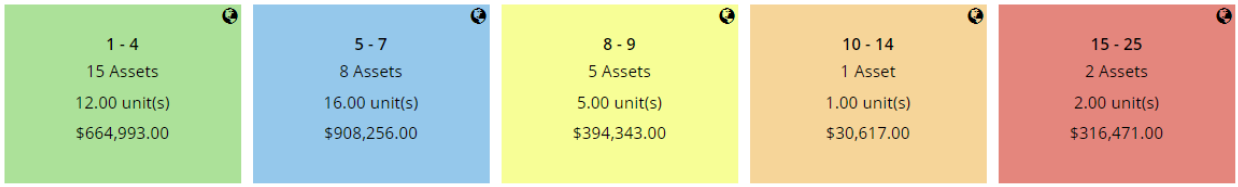


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.7.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Climate Change & Extreme Weather

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

Regulatory Compliance & Aging Infrastructure

Playground structures require safety compliance, monitored through the CSA inspections. A concern for the Town is aging assets, risking playground elements not meeting safety requirements. Although this is not a concern currently, it may become critical over time if playground assets are not managed proactively.

4.7.6 Levels of Service

The following tables identify the Town's current level of service for land improvements. These metrics include the technical and community level of service metrics that the Town has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the types of land improvement assets that the Municipality operates and maintains	Refer to section 4.7.1
Quality	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Refer to section 4.7.4

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	Average Condition Rating	69% (Good)
	Average Risk Rating	7.14[8]
Performance	Capital reinvestment Rate	TBD

[8] Refer to section 4.7.5

4.7.7 Recommendations

Asset Inventory

- Continue to review and update the Town’s asset register on a scheduled basis to ensure that replacement costs and condition scores are up to date.

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in the framework.
- Work towards identifying desired levels of service and identify the strategies that are required to close any gaps between current and desired levels of service.

5 Analysis of Rate-funded Assets

Key Insights

- Rate-funded assets are valued at $169.9 million
- 66% of rate-funded assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for rate-funded assets is approximately $4.5 million

5.1 Water Network

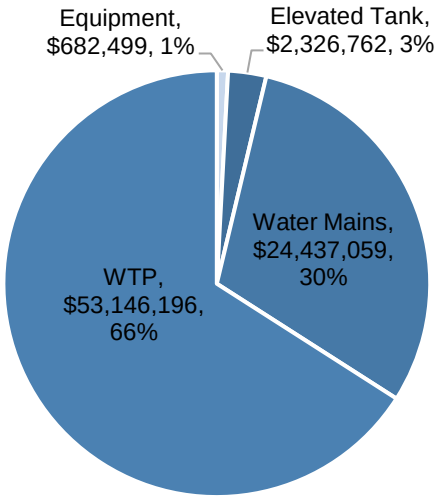
The Town manages an extensive water network consisting of various assets including:

- Elevated tanks
- Water equipment
- Watermains
- Water treatment plant

5.1.1 Asset Inventory & Replacement Costs

The table below includes 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
Elevated Tank	6	Assets	$2,327,000	CPI
Equipment	23	Assets	$682,000	CPI
Water Mains	61,102	Meters	$24,437,000	Cost per unit
WTP	83	Assets	$53,146,000	CPI

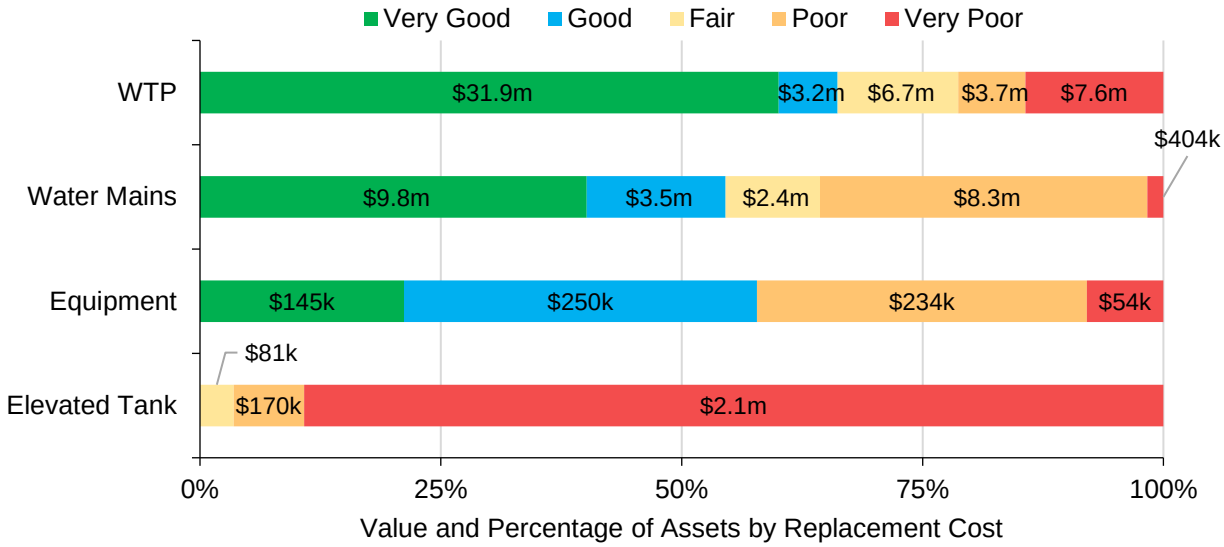


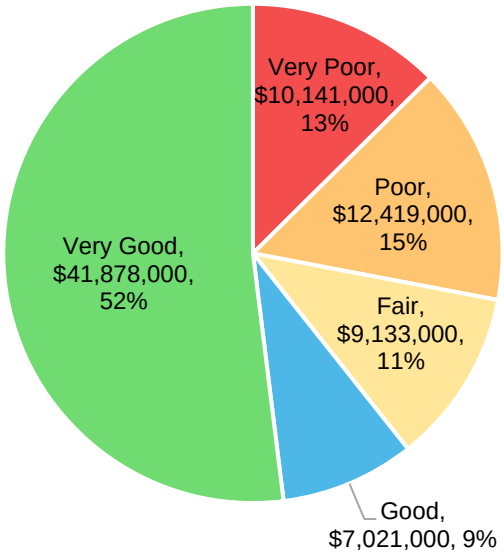
Total Current Replacement Cost: $80,592,516

