2025
Asset Management Plan

Prepared by:

psdcitywide

Land Acknowledgement

The lands we know today as the Town of Minto have been home to Indigenous peoples since time immemorial. We acknowledge that we are on the treaty lands and traditional territory of the Anishinaabe and the Haudenosaunee. With increasing encroachment by non-Indigenous settlers in the Town of Minto, the Anishinaabe and Haudenosaunee could not continue their traditional lifestyle and settled in their villages on Lake Huron and in the Grand River Valley. These nations uphold their Treaty Rights within our jurisdiction. Today, the Town of Minto remains home to Indigenous peoples from across Turtle Island. We are grateful to have the opportunity to share and respect Mother Earth and are committed to building constructive and cooperative relationships with Indigenous nations.

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Executive Summary

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

The Town of Minto owns infrastructure assets with a total replacement value of approximately $526million. An analysis of current conditions shows that 76% of assets are in Fair condition or better. Assessed condition data is available for 53% of assets. For the remaining categories, where direct assessments were not available, asset age was used as a proxy, a common approach, though one that often misrepresents true asset conditions. This data gap underscores the importance of ongoing condition assessments, which remain a recurring recommendation across municipalities.

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

To achieve this, the Town requires an average annual capital reinvestment of $10.3 million. However, based on a historical review of sustainable funding sources, the Town is currently committing approximately $4.1 million per year to capital projects or reserves. This results in the Town funding only 40% of its annual capital needs, leaving a funding deficit of $6.2 million annually.

Managing the Infrastructure Funding Gap

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

To address the gap, it is recommended that the Town explore the feasibility of implementing a 3.0% annual increase in tax revenues dedicated to capital infrastructure, phased in over a 20-year period. Alternative scenarios with shorter phase-in timelines have also been evaluated, though these would require higher annual increases. For water and sanitary sewer rate funding the Town is currently undergoing a rate study that will define the rates required for full sustainability of both networks.

Risk-Based Prioritization and Lifecycle Management

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

Water and Sanitary Systems

The proposed levels of service for the water and sanitary systems will remain at current funding levels until further analysis can be completed. This includes a rate study and a financial plan, all scheduled for completion by 2026. Once finalized, this information will be incorporated into the broader asset management program to better inform long-term decisions and service targets.

Ongoing Commitment to Continuous Improvement

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

- Ongoing improvement of infrastructure data to support accurate analysis and long-term planning.
- Refinement of risk and lifecycle models as new data becomes available, improving prioritization and strategic budgeting.

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

About this Document

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

Ontario Regulation 588/17

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

Table 1 Ontario Regulation 588/17 Requirements and Reporting Deadlines

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

Scope

The scope of this document is to identify the current practices and strategies that are in place to manage the public infrastructure and to make recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Town can ensure that public infrastructure is managed to support the sustainable delivery of services.

Limitations and Constraints

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

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

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

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

An Overview of Asset Management

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

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

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

Foundational Documents

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

Strategic Plan

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

Asset Management Policy

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

The Town of Minto adopted Policy Number 3.3 "Strategic Asset Management Policy" on June 18th, 2019, in accordance with Ontario Regulation 588/17.

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

- The policy's objectives dictate the use of asset management practices to ensure all assets meet the agreed levels of service in the most efficient and effective manner.
- The policy commits to, where appropriate, incorporating asset management in the Town's other plans.
- There are formally defined roles and responsibilities of internal staff and stakeholders; and
- The guiding principles include the use of a cost/benefit analysis in the management of risk.

As per Ontario Regulation 588/17, the Town reviewed its Strategic Asset Management Policy in 2024, no changes were required.

Asset Management Strategy

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

While not a static document, the strategy should not evolve and change frequently—unlike the asset management plan. The strategy provides a long-term outlook on the overall asset management program development and strengthening key elements of its framework.

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.

Key Technical Concepts

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

Asset Hierarchy and Data Classification

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

Replacement Costs

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

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

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

Estimated Useful Life and Service Life Remaining

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

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

Figure 1: Service Life Remaining Calculation

Reinvestment Rate

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

Figure 2: Target and Actual Reinvestment Calculations

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

Asset Condition

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

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

The figure below outlines the condition rating system used to determine asset conditions for all Minto owned assets.

Table 3 Standard Condition Rating Scale

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 is based on assessed condition data (only as available). In the absence of assessed condition data, asset age is used as a proxy to determine asset condition. Appendix K: Condition Assessment Guidelines include additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

Lifecycle Management Strategies

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

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

There are several field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: maintenance, rehabilitation, and replacement. The Figure 4 provides a description of each type of activity and the general difference in cost.

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

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

Figure 4 Lifecyle Management Typical Interventions

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

Risk Management Strategies

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

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

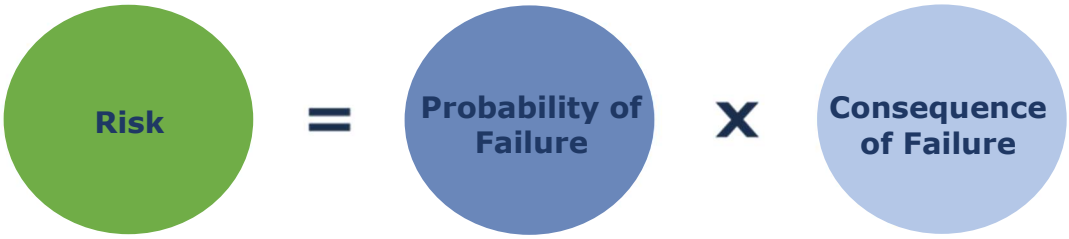
Qualitative Approach to Risk

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

Quantitative Approach to Risk

Asset risk is defined using the following formula:

Figure 5 Risk Equation



The probability of failure relates to the likelihood that an asset will fail at a given time. The probability of failure focuses on two highly imperative impacts for risk

assessment – structural and functional impacts. Structural impacts are related to the structural aspects of an asset such as load carrying capacity, condition, or breaks; whereas the functional impacts can include parameters, slope, traffic count, and other impacts that can affect the performance of an asset.

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

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

Climate Change

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

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

By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

The changing climate poses a significant risk to the Canadian economy, society, environment, and infrastructure. Physical infrastructure is vulnerable to damage and increased wear when exposed to these extreme events and climate variabilities. Canadian municipalities are faced with the responsibility to protect their local economy, citizens, environment, and physical assets. To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices.

Impacts of Growth

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

As growth-related assets are constructed or acquired, they should be integrated into Minto's asset management program. While the addition of residential units will

add to the existing assessment base and offset some of the costs associated with growth, the Town will need to review the lifecycle costs of growth-related infrastructure, and these costs should be considered in long-term funding strategies.

Levels of Service

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

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

Community Levels of Service

Community LOS is a simple, plain language description or measure of the service that the community receives. For core asset categories, the Province through O.Reg. 588/17, has provided qualitative descriptions that are required. For non-core asset categories, the Town has determined the qualitative descriptions that will be used. The community LOS can be found in the Levels of Service subsection within each asset category section in the appendix.

Technical Levels of Service

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

For core asset categories, the Province through O. Reg. 588/17, has provided technical metrics that are required. For non-core asset categories, the Town determined the technical metrics that will be used.

Current and Proposed Levels of Service

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

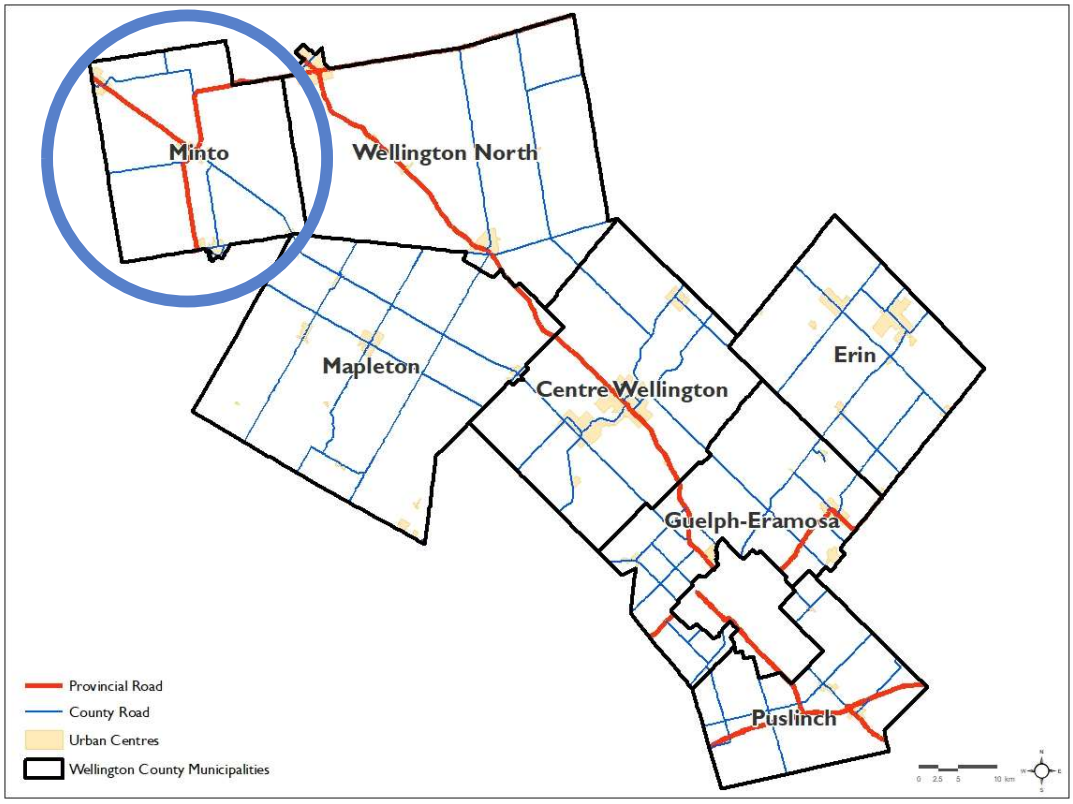
Proposed levels of service are realistic and achievable within the timeframe outlined by the Town. They were determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals, and long-term sustainability. The Town will identify a lifecycle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

Annual Review

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

Community Profile

The Town of Minto is in northern Wellington County in midwestern Ontario, situated on the Maitland River. It is a rural municipality, with the benefit from the region's proximity to several major urban markets.