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

5.1.2 Asset Condition

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





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

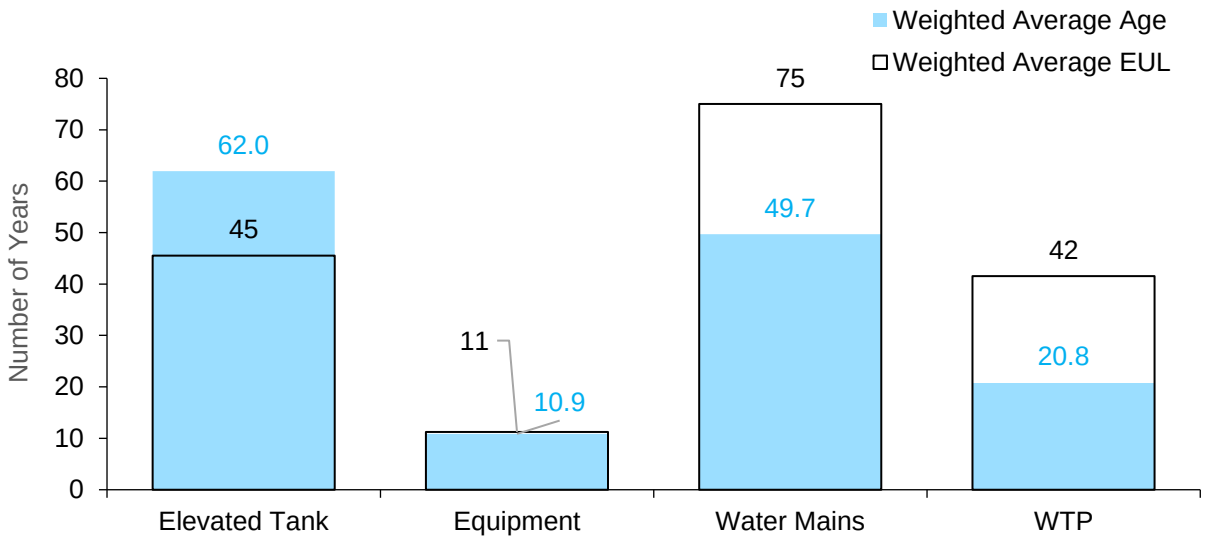
Current Approach to Condition Assessment

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 Smiths Falls' current approach:

- The Town is currently in the process of establishing a comprehensive strategy for assessing the condition of its water network infrastructure. This strategy will be finalized following updates to the Official Plan (2025) and long-term infrastructure planning initiatives. The aim is to develop a systematic approach to evaluating the condition of water mains and associated infrastructure to ensure reliable service delivery and identify necessary upgrades or replacements.

5.1.3 Estimated Useful Life & Average Age

The Estimated Useful Life for water network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

5.1.4 Lifecycle Management Strategy

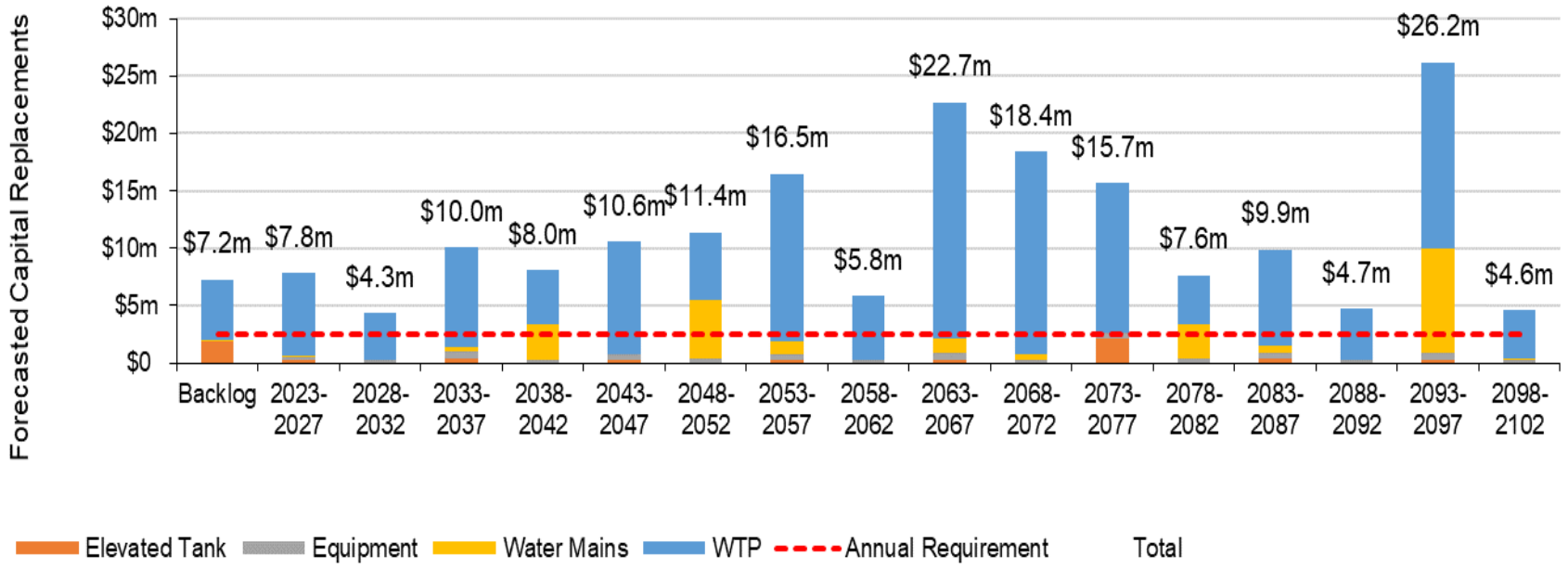
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines Smiths Falls' current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance activities for water mains and supporting infrastructure include regular inspections, flushing operations, minor repairs, valve maintenance, and leak detection programs.
	Maintenance efforts are triggered by visual inspections, flow increases at water treatment facilities, and customer-reported issues.
Rehabilitation & Replacement	Rehabilitation activities focus on structural repairs, system upgrades, and replacement of outdated components. These initiatives are typically initiated based on historical performance data and recommendations from maintenance reports.
	Assets that are nearing the end of their service life or experiencing frequent failures are prioritized for replacement. Replacement decisions are informed by the criticality of each asset to the overall functionality of the water distribution system.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Town should allocate towards funding rehabilitation and replacement needs. The graph identifies capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement.

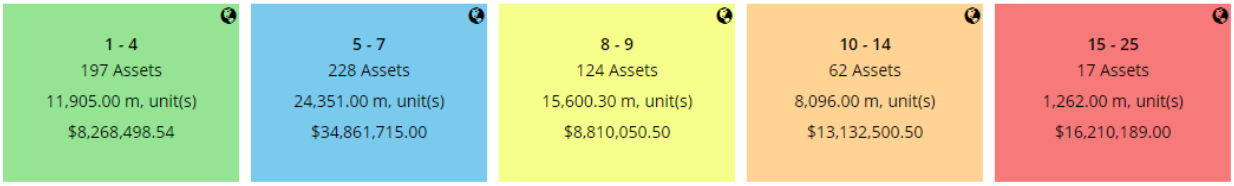


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

5.1.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Lifecycle Management Strategies

The current lifecycle management strategy is considered more reactive than proactive. It is a challenge to find the right balance between maintenance, capital rehabilitation, and reconstruction. The Town is enhancing its lifecycle management strategies to adopt a more proactive approach in optimizing asset performance and reducing lifecycle costs. This includes improving data-driven decision-making processes and implementing best practices to extend the lifespan of water network infrastructure.

Staff Resources & Capacity

Challenges related to recruiting and retaining licensed operators for water system management and operation may impact service delivery and operational efficiency. The Town focuses on workforce development and training programs to ensure a skilled and reliable workforce capable of managing and maintaining the water network effectively.

5.1.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	There are 3,558 connections: 3,228 Residential, 299 Commercial, and 31 in the neighboring Town of Montague See Appendix B
	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	See Appendix B
Reliability	Description of boil water advisories and service interruptions	Smiths Falls experienced no boil water advisories in 2022. However, water service interruptions may occur due to main breaks, maintenance activities or reconstruction projects. Staff tend to these interruptions and inform residents in a timely manner.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% Of properties connected to the municipal water system	99%
	% Of properties where fire flow is available	100%[9]
Reliability	# Of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0
	# Of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	29:3558[10]
Performance	Capital reinvestment rate	TBD

[9] 100% of the properties connected to the municipal water system have fire flow protection.

[10] While the Town does not currently track connection days where water is not available, it does monitor how many watermain breaks there are. In 2022, there were 29 water main breaks. 29/3558 (connection) = 0.8%. Going forward, the Town will document the number of connection days per year

5.1.7 Recommendations

Asset Inventory

- Continue to gather accurate replacement costs and update the asset register on a regular basis to ensure the accuracy of capital projections.

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

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

5.2 Sanitary Sewer Network

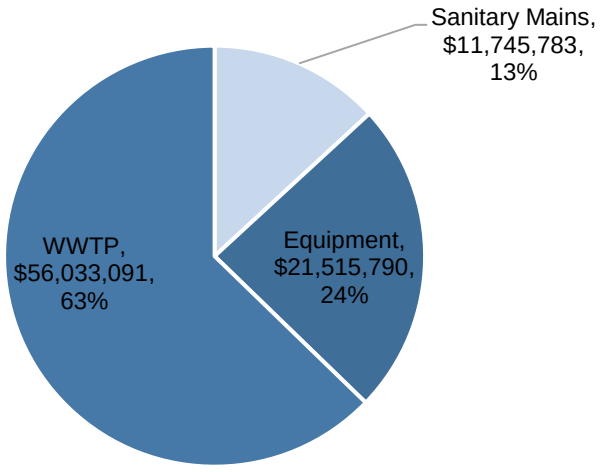
The Town manages an extensive sanitary sewer network consisting of various assets including:

- Sanitary sewer equipment
- Sanitary mains
- Wastewater treatment plant

5.2.1 Asset Inventory & Replacement Costs

The table below includes 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 (Components)	Unit of Measure	Replacement Cost	Primary RC Method
Equipment	40	Assets	$21,516,000	CPI
Sanitary Mains	26,725	Meters	$11,746,000	Cost per unit
WWTP	59	Assets	$56,033,000	CPI

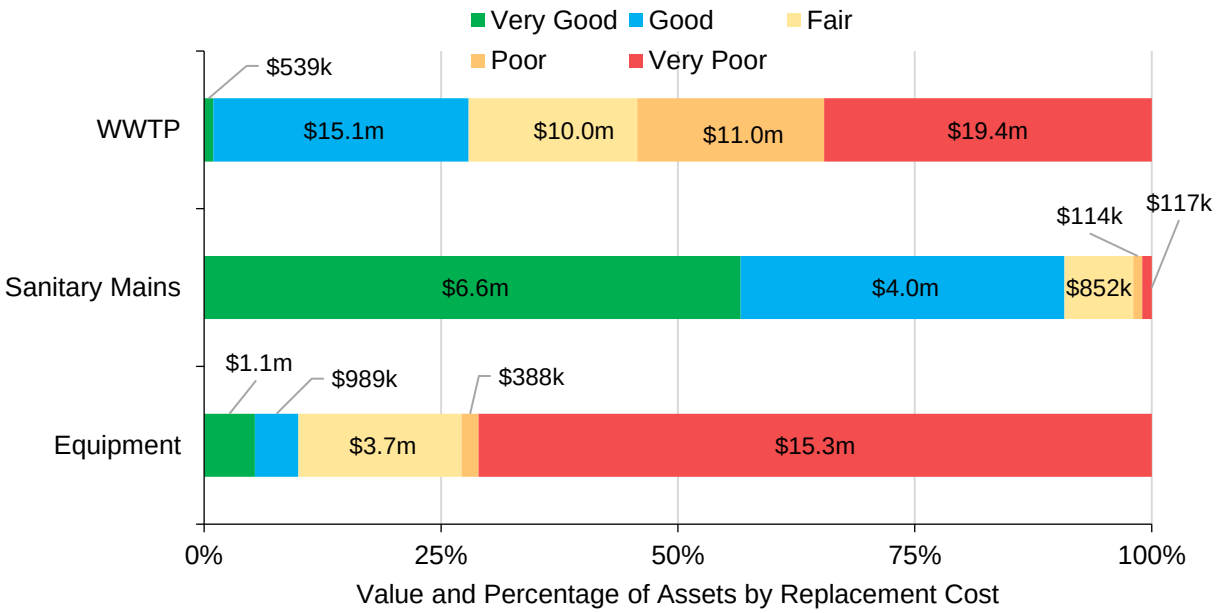


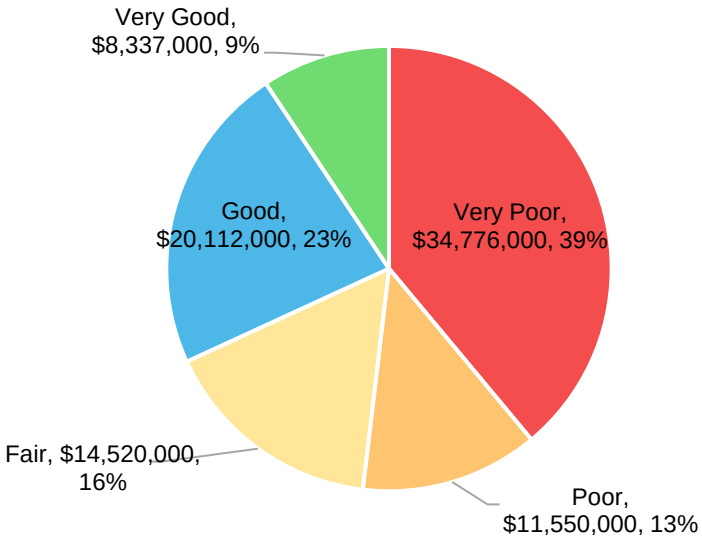
Total Current Replacement Cost: $89,294,664

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

5.2.2 Asset Condition

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.





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

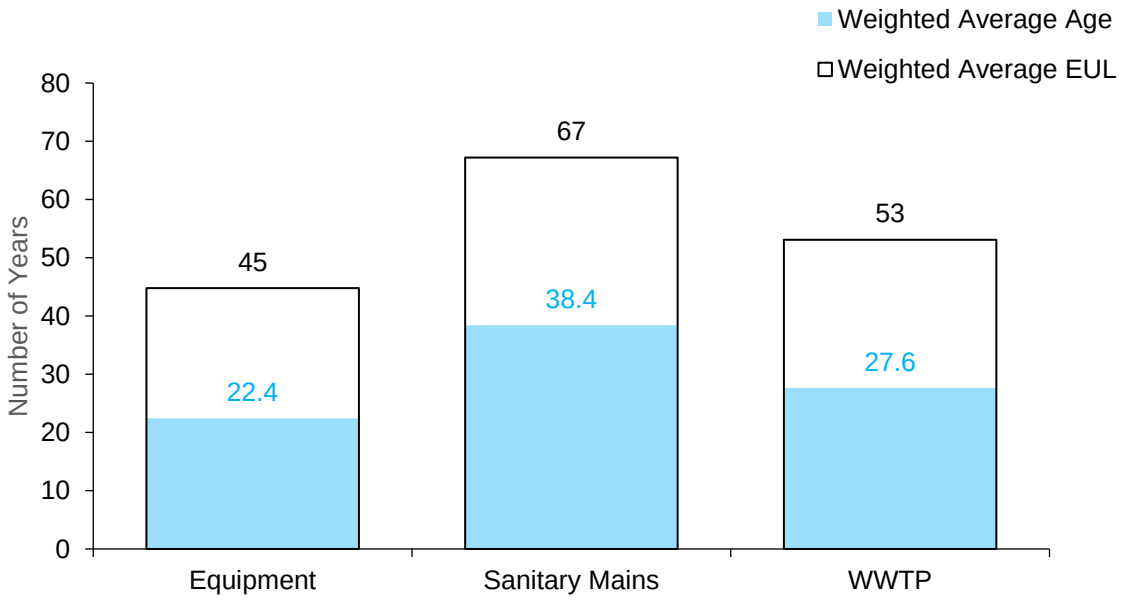
Current Approach to Condition Assessment

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 Smiths Falls' current approach:

- The Town implements an annual cleaning and CCTV inspection program for its Sanitary Sewer network, rotating through different areas of the community every 5 years. These assessments are conducted by external contractors to evaluate the structural integrity and operational condition of sewer mains and associated infrastructure.