As with many rural Towns, Minto was created through the amalgamation of different communities in the late 1990s. Minto consists of Harriston, Palmerston, Clifford and surrounding areas. Noted for its numerous family-centred events and activities, throughout the community all year round. The Town relies on manufacturing, agriculture, construction, service-based and health care as the primary industries to drive its economy.

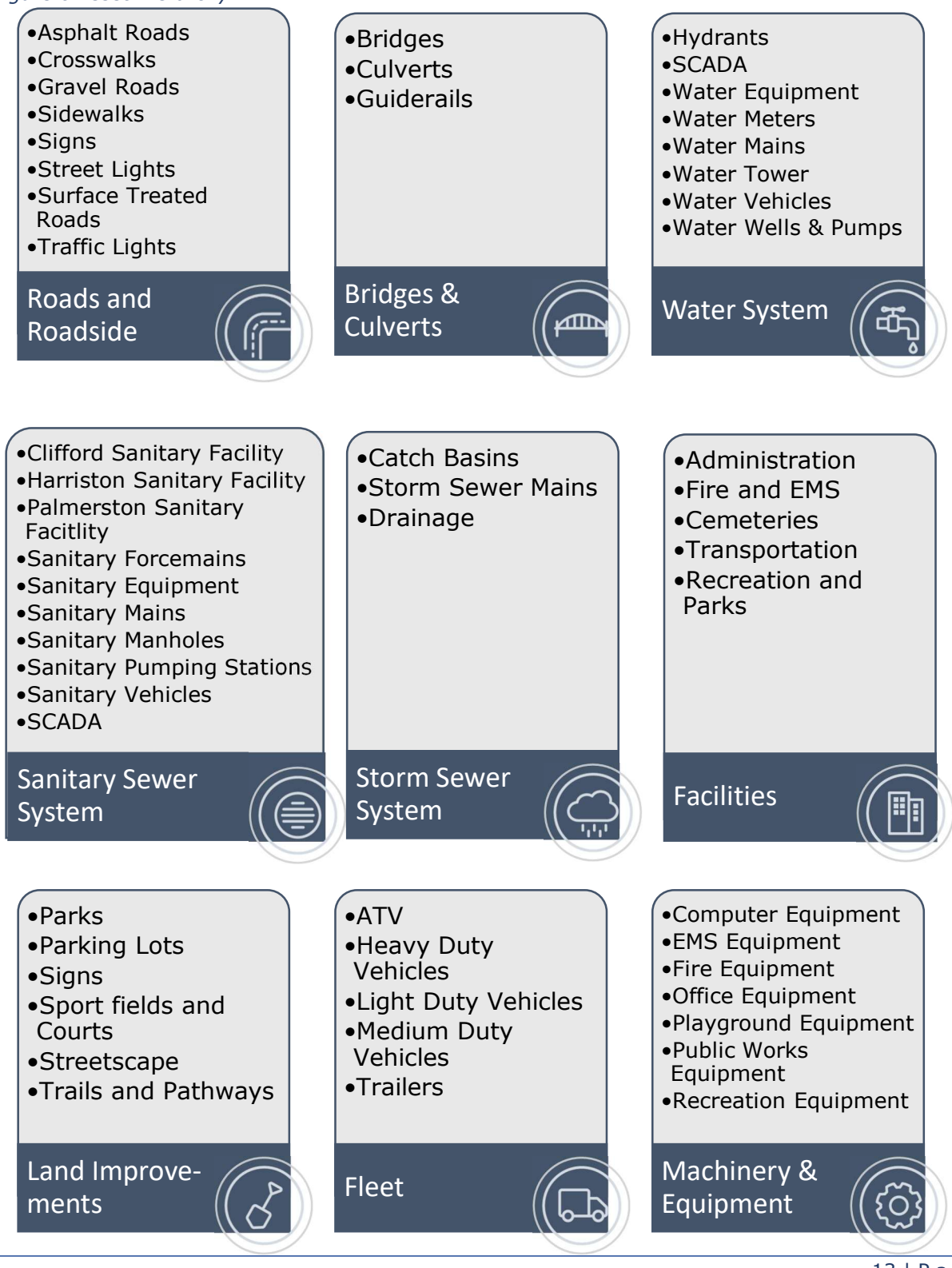
Table 2 Minto & Ontario Census Information

Census Characteristic	Minto	Ontario
Population 2021	9,094	14,223,942
Population Change 2016-2021	5%	5.8%
Total Private Dwellings	3,885	5,929,250
Population Density	30.3/km^2	15.9/km^2
Land Area	300.19 km^2	892,411.76 km^2

Inventory & Valuation

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

Figure 6 Asset Hierarchy



State of the Infrastructure

The table below shows the replacement cost, average condition and service trend shown by arrows (up, down and steady).

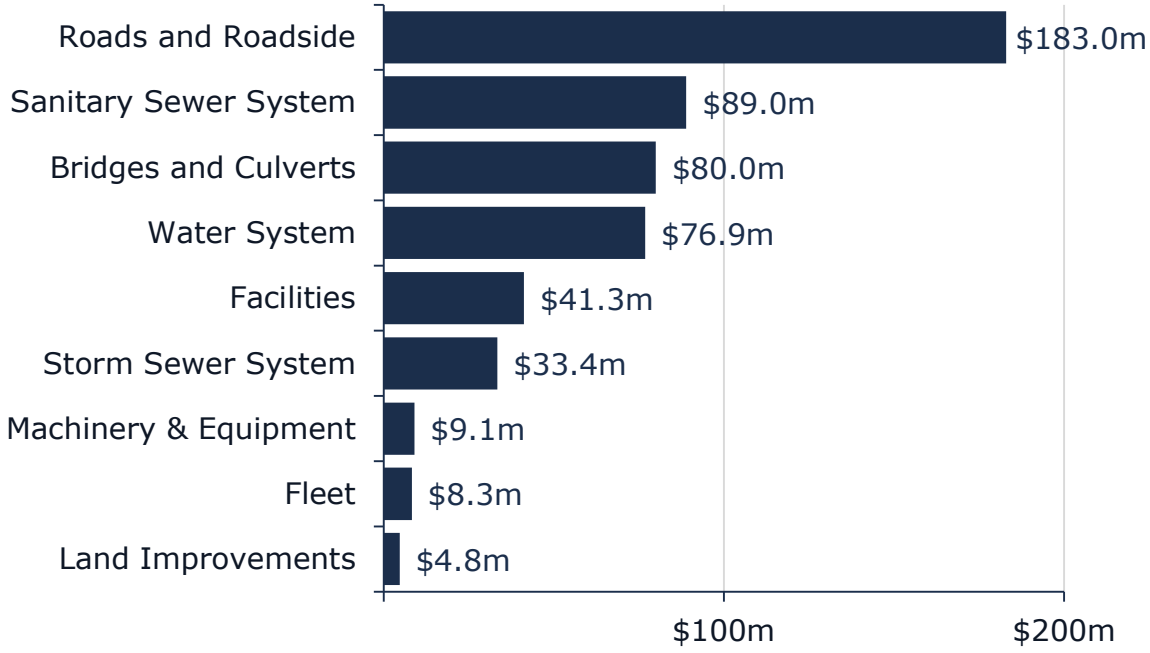
Table 3 Summary of the State of the Infrastructure and Services

Asset Category	Replacement Cost	Asset Condition	Service Trend
Roads and Roadsides	$182,965,911	Fair (48%)	↘
Bridges & Culverts	$80,032,196	Good (71%)	↘
Facilities	$41,277,593	Fair (54%)	↘
Land Improvements	$4,766,564	Poor (30%)	↘
Fleet	$8,327,126	Poor (39%)	↗
Machinery & Equipment	$9,076,137	Poor (28%)	↗
Sanitary Sewer System	$88,954,398	Good (69%)	↘
Storm Sewer System	$33,396,323	Very Good (83%)	→
Water System	$76,862,992	Good (76%)	→
Overall	**$525,659,240**	**Good (61%)**	↘

Replacement Cost

All Minto's asset categories have a total replacement cost of $526 million based on available inventory data. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Figure 7 Portfolio Replacement Value



Condition & Age

Condition of the Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 76% of assets in Minto are in fair or better condition. This estimate relies on both age-based and field condition data.