5.2.3 Estimated Useful Life & Average Age

The Estimated Useful Life for sanitary sewer network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.



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

5.2.4 Lifecycle Management Strategy

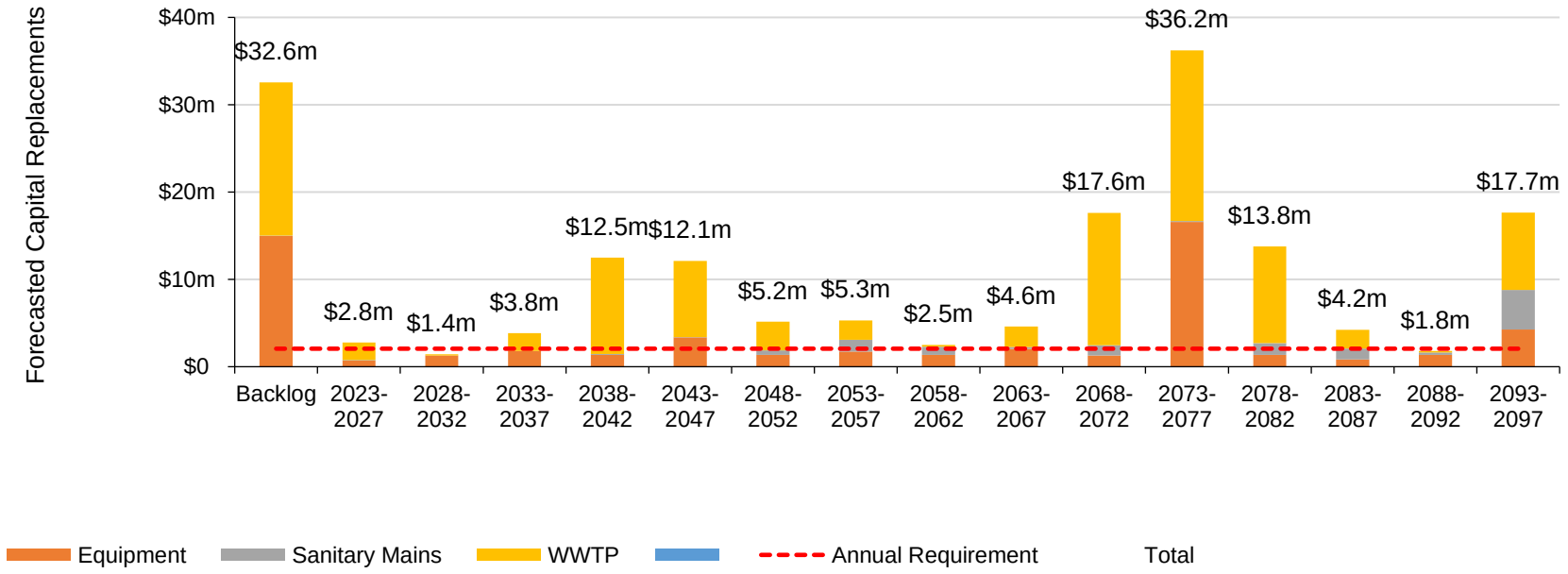
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines Smiths Falls' current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Routine maintenance activities include regular inspections of manholes and pumping stations, particularly during inclement weather conditions that may impact system performance. Maintenance efforts focus on preventing sewer surcharges and backups into properties, with daily inspections conducted in designated quadrants of the community to identify and address potential issues promptly.
Rehabilitation/ Replacement	Rehabilitation activities encompass trenchless relining, structural repairs, and upgrades to outdated systems. These initiatives are initiated based on findings from CCTV inspections, visual assessments, and historical performance data. The Town prioritizes rehabilitation projects to enhance system reliability, reduce maintenance costs, and extend the operational lifespan of sewer infrastructure.
	Assets approaching the end of their service life or experiencing frequent failures are prioritized for replacement. Replacement decisions are informed by condition assessments and the criticality of each asset to the overall functionality of the Sanitary Sewer collection and treatment system.

Forecasted Capital Requirements

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

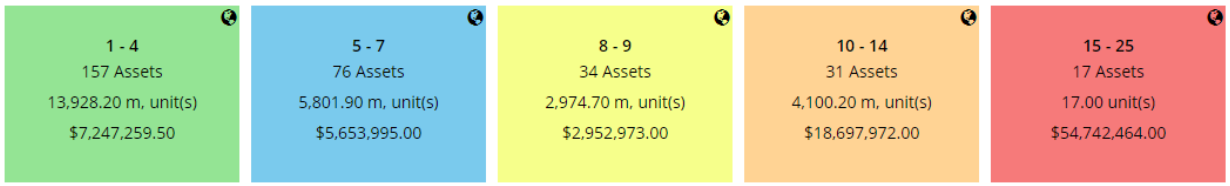


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

5.2.5 Risk & Criticality

Risk Matrix

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



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

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

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

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

Risks to Current Asset Management Strategies

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

Growth

The Town's capacity to accommodate future population growth and development through its Sanitary Sewer infrastructure is assessed as part of ongoing updates to the Official Plan and infrastructure planning initiatives. This includes evaluating the adequacy of existing infrastructure and identifying necessary upgrades or expansions to support anticipated growth and development within the community.

Infrastructure Reinvestment

Current funding levels for Sanitary Sewer infrastructure maintenance and replacement may not fully meet long-term investment requirements. The Town actively seeks external funding opportunities, including grants and partnerships, to support infrastructure reinvestment initiatives and address funding gaps.

Climate Change & Extreme Weather Events

Climate change and extreme weather events significantly impact Sanitary Sewer infrastructure. The impact of climate change, such as intense rainfall events and temperature fluctuations, poses risks to Sanitary Sewer infrastructure, potentially leading to system overflows and environmental impacts. The Town conducts hydraulic analyses and vulnerability assessments to identify and mitigate risks associated with climate variability and extreme weather conditions.

5.2.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal Sanitary Sewer system	See Appendix B
Reliability	Description of how combined sewers in the municipal Sanitary Sewer system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	Combined Sewer Overflows (CSO) in Smiths Falls is designed in such a way to act as a relief valve for the system preventing backups in the North End of Town. There is currently one Combined Sewer Overflow (CSO) point within the Town, located on Old Mill Road.
	Description of the frequency and volume of overflows in combined sewers in the municipal Sanitary Sewer system that occur in habitable areas or beaches	Overflow is monitored for flow, duration, and volume, with information being part of the Town's daily report. An overflow event would trigger an alarm and alert an operator to perform an inspection and sampling. Overflow is discharged to a ditch and into the Rideau River.
	Description of how storm water can get into sanitary sewers in the municipal Sanitary Sewer system, causing sewage to overflow	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,

Service Attribute	Qualitative Description	Current LOS (2022)
	into streets or backup into homes	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.
	Description of how sanitary sewers in the municipal Sanitary Sewer system are designed to be resilient to storm infiltration	Smiths Falls follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers. Certain sections of the current system are susceptible to inflow and infiltration issues. To address this, they utilize SDR-PVC pipes with gasketed joints, effectively preventing infiltration. Furthermore, all sections of the manholes are sealed to mitigate any potential infiltration concerns.
	Description of the effluent that is discharged from sewage treatment plants in the municipal Sanitary Sewer system	Effluent refers to water pollution that is discharged from a Sanitary Sewer treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal Sanitary Sewer treatment plants.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% Of properties connected to the municipal Sanitary Sewer system	99%
Reliability	# Of events per year where combined sewer flow in the municipal Sanitary Sewer system exceeds system capacity compared to the total number of properties connected to the municipal Sanitary Sewer system	4:3557[11]
	# Of connection-days per year having Sanitary Sewer backups compared to the total number of properties connected to the municipal Sanitary Sewer system	21:3557[12]
	# Of effluent violations per year due to Sanitary Sewer discharge compared to the total number of properties connected to the municipal Sanitary Sewer system	21:3557

[11] There were 4 CSO events, with a total duration of 3.2 hours.

[12] While the Town does not currently track connection days, it does track the number of events. In 2022, there were 21 CSO events. 21/3557 = 0.6%. Going forward, the Town will document the number of connection days per year

5.2.7 Recommendations

Asset Inventory

- Continue to gather accurate replacement costs and update the asset register on a regular basis to ensure the accuracy of capital projections.
- It is highly recommended that the Town review and update assets which have been identified as backlog

Condition Assessment Strategies

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

Risk Management Strategies

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

Lifecycle Management Strategies

- Evaluate the efficacy of Smiths Falls' lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk.

Levels of Service

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

6 Impacts of Growth

Key Insights

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

- Population and employment growth is expected over the next 20 years

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

6.1 Description of Growth Assumptions

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

6.1.1 Smiths Falls Official Plan (2014)

The Official Plan of the Town of Smiths Falls was adopted in October 2014. The Official Plan is the cornerstone document essential for the management of future growth, development, and change in Smiths Falls. It provides the policy framework which will guide land use decisions within the Town until the year 2034. The Town estimated growth capacity for a population of approximately 10,100, the development of up to 250 new jobs, and up to 517 new dwelling units through 2034. Since the 2014 forecast, the Town has experienced more than 750 housing starts and significant expansions in industrial and commercial development since 2014.

The Town plans to focus on new growth and intensification of land uses in 'Targeted Growth Areas', while preserving the general character and density of other areas of the Town that are predominantly established detached dwelling neighbourhoods. This approach focuses on new growth into relatively compact and centralized locations, thereby reducing fiscal and environmental impacts, fostering walkability and preserving the character of Smiths Falls' established neighbourhoods.

Historically, commercial, and industrial areas were segregated from residential areas, with the exception of the downtown area. Land use policy promotes a gradual shift away from the historic pattern of land use separations and allows for more mixing of uses, particularly residential and commercial areas. In particular, lands adjacent to a possible commuter rail station are planned for re-development into a mixed-used area promoting housing and development.

The Town is currently in the process of updating its Official Plan. The updated plan will guide the growth and development of the town for the next 25 years. The proposed updates place importance on five major growth and improvement initiatives including: Downtown Revitalization, Housing, Sustainability, Community Spaces and Transportation & Connections.

6.1.2 Land Needs Analysis Report (2023)

In 2023, Dillon Consulting Ltd prepared a Land Needs Analysis report, incorporating a forecast of population, employment, and housing growth developed by Metroeconomics Inc. The results of the report will be used to inform the Town's update to its Official Plan.

The report projects significant growth in population, employment, and housing. As of 2021, Smiths Falls had a population of approximately 9,500 and 5,300 jobs. Recent investments, notably in Canopy Growth Corporation, and increased remote work due to COVID-19 have rejuvenated the town's growth, which had previously stagnated. The town's economic base includes key sectors like manufacturing, health services, and tourism, with economic base jobs constituting 44% of the total workforce.

By 2046, Smiths Falls is projected to see its population rise to around 13,100, an increase of 3,600 people, and its employment to grow by 1,800 jobs, reaching 7,100. Notable job growth is anticipated in sectors such as health care, education, and tourism. Housing demand will also rise, with a forecast need for 1,380 new units, expanding from 4,310 in 2021 to 5,690 by 2046. The housing forecast reflects a shift towards higher density housing, including more townhouses and apartments, in response to changing market trends and demographic shifts. This growth will require careful planning and development to meet the evolving needs of the community.

6.2 Impact of Growth on Lifecycle Activities

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

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

7 Appendices

Key Insights

- Appendix A identifies projected 10-year capital requirements for each asset category
- Appendix B includes several maps that have been used to visualize the current level of service
- Appendix C provides additional guidance on the development of a condition assessment program

Appendix A: 10-Year Capital Requirements

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

Road Network

Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Curbs	$63k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Paved Roads	$1.4m	$5	$4.4m	$574k	$248	$6.3m	$0	$4.0m	$0	$38k	$0
Sidewalks	$92k	$115k	$0	$21k	$0	$0	$0	$0	$67k	$0	$0
Signs	$14k	$0	$48k	$0	$0	$102k	$0	$0	$371k	$0	$0
Street Lights	$400k	$0	$0	$121k	$0	$0	$104k	$0	$0	$52k	$0
Traffic Lights	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$115k	**$4.5m**	**$716k**	**$248**	**$6.4m**	**$104k**	**$4.0m**	**$439k**	**$90k**	**$0**	**$115k**

Bridges

Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Bridges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pedestrian Bridges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Storm Network											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Combined Sewer Mains	$8.3m	$77k	$64k	$0	$389k	$0	$0	$402k	$76k	$35k	$13k
Storm Mains	$32k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$8.4m	**$77k**	**$64k**	**$0**	**$389k**	**$0**	**$0**	**$402k**	**$76k**	**$35k**	**$13k**

Facilities											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Airport	$215k	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Community Services	$38k	$0	$699k	$31k	$385k	$1.9m	$323k	$586k	$104k	$50k	$0
General Government	$0	$0	$0	$0	$0	$0	$0	$38k	$337k	$9k	$0
Protection Services	$665k	$0	$0	$0	$0	$26k	$0	$887k	$195k	$0	$0
Public Works	$43k	$0	$58k	$0	$0	$39k	$0	$91k	$0	$0	$0
Recreational Services	$546k	$801k	$185k	$53k	$587k	$10k	$328k	$67k	$97k	$0	$0
	$1.5m	**$801k**	**$941k**	**$84k**	**$971k**	**$2.0m**	**$650k**	**$1.7m**	**$733k**	**$59k**	**$0**

Land Improvements											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Fields and Courts	$0	$0	$31k	$0	$0	$0	$0	$0	$0	$66k	$0
Outdoor Structures	$0	$0	$0	$186k	$0	$0	$0	$72k	$0	$0	$0
Parks	$0	$0	$0	$33k	$0	$0	$0	$0	$0	$0	$0
	$0	**$0**	**$31k**	**$220k**	**$0**	**$0**	**$0**	**$72k**	**$0**	**$66k**	**$0**