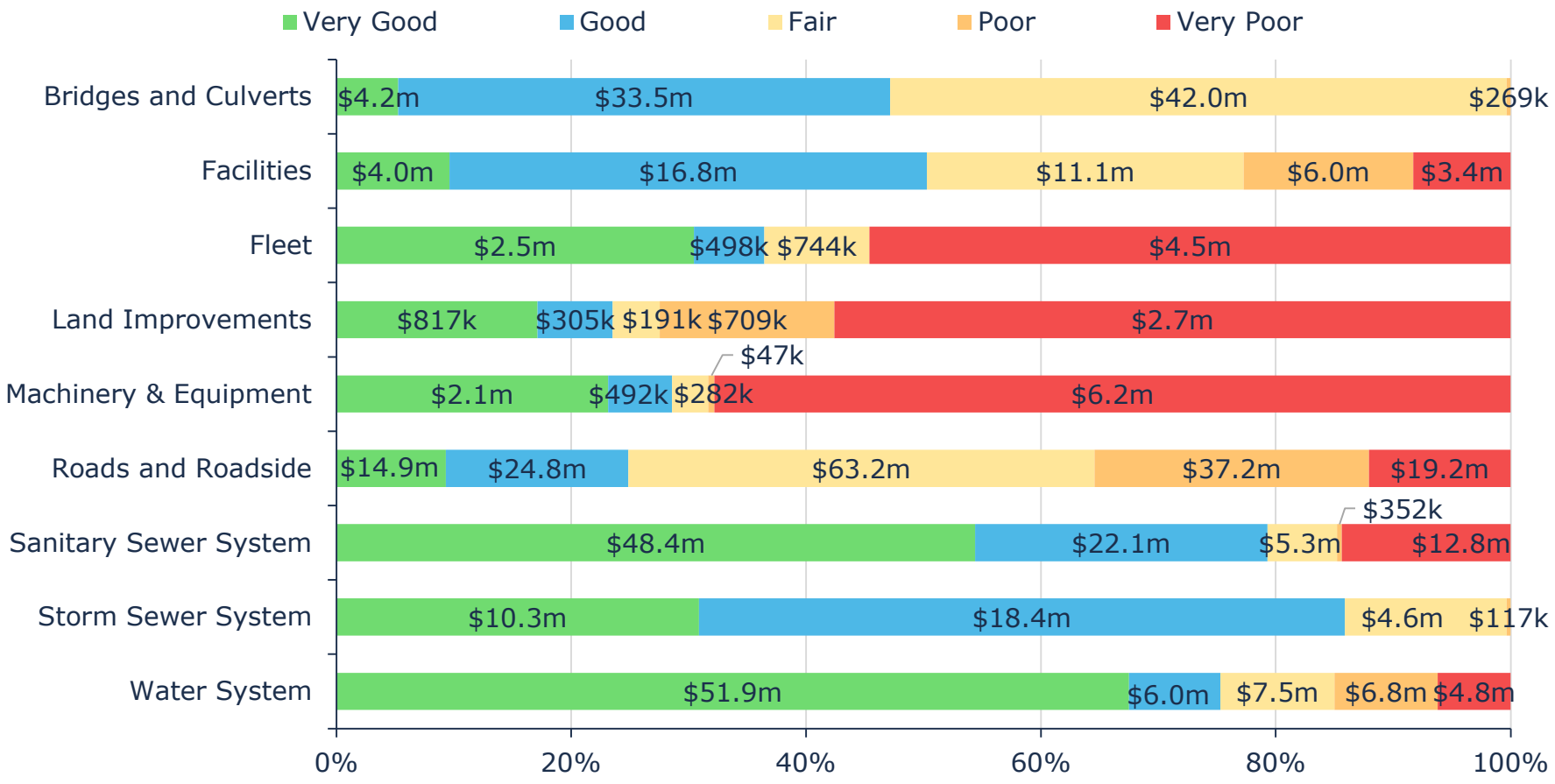
Assessed condition data is available for 53% of the assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data.

Table 4 Assessed Condition Data Sources

Asset Category	% of Assets with Assessed Condition	Source of Condition Data
Roads and Roadsides	77%	2021 Triton RNS
Bridges & Culverts	97%	2023 OSIM Report
Facilities	56%	Staff Assessment
Land Improvements	42%	Staff Assessment
Machinery & Equipment	73%	Staff Assessment
Fleet	64%	Staff Assessment
Water System	5%	Staff Assessment
Sanitary Sewer System	22%	Staff Assessment
Storm Sewer System	0%	Age-based Only

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

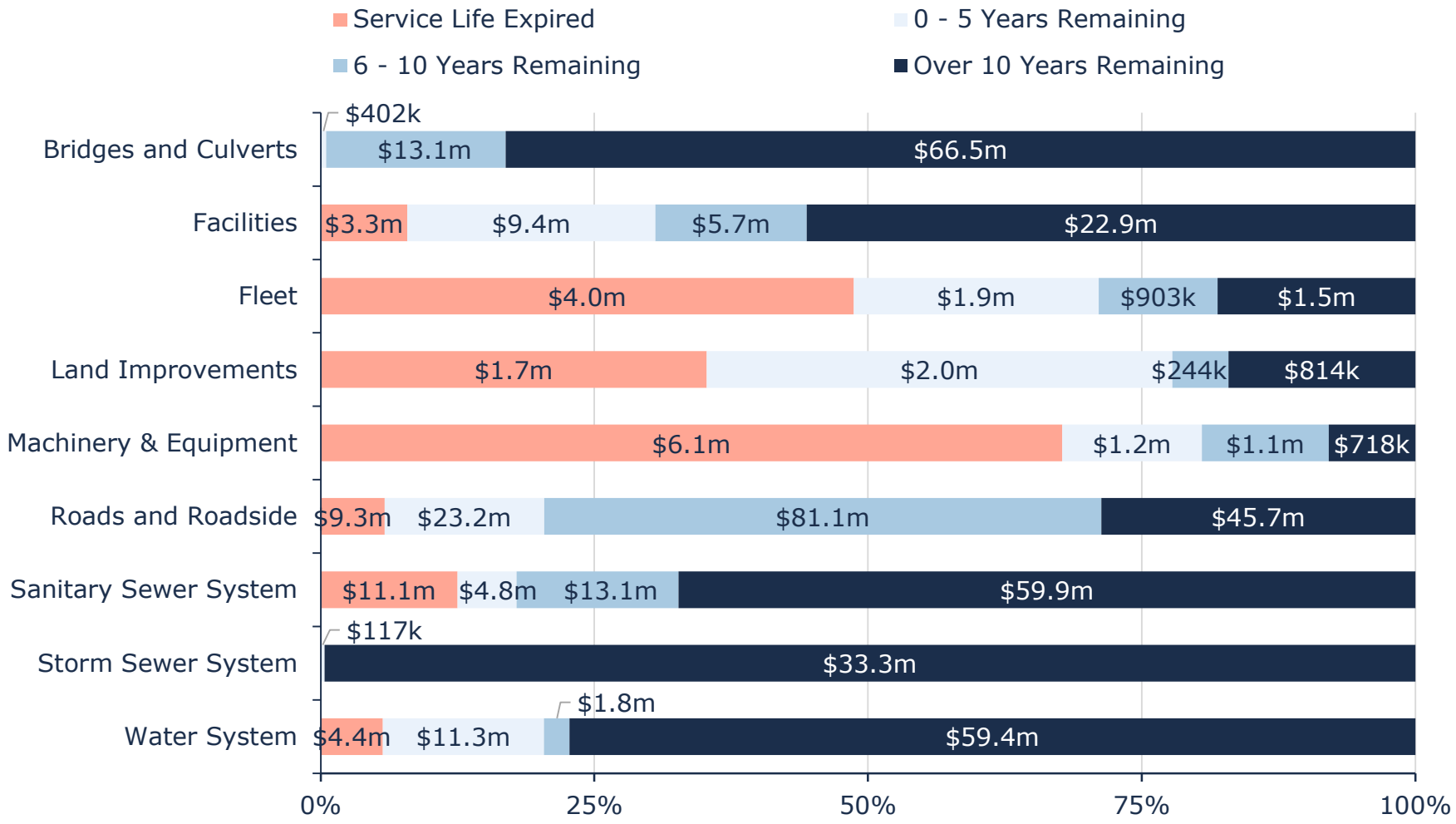
Figure 8 Overall Condition Breakdown by Asset Category



Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 8% of the Town's assets are beyond their estimated service life.

Figure 9 Service Life Remaining by Asset Category



Risk & Criticality

Qualitative Risk

The Town has noted key trends, challenges, and risks to service delivery that they are 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.