Machinery & Equipment											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Community Services	$0	$0	$0	$0	$82k	$42k	$121k	$398k	$0	$0	$0
General Government	$0	$0	$0	$0	$0	$0	$39k	$0	$107k	$0	$80k
Protection Services	$85k	$0	$109k	$0	$381k	$199k	$130k	$0	$112k	$101k	$139k
Public Works	$17k	$0	$185k	$0	$46k	$249k	$0	$76k	$6k	$0	$0
Recreational Services	$784k	$136k	$30k	$193k	$39k	$0	$30k	$99k	$785k	$30k	$32k
	$885k	**$136k**	**$324k**	**$193k**	**$547k**	**$491k**	**$320k**	**$572k**	**$1.0m**	**$131k**	**$251k**

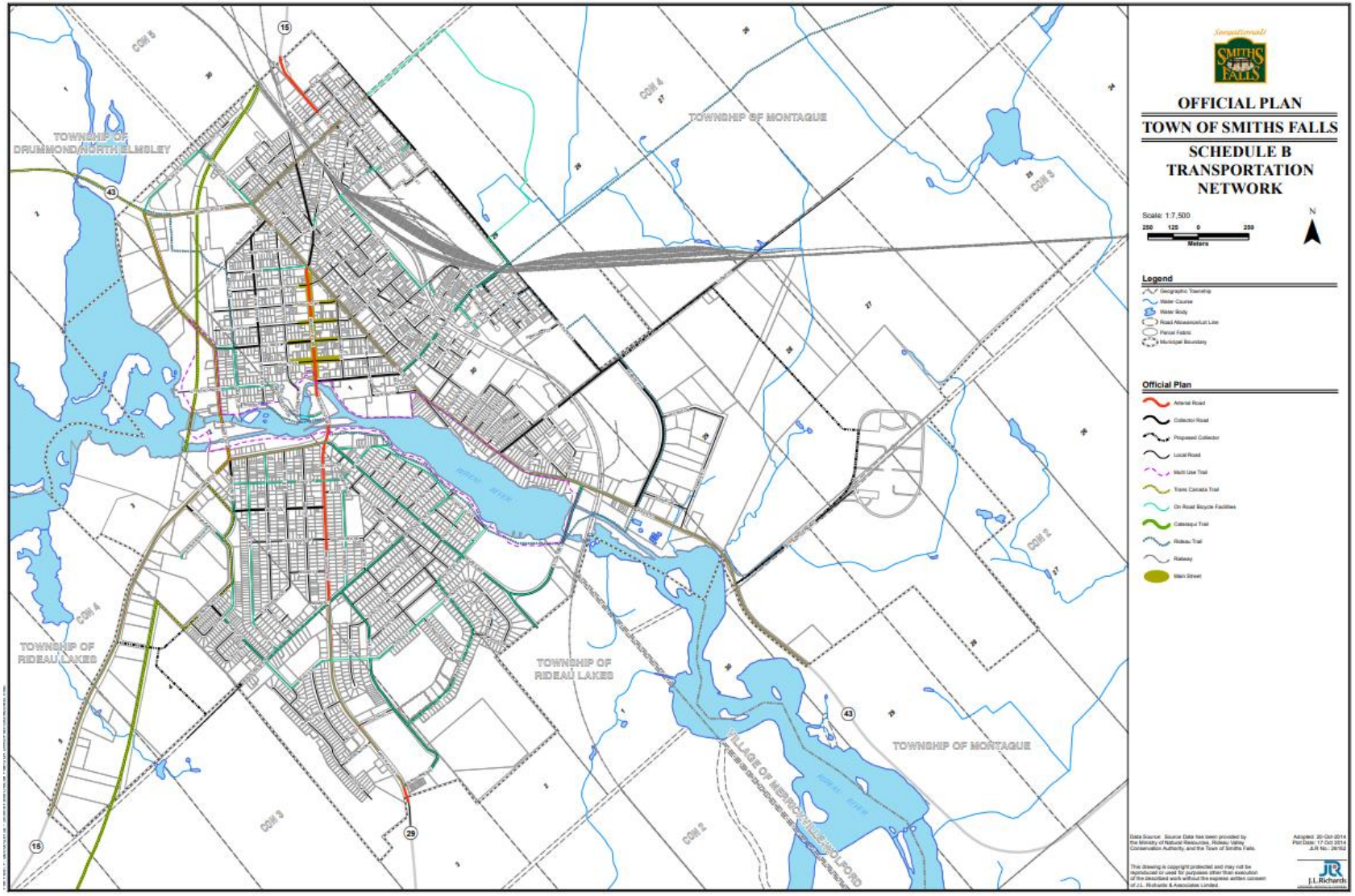
Vehicles											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Protection Services	$0	$0	$1.0m	$0	$89k	$0	$54k	$514k	$194k	$0	$47k
Public Works	$0	$0	$0	$37k	$138k	$299k	$0	$0	$206k	$396k	$0
Recreational	$0	$0	$0	$0	$0	$55k	$35k	$0	$0	$0	$0
	$0	**$0**	**$1.0m**	**$37k**	**$227k**	**$353k**	**$89k**	**$514k**	**$400k**	**$396k**	**$47k**

Water Network											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Elevated Tank	$1.9m	$85k	$83k	$0	$13k	$81k	$0	$0	$0	$0	$0
Equipment	$13k	$7k	$34k	$58k	$176k	$0	$0	$59k	$22k	$145k	$0
Water Mains	$20k	$0	$0	$0	$68k	$27k	$0	$0	$0	$0	$0
WTP	$5.3m	$32k	$2.3m	$0	$2.1m	$2.7m	$2.1m	$1.8m	$0	$299k	$0
	$7.2m	**$124k**	**$2.4m**	**$58k**	**$2.4m**	**$2.8m**	**$2.1m**	**$1.8m**	**$22k**	**$443k**	**$0**

Sanitary Sewer Network											
Asset Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Equipment	$15.0m	$205k	$71k	$16k	$328k	$60k	$823k	$369k	$23k	$51k	$0
Pumping Stations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sanitary Mains	$32k	$85k	$0	$0	$0	$0	$0	$0	$0	$0	$0
WWTP	$17.5m	$76k	$1.7m	$13k	$170k	$0	$39k	$129k	$0	$0	$0
	$32.6m	**$365k**	**$1.8m**	**$29k**	**$498k**	**$60k**	**$862k**	**$498k**	**$23k**	**$51k**	**$0**

Appendix B: Level of Service Maps

Road Network Map

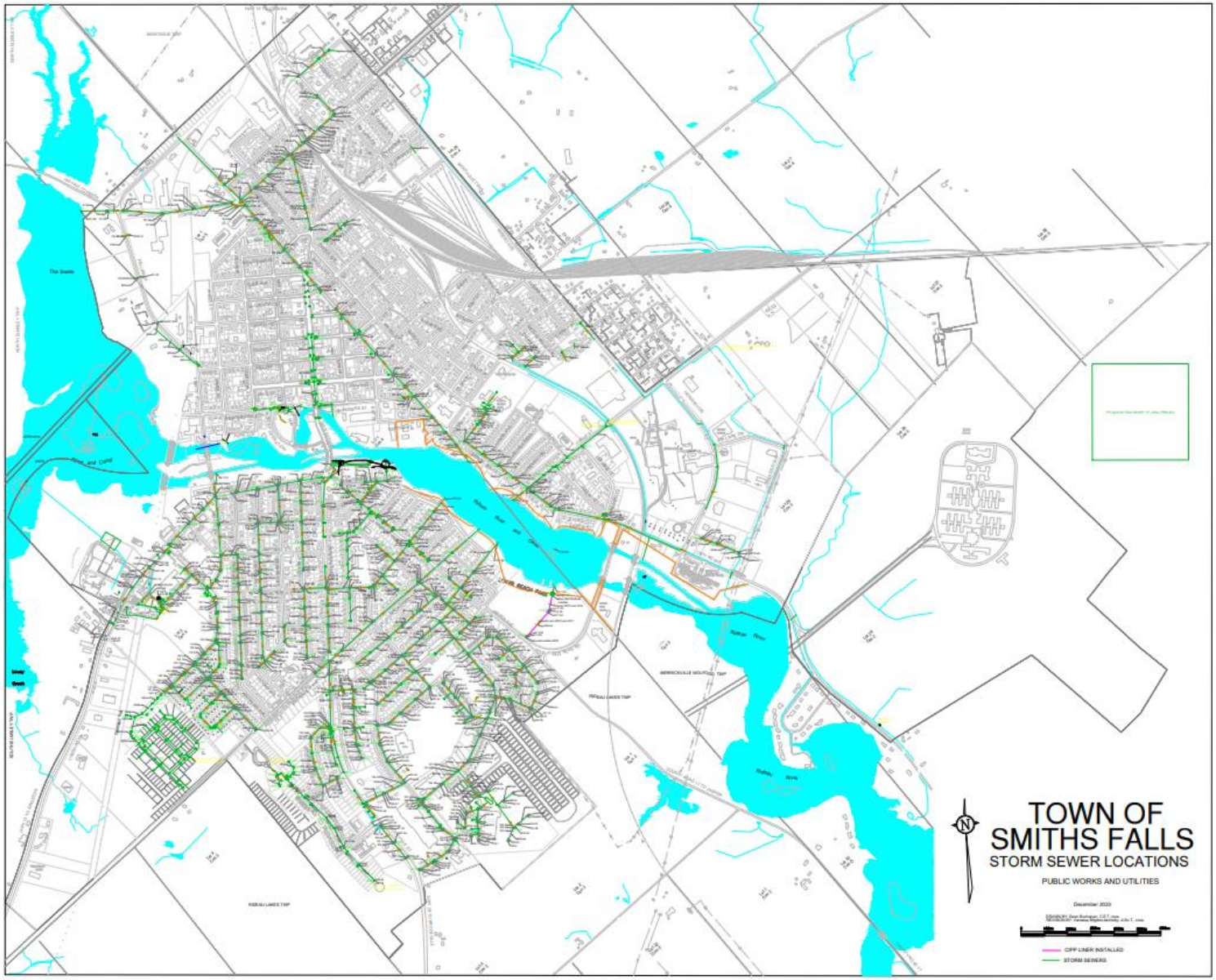


Bridge Images

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

Beckwith Street New Lock Overpass Bridge (BCI = 67.2)

Storm Network Maps



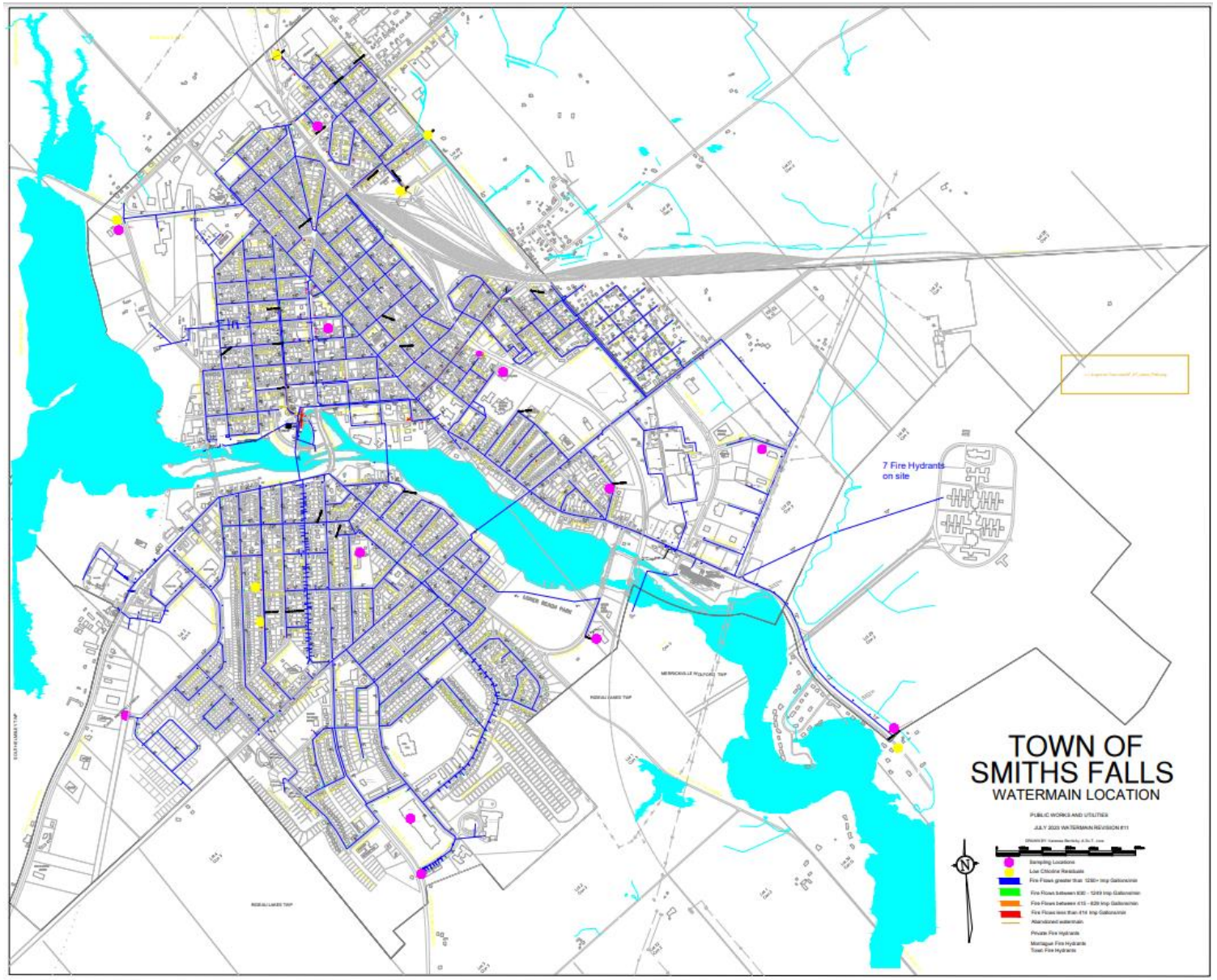
RVCA Regulations Mapping

7/11/2022, 3:12:45 PM
RVCA Regulatory Flood (100yr)
Floodplain
Lot
Township Municipal