Asset Data & Information

There is a lack of confidence in the available inventory data and condition data. Staff have been prioritizing data refinement efforts to increase the accuracy and reliability of asset data and information. Staff find it a continuous challenge to dedicate resources and time to data collection and condition assessments to ensure that condition and asset attribute data is regularly reviewed and updated.

Quantitative Risk

The overall asset risk breakdown for Minto's asset inventory is portrayed in the figure below.

Figure 10 Overall Asset Risk Breakdown

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$159,232,348 (32%)	$117,508,823 (24%)	$92,236,052 (19%)	$83,750,601 (17%)	$43,945,116 (9%)

Reviewing the list of very high-risk assets to evaluate how best to mitigate the level of risk the Town is experiencing will help advance Minto's asset management program.

Climate & Growth

Minto Climate Profile

The Town of Minto is expected to experience notable effects of climate change which include higher average annual temperatures, an increase in total annual precipitation, and an increase in the frequency and severity of extreme events. According to Climatedata.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – the Town of Minto will likely experience the following trends:

Higher Average Annual Temperature:

- Between the years 1981 to 2010 the annual average temperature was 6.6 ºC
- Under a high emissions scenario, the annual average temperatures are projected to reach 8.5 ºC between the years 2021 to 2050 and around 12 ºC by the end of the century.

Increase in Average Annual Precipitation:

- Under a high emissions scenario, Minto is projected to experience a 7% increase in precipitation by the year 2050 and a 15% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

- It is expected that the frequency and severity of extreme weather events will change. In some areas, extreme weather events will occur with greater frequency and severity than others.

Integration Climate change and Asset Management

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

To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices. The integration of asset management and climate change adaptation observes industry’s best practices and enables the development of a holistic approach to risk management.

Impacts of Growth

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

Development Charges Background Study (2020)

In 2020, the Town of Minto retained Watson & Associates Economists Ltd. to undertake the D.C. study process and prepare a Development Charges Background Study, pursuant to Section 10 of the Development Charges Act, 1007 (DCA).

The following tables outline the population and employment forecasts allocated to the Town in the study:

Table 5 Population and Employment Forecasts from 2016 to 2040

Population Forecast from 2016 to 2040				
Municipality	**2016**	**2020**	**2030**	**2040**
Town of Minto	8,671	9,041	10,827	12,184
Employment Forecast from 2016 to 2040				
Municipality	**2016**	**2020**	**2030**	**2040**
Town of Minto	3,080	3,205	3,433	3,560

As a requirement of the Development Charges Act under subsection 10(2)(c), an analysis must be undertaken to assess the long-term capital and operating cost impacts for the capital infrastructure projects identified within the Development Charges.

The background study must also include an asset management plan that deals with all assets proposed to be funded, in whole or in part, by D.C.s. The asset management plan must show that the assets are financially sustainable over their full lifecycle. The Town is currently undergoing an update to be completed in 2025.

Wellington County Official Plan (1999)

In 1999, Wellington County adopted the Official Plan to direct and guide the actions of local municipalities and the County in policy development and physical planning on a very broad basis.

For the Town of Minto, this plan serves as the upper tier Official Plan for the County. It establishes a vision in which planning, and stewardship protect and enhance a diverse landscape, lifecycle and a sense of community for the County.

The County is responsible for the allocation of growth to the local municipalities, which is based on a combination of local factors including: local planning policy; historic and recent growth trends; market demand; and the capacity to accommodate growth from land supply and servicing perspectives. The most recent revision of the plan occurred in June of 2022.

Impact of Growth on Lifecycle Activities

Planning for forecasted population growth may require the expansion of existing infrastructure and services. As growth-related assets are constructed or acquired, they will be integrated into the Town's asset management program.

While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the Town will need to review the lifecycle costs of growth-related infrastructure.

Levels of Service

The Town adopted a Strategic Plan in 2024 effective for 2024 - 2028. The purpose of a Strategic Plan is to guide the decisions and actions of Council and the municipal administration as our roadmap for the Town's future. Minto is a progressive rural community where all people are welcome.

Council and staff identified five strategic goals that ensure the Town moves forward in a proactive and progressive manner.

GOAL 1: MANAGE OUR INFRASTRUCTURE

Maintain, renew, and expand our municipally owned infrastructure to enhance healthy growth and our environment.

GOAL 2: QUALITY OF LIFE

Provide a holistic quality of life which supports the mental, physical, and social health of our community.

GOAL 3: STRONG VIBRANT ECONOMY

Progressively support our local businesses while leveraging Minto's competitive advantages to attract new economic investment.

GOAL 4: INCLUSIVE COMMUNITY

Foster a welcoming, accessible, and understanding community where your family belongs.

GOAL 5: RESPONSIBLE GOVERNMENT

Deliver services in an open, accountable, and transparent manner while providing an outstanding working environment for our employees and community.

Stakeholder Engagement

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

As part of the development of the Strategic Action Plan, resident engagement was sought through an online survey as well as public open houses. The Town of Minto with every strategy, planning document, or major initiative seek community input.

Staff Input

The Municipality engaged municipal staff whose direct experience and understanding of capital planning, lifecycle renewal, and operational realities enables them to provide detailed practical feedback that complements available asset data and informs long-term decision-making.

This initiative aligns with Ontario Regulation 588/17, which requires municipalities to maintain updated strategic asset management policies and plans.

The survey focused on:

- Evaluating the current availability, condition, and reliability of the assets
- Identifying challenges and resource gaps related to staffing, funding, and maintenance activities
- Assessing staff confidence in the data used for levels of service reporting
- Gathering input on the desired proposed levels of service

The insights and recommendations have been summarized for each asset category in Appendix M: Staff Survey Summary.

Current Levels of Service

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

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

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

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

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

Proposed Levels of Service

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

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

Scenarios

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

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

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

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

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

Results

Scenario 1: Current Lifecycle Activities

Scenario 1 outlines the current lifecycle activities practiced across each asset category. Under this scenario, the asset inventory is maintained at an overall good condition level, with an average condition rating of 72%. This results in low-risk exposure due to well-maintained assets. However, achieving this condition requires high annual capital funding—approximately $13.2 million per year.

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

Scenario 2: Current Capital Reinvestment

In this scenario, the Town continues its current capital investment level of $4.1 million per year. At this funding level, the asset inventory maintains an overall average condition of Poor, with a condition rating of approximately 35%. However, this level of investment is insufficient to prevent long-term deterioration.

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

Scenario 3: Target Condition Good

Scenario 3 targets an average asset condition of Good, with a condition rating of approximately 60%. This represents a balanced approach that maintains infrastructure in a state of good repair, while reducing financial burden compared to the strategy in Scenario 1.

Achieving this level of service requires an estimated annual capital investment of $10.3 million. Although the resulting asset condition is lower than Scenario 1 (72%), the capital requirement is approximately 20% less, making this a more financially sustainable option. This scenario allows the Town to minimize long-term risks associated with asset deterioration, while ensuring that service levels remain acceptable and infrastructure performance is reliable.

Conclusion

The Town of Minto is taking a strategic, data-driven approach to ensure the long-term sustainability of its municipal services. By placing a strong emphasis on the condition of infrastructure assets, the Town is working to strike a thoughtful balance between service quality and cost-efficiency, thereby avoiding both over-investment and the risks associated with premature asset failure. Significant strides have been made in enhancing the accuracy and reliability of the Town's asset management system—a critical foundation for evidence-based decision-making related to capital planning and long-term financial sustainability.

As part of this improved asset management framework, the Town is targeting an average asset condition of "Good" (approximately 60%). This strategic target has enabled a reduction in annual capital requirements by approximately 20% compared to lifecycle strategies outlined in the system, positioning the Town to reach a sustainable funding level more quickly, while continuing to deliver reliable services that meet the evolving needs of the community.

With respect to water and sanitary infrastructure, the Town will maintain current funding levels until further refinements can be made. A comprehensive inventory review, and rate study are planned, with completion anticipated by fall 2025. The results will be incorporated into the Town's asset management program and used to inform updated levels of service and future capital planning.

Financial Management

Financial Strategy Overview

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

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

The annual funding typically available is determined by averaging historical capital expenditures on infrastructure, inclusive of any allocations to reserves for capital purposes. For Minto, the proposed budgeted allocations to reserves for 2025 were used to project available funding.

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

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

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

Annual Capital Requirements

The annual requirements represent the amount the Town should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability.

The table below outlines the total average annual capital requirements for existing assets in each asset category excluding water and sanitary (as those are remaining at the same funding levels as per the proposed levels of service). Based on the proposed levels of service selected to maintain a minimum condition of good for all tax funded asset categories.

Table 6 Average Annual Capital Requirements

Asset Category	Replacement Cost	Annual Capital Requirements
Roads and Roadside	$182,965,911	$3,699,528
Bridges and Culverts	$80,032,196	$1,242,561
Facilities	$41,277,593	$857,357
Fleet	$8,314,878	$584,583
Land Improvements	$4,766,564	$263,517
Machinery & Equipment	$9,076,137	$975,407
Storm Sewer System	$33,396,323	$269,151
Total	**$359,829,602**	**$7,892,104**

Current Funding Levels

Table 7 summarizes how current capital funding levels compare with funding required for each asset category. At existing levels, the Town is funding 29% of its annual capital requirements for all infrastructure analyzed for scenario 3 maintaining a condition of "Good" for tax funded assets. This creates a total annual funding deficit of $5.6 million.

Table 7 Current Funding Position vs Required Funding

Asset Category	Annual Capital Requirements	Annual Funding Available	Annual Infrastructure Deficit
Roads and Roadside	$3,699,528	$1,526,650	$2,172,878
Bridges and Culverts	$1,242,561	$302,426	$940,135
Facilities	$857,357	$158,640	$698,717
Fleet	$584,583	$149,395	$435,188
Land Improvements	$263,517	$7,200	$256,317
Machinery & Equipment	$975,407	$141,549	$833,858
Storm Sewer System	$269,151	$30,000	$239,151
Total	**$7,892,104**	**$2,315,860**	**$5,576,244**

Closing the Gap

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

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

Full Funding Requirements

In 2025, Minto will have an annual tax revenue of $6,804,975. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require a 81.9% tax change over time.

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

Table 8 Phasing in Annual Tax Increases

Total % Increase Needed in Annual Property Taxation Revenues	Phase-in Period			
	5 Years	10 Years	15 Years	20 Years
81.9%	12.7%	6.2%	4.1%	3.0%

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

Ten-Year Financial Plan

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

Table 9 Ten-Year Financial Plan

Asset Category	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Roads and Roadside	$3.9m	$553k	$777k	$606k	$1.4m	$2.6m	$1.1m	$1.5m	$1.5m	$496k
Bridges and Culverts	-	-	-	-	$402k	-	$7.2m	$3.2m	$2.3m	$2.4m
Facilities	$3.4m	$1.1m	$4.6m	-	$676k	$1.4m	$1.2m	$1.6m	$2.3m	$884k
Fleet	$2.1m	$454k	$439k	$353k	$258k	$146k	$540k	$911k	-	$581k
Land Improvements	$2.0m	-	-	-	$133k	$194k	$213k	$267k	$210k	$248k
Machinery & Equipment	$3.1m	$637k	$352k	$1.1m	$1.1m	$485k	$785k	$993k	$587k	$1.0m
Storm Sewer System	-	-	-	-	-	-	-	-	-	-
Total	**$14.4m**	**$2.8m**	**$6.1m**	**$2.1m**	**$4.0m**	**$4.8m**	**$11.0m**	**$8.4m**	**$6.9m**	**$5.7m**
Proposed Funding	$2.3m	$2.4m	$2.6m	$2.8m	$3.0m	$3.2m	$3.5m	$3.7m	$4.0m	$4.2m

The current 10-year program has a funding requirement of $66.3 million over the ten years, while the proposed available funding level will be $31.8 million. The annual funding deficit at the end of the 10-years will be $3.7 million, in other words the scenario will be 53% funded. There will still be a need to prioritize projects and defer until the long-term strategy and sustainable funding levels are met, unless the use of debt funding or one-time grants are received.

This proposed level of service is a more achievable level of funding for the community while still ensuring the average condition of the infrastructure is Good.

Recommendations

Financial Strategies

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

- implementing a 3.0% annual tax increase over a 20-year phase-in period and allocating the entire increase in revenue towards capital funding
- continued allocation of OCIF and CCBF funding as previously outlined
- using risk frameworks and staff judgement to prioritize projects, particularly to aid in elimination of existing infrastructure backlogs

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

Asset Data

1. Continuously review, refine, and calibrate lifecycle and risk profiles to better reflect actual practices and improve capital projections. In particular:
   - the timing of various lifecycle events, the triggers for treatment, anticipated impacts of each treatment, and costs
   - the various attributes used to estimate the likelihood and consequence of asset failures, and their respective weightings
2. Asset management planning is highly sensitive to replacement costs. Periodically update replacement costs based on recent projects, invoices, or estimates, as well as condition assessments, or any other technical reports and studies.
3. Like replacement costs, an asset's established serviceable life can have dramatic impacts on all projections and analyses, including long-range forecasting and financial recommendations. Periodically reviewing and updating these values to better reflect in-field performance and staff judgement is recommended.

Risk and Levels of Service

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

Appendix A: Road Network

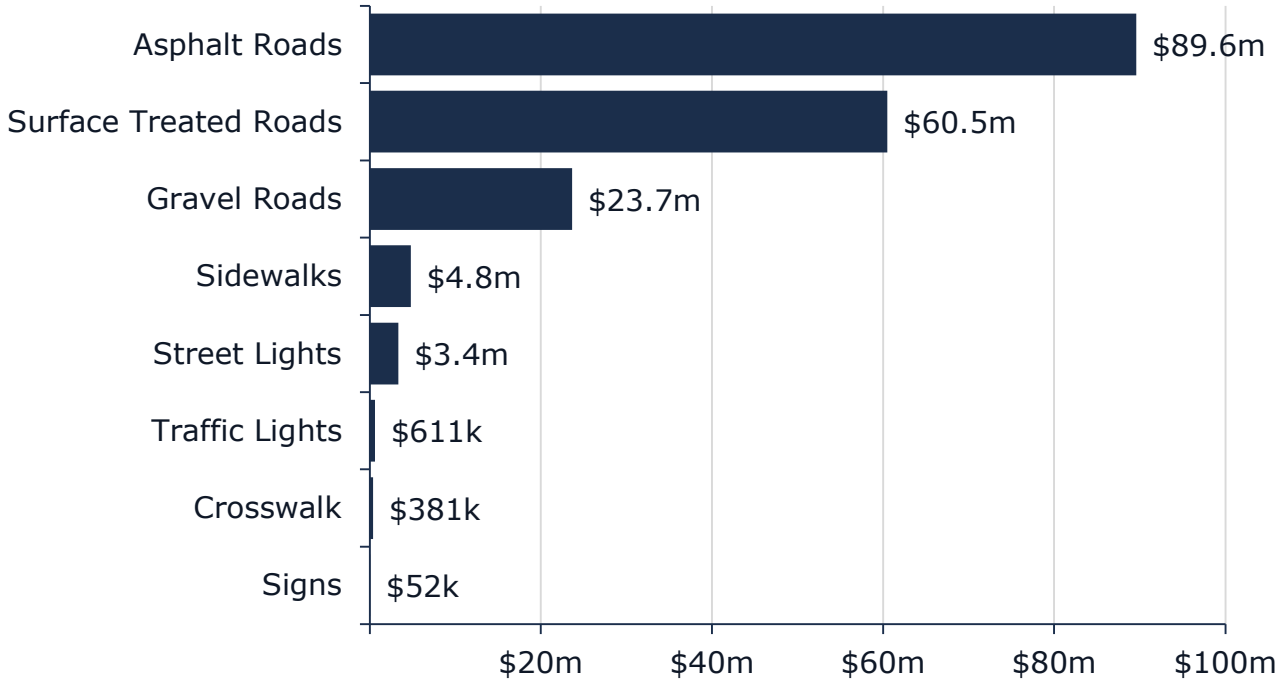
The road network is a critical component of the provision of safe and efficient transportation services, connecting the many hamlets and rural areas that comprise the Town. These assets represent the highest value asset categories in the Town's asset portfolio. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure.

The Roads and Drainage Division manages the Town's roads and roadside assets, through the maintenance, rehabilitation and construction of roads and supporting roadside infrastructure. The department is also responsible for winter snow clearing, ice control and snow removal operations.