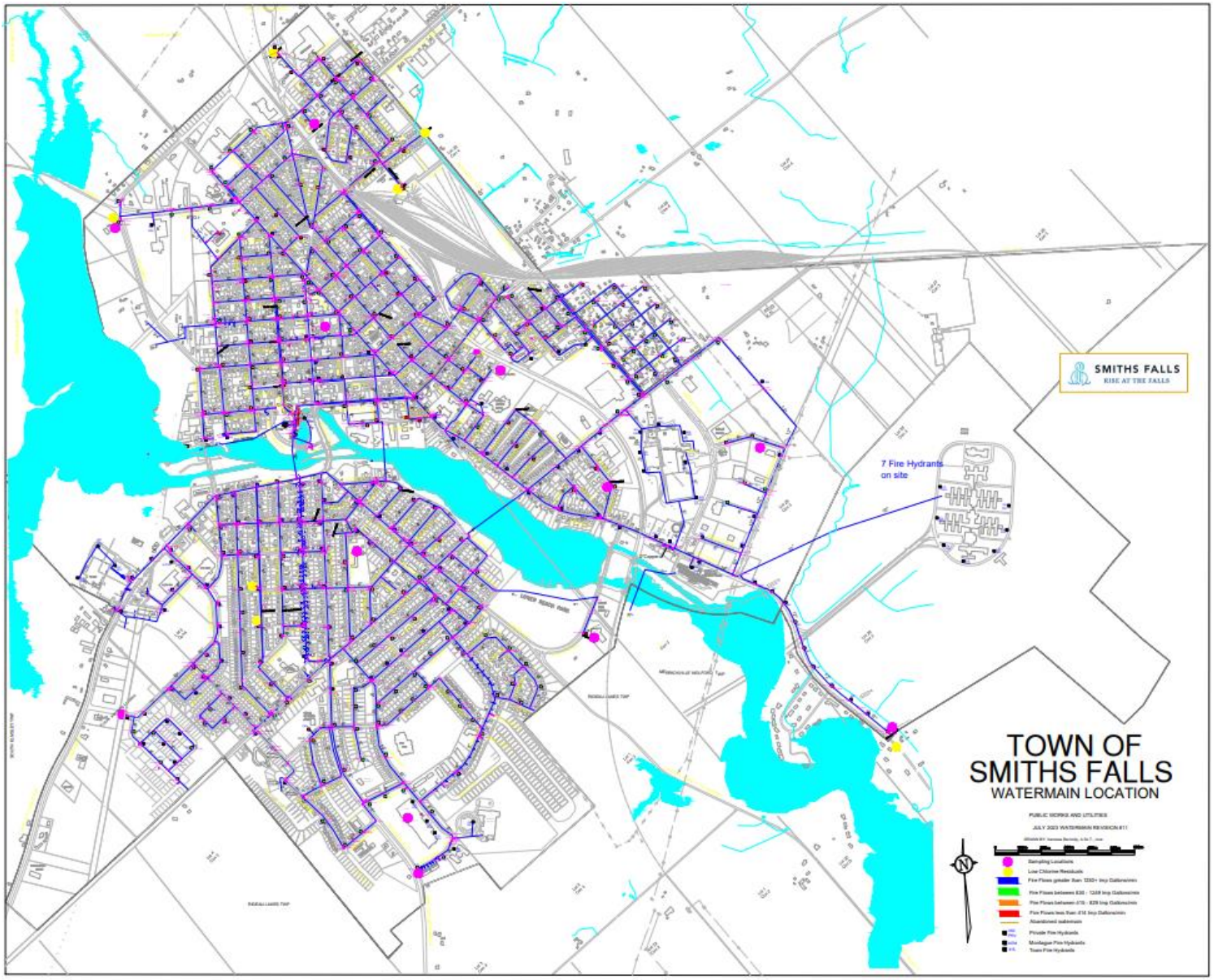
1:36,112
0 0.3 0.6 1.2 mi
0 0.5 1 2 km

RVCA Regulations Mapping - Online Mapping
Rideau Valley Conservation Authority (RVCA)

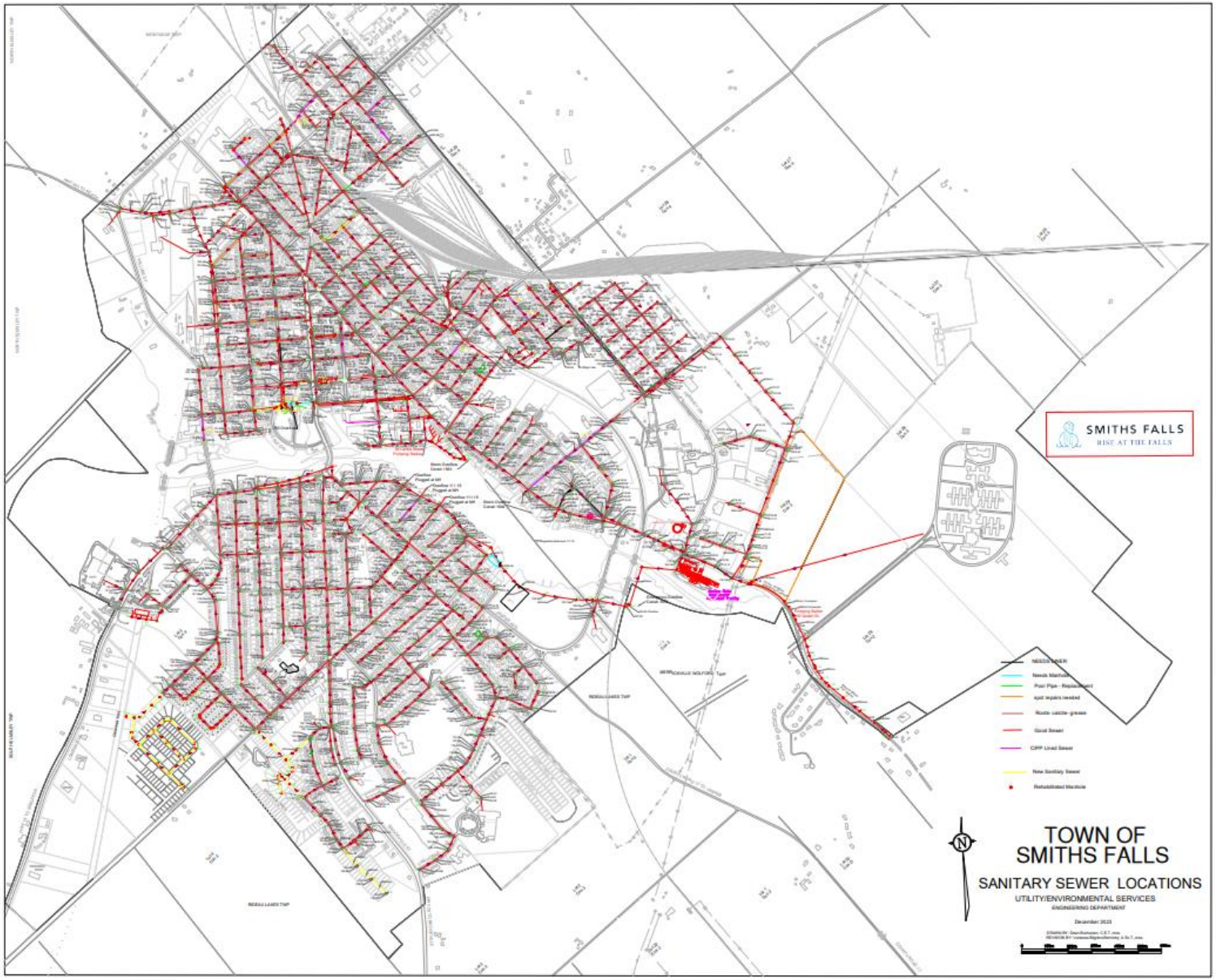
Water Network Map



Fire Flow Map



Sanitary 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, Smiths Falls' 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 Smiths Falls' 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, Smiths Falls 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, Smiths Falls 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 Smiths Falls 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, Smiths Falls 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