Inventory & Valuation

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

Figure 11 Road Network Replacement Value

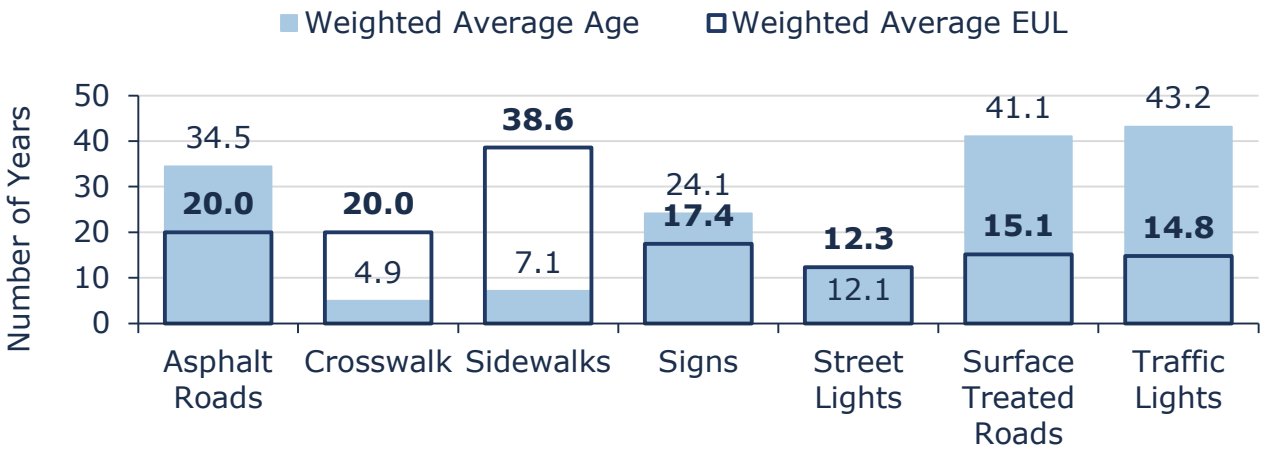


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

Asset Condition & Age

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

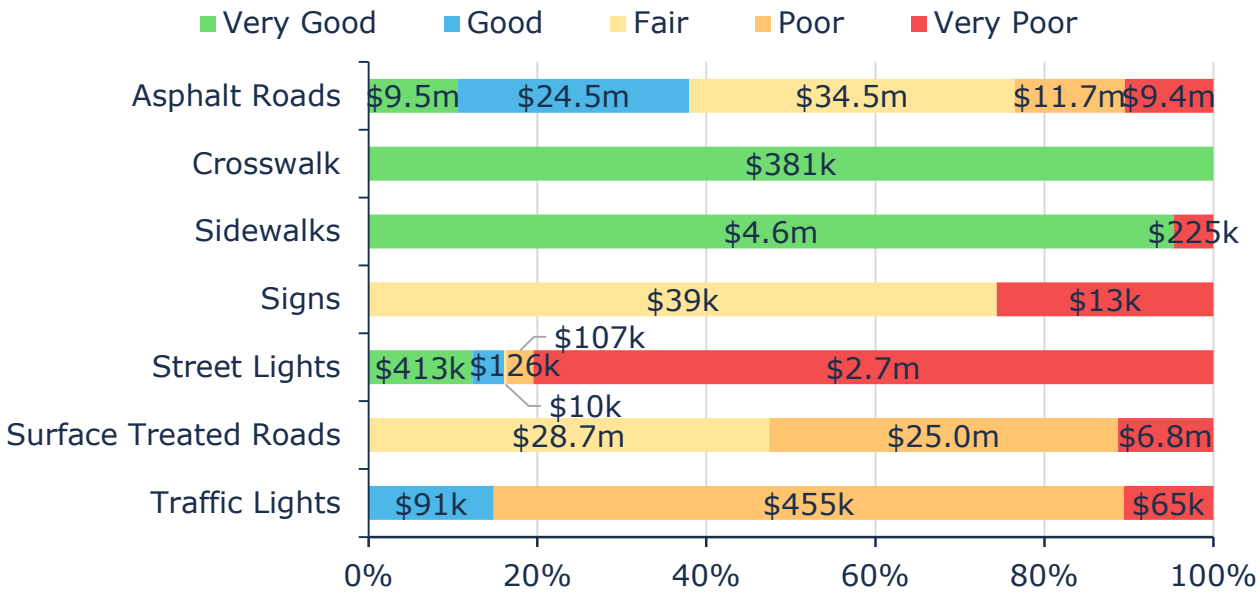
Figure 12 Road Network Average Age vs Average EUL



The analysis indicates that most road assets are within their expected lifespans, though asphalt and gravel roads are notably overage, and sidewalks and curbs are approaching the end of theirs.

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

Figure 13 Road Network Condition Breakdown



To ensure that Minto's roads 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 roads.

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

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The Town's current approach is described below.

- A road needs study through an external consultant is conducted every 5 years. Staff also conduct visual inspections during road patrols.
- The most recent road needs study was prepared by Triton Engineering Ltd. in 2021.
- Routine road patrols are undertaken weekly, granular roads are also visually
- inspected during grading activities
- Other road network assets are inspected as per O. Reg. 239/02

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

Lifecycle Management Strategy

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

Figure 14 Roads and Roadsides Current Lifecycle Strategy

Maintenance

- Pothole repairs are completed annually based on deficiencies identified through regular road patrols and feedback from the public.
- Seasonal maintenance activities include asphalt patching, graveling, and tree cutting.
- Summer maintenance activities include sidewalk repairs, grading, re-gravelling, applying dust suppressant, ditching, roadside mowing, tree trimming, brush cleanup, road sign installation/maintenance, and line painting.
- Winter maintenance activities include snow plowing, salting, and snow removal.

Replacement

- Rehabilitation activites include surface treatments, mill and resurfacing treatments.
- Road replacement prioritization is determined by consideration of growth, risk, condition, health and safety, and social impact.
- Road reconstruction projects (base and surface) are identified based on road condition, risk, and sub-surface asset requirements (storm sewer, sanitary sewer, water).

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

Table 10 Asphalt Roads Lifecycle Events

Asphalt Roads		
Event Name	**Event Class**	**Event Trigger**
Mill and Resurface (Single)	Rehabilitation	30 Condition
Mill and Resurface (Double)	Rehabilitation	30 Condition
Full Reconstruction	Replacement	0% Condition

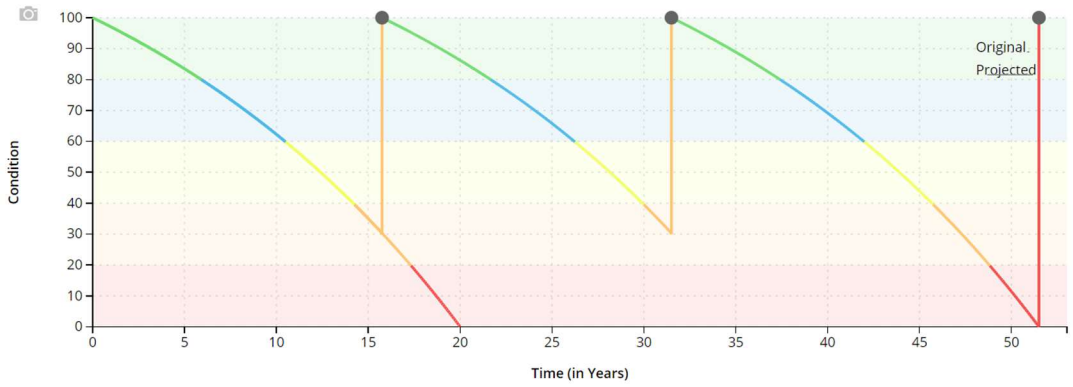
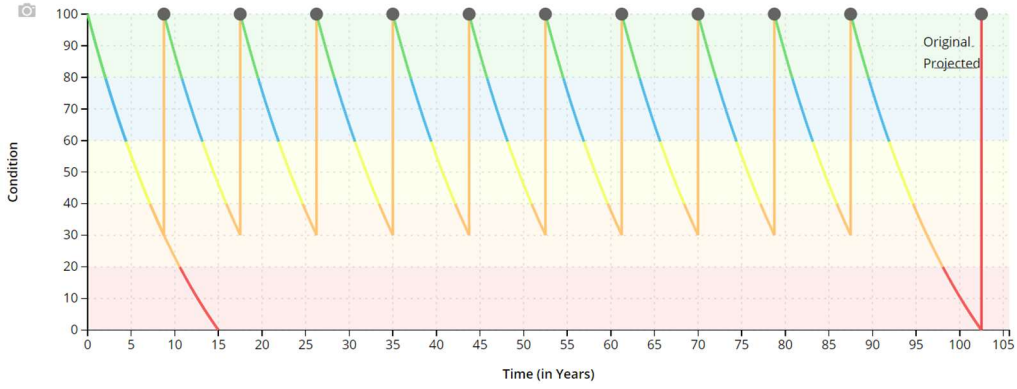


Table 11 Tar & Chip Roads Lifecycle Events

Surface Treated Roads		
Event Name	**Event Class**	**Event Trigger**
Surface Treatment (Single)	Rehabilitation	30 Condition
Repeated		
Full Reconstruction	Replacement	0% Condition



Risk & Criticality

The following risk breakdown provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within

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

Figure 15 Road Network Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$15,176,851	$66,469,464	$55,391,348	$20,576,660	$1,700,939
(10%)	(42%)	(35%)	(13%)	(1%)

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

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

Levels of Service

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

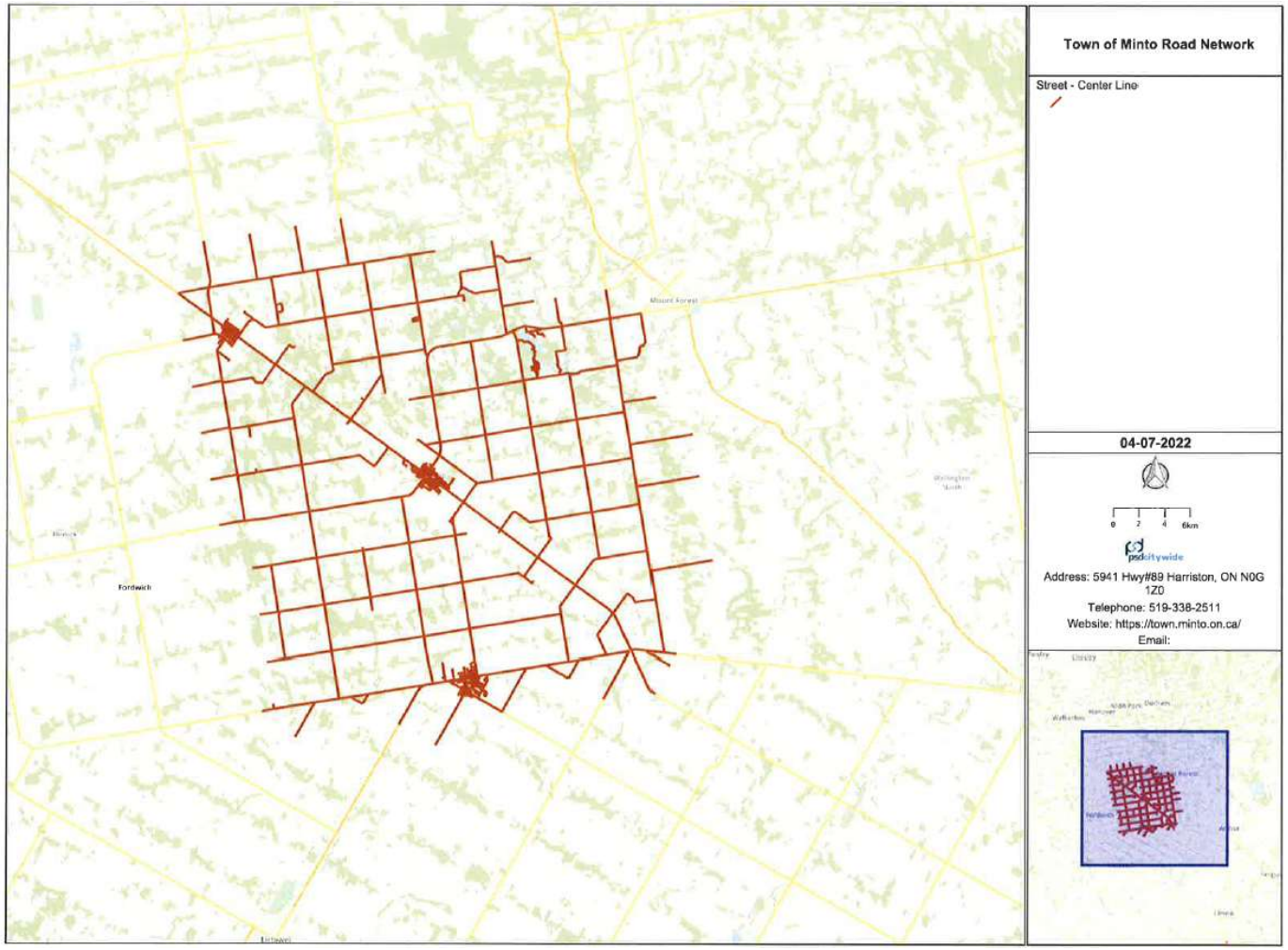
Current Levels of Service

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

Table 12 Road Network Current Level of Service

Community LOS		Service Attribute	Technical LOS	
Description, which may include maps, of the road network in the town and its level of connectivity	See Figure 16 Map of Roads	Scope	Replacement Cost	$182,965,911
			Quantity (km of roads)	174
			Quantity (number of streetlights)	1040
			Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km2)	0
			Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km2)	0
			Lane-km of local roads (MMS classes 5 and 6) per land area (km/km2)	1.64
Description or images that illustrate the different levels of road class pavement conditions	The Town completed a Road Needs Study report in May 2021 in coordination with Triton Engineering Limited. Ratings are categorized into 5 general qualitative descriptors as detailed below: 0 to 29 – Failed 30 to 49 – Poor 50 to 75 – Fair 75 to 85 – Good 85 to 100 – Very Good	Quality/ Reliability	Average pavement condition index for paved roads in the Town	Fair (53%)
			Average surface condition for unpaved roads in the town (e.g. excellent, good, fair, poor)	Fair
			Average Condition	Fair (48%)
			% Condition > Fair	65%
			% Condition poor and very poor	35%
Services will be provided to ensure long-term sustainability		Performance	% Risk that is High and Very High	14%
			Average Risk	Low
			Annual reinvestment	$1,526,650
			Capital reinvestment rate	0.83%

Figure 16 Map of Roads



Proposed Levels of Service

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

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

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

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

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

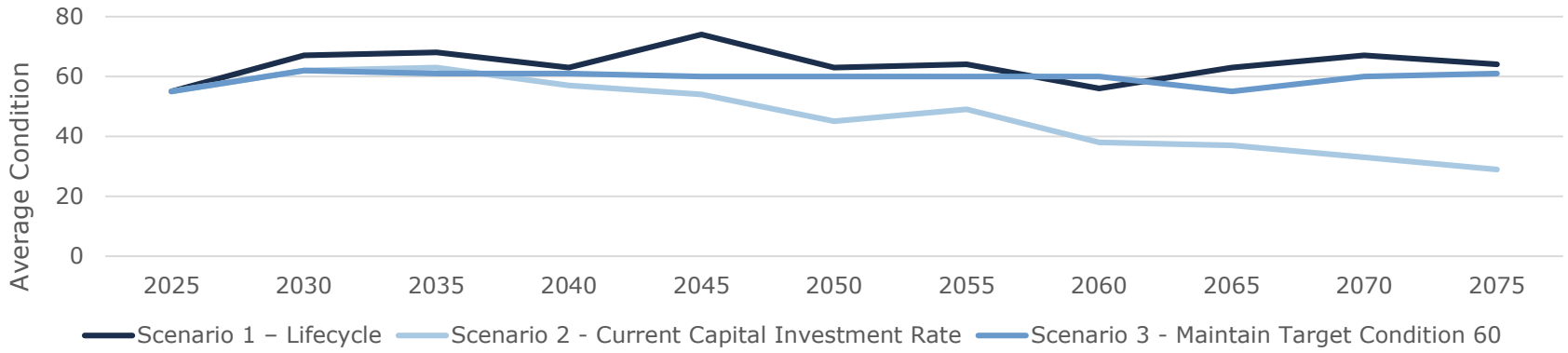
Table 13 Scenario Results Summary

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$159,315,442	Good (63%)	$4,124,622
Scenario 2 - Current Capital Investment Rate	$159,315,442	Poor (39%)	$1,526,650
Scenario 3 – Target Good Condition	$159,315,442	Good (60%)	$3,699,528

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

The recommended scenario for the road network is Scenario 3 Maintain Target Good Condition. The figure below shows the condition projection for 50-years for each scenario.

Figure 17 Projected Average Condition for Each Scenario for 50-Years



Appendix B: Bridges & Culverts

Bridges and culverts are another critical component of the transportation services provided to the community.

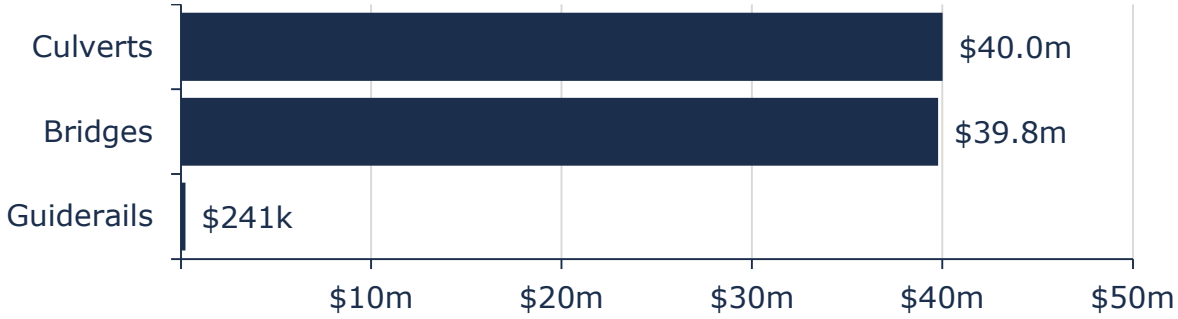
The Roads and Drainage Division is responsible for the planning and managing of all bridges and structural culverts located across municipal roads with the goal of keeping structures in an adequate state of repair and minimizing service disruptions.

Based on the requirements outlined by the Ministry of Transportation, the most recent Ontario Structure Inspection (OSIM) was conducted in 2023 by Burgess Engineering Inc.

Inventory & Valuation

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

Figure 18 Bridges & Culverts Replacement Cost

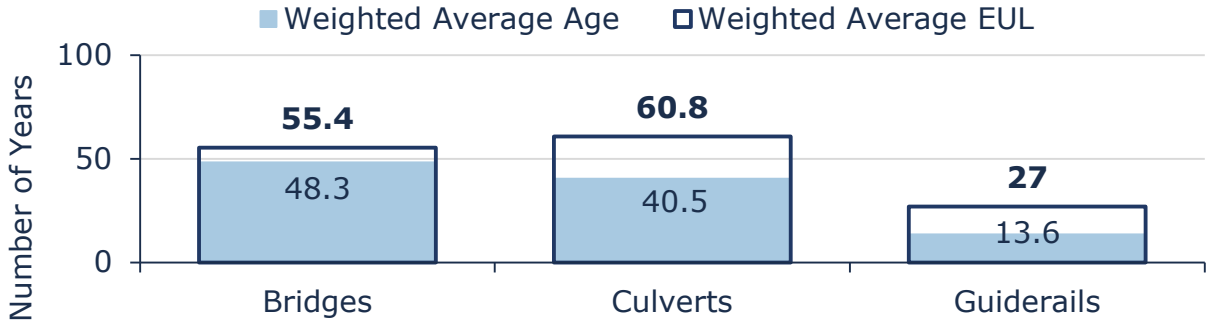


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed.

Asset Condition & Age

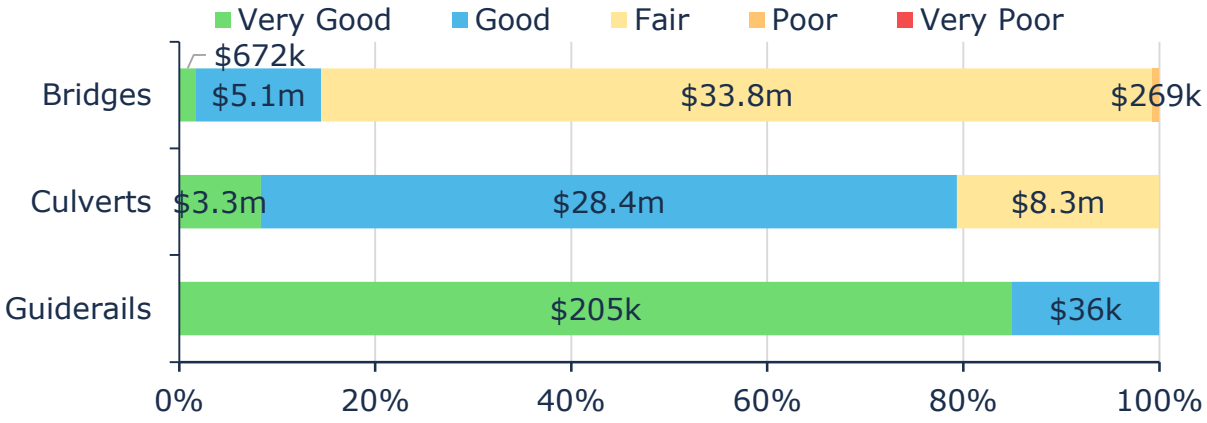
The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 19 Bridges & Culverts Average Age vs Average EUL



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

Figure 20 Bridges & Culverts Condition Breakdown



To ensure that the Town's bridges and culverts continue to provide an acceptable level of service, the staff should monitor the average condition of all assets. Each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

Current Approach to Condition Assessment

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

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 meters are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM)
- The most recent bridge and culvert inspection was conducted in 2021 Burgess Engineering Inc.
- Bridge and culvert assets are visually inspected by municipal staff as needed

In this AMP and as per the OSIM reports, the bridge condition index (BCI) rating criteria is used to determine the current condition of assets and forecast future capital requirements:

Condition	BCI Rating
Very Good	90-100
Good	70-89
Fair	50-69
Poor	40-49
Very Poor	0-40

Lifecycle Management Strategy

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

important to establish a lifecycle management strategy to proactively manage asset deterioration. Figure 21 outlines Minto's current lifecycle management strategy.

Figure 21 Bridges & Culverts Current Lifecycle Strategy

Maintenance, Rehabilitation and Replacement

- Typical maintenance includes:
  - Obstruction removal
  - Cleaning and sweeping
  - Erosion control
  - Brush and tree removal
- All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)

Inspection

- The most recent inspection report was completed in 2023 by Burgess Engineering Inc.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix L: Risk Rating Criteria for the criteria used to determine the risk rating of each asset. This is a high-level model developed by municipal staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

Figure 22 Bridges & Culverts Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$1,950,852	$6,229,742	$26,763,789	$33,033,631	$12,054,182
(2%)	(8%)	(33%)	(41%)	(15%)

Levels of Service

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

Current Levels of Service

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

Table 14 Bridges & Culverts Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	The traffic on bridges and structural culverts is generally light, but certain rural structures do support heavy vehicle traffic.	Scope	Replacement Cost	$80,032,196
			# of Bridges	18
			# of Structural Culverts	47
Description or images of the condition of bridges and culverts and how this would affect the use of the bridges and culverts	Good (BCI 70-100): Generally considered to be in good-excellent condition, and repair or rehabilitation work is not usually required within the next 5 years. Fair (BCI 50-70): Generally considered to be in good-fair condition. Repair or rehabilitation work recommended is ideally scheduled to be completed within the next 5 years. Poor (BCI Less than 50): Generally considered poor with lower numbers representing structures nearing the end of their service life. The repair or rehabilitation of these structures is completed within 1 year. If the replacement would be more viable, the structure can be identified for continued monitoring and scheduled for replacement in the short term.	Quality / Reliability	% of bridges in the Town with loading or dimensional restrictions	0
			Average bridge condition index value for bridges	Good (66%)
			Average bridge condition index value for structural culverts	Good (76%)
			Average Condition	Good (71%)
			% Condition > Fair	100%
			% Condition poor and very poor	0%
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	56%
			Average Risk	High
			Annual reinvestment	$302,426
			Capital reinvestment rate	0.38%

Proposed Levels of Service

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

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

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

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

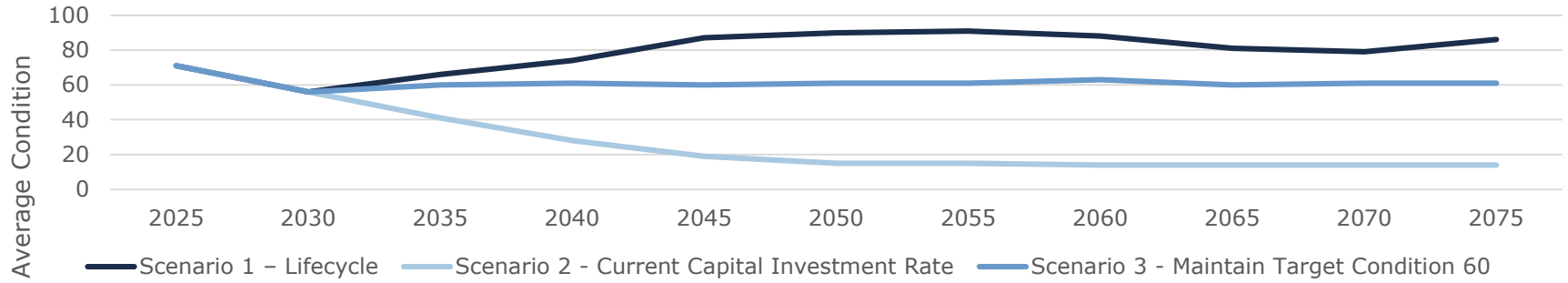
The table below outlines the results for each scenario for the municipal bridges and culverts.

Table 15 Bridges & Culverts Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$80,032,196	Good (78%)	$1,547,269
Scenario 2 - Current Capital Investment Rate	$80,032,196	Poor (20%)	$302,426
Scenario 3 – Maintain Target Condition Good	$80,032,196	Good (60%)	$1,242,561

The recommended scenario for bridges and culverts is Scenario 3 Maintain Target Condition of Good at 60%. The figure below shows the condition projection for 50-years for each scenario.

Figure 23 Projected Average Condition for Each Scenario for 50-Years



Appendix C: Storm Sewer System

The Town is responsible for owning and maintaining a storm sewer network of storm mains, catch basins, maintenance holes and a retention pond.

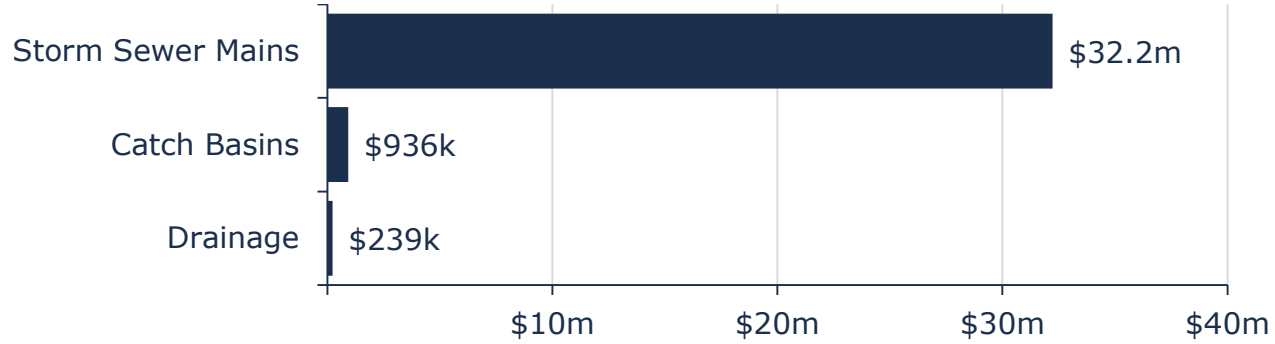
The Town's Roads and Drainage Division is responsible for planning and managing storm sewer infrastructure.

Storm sewer infrastructure generally poses the greatest uncertainty for municipalities, including Minto. Staff have expressed a lack of confidence in the current inventory but are working towards improving the accuracy and reliability to assist with long-term asset management planning.

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Minto's storm sewer system inventory.

Figure 24 Storm Sewer System Replacement Cost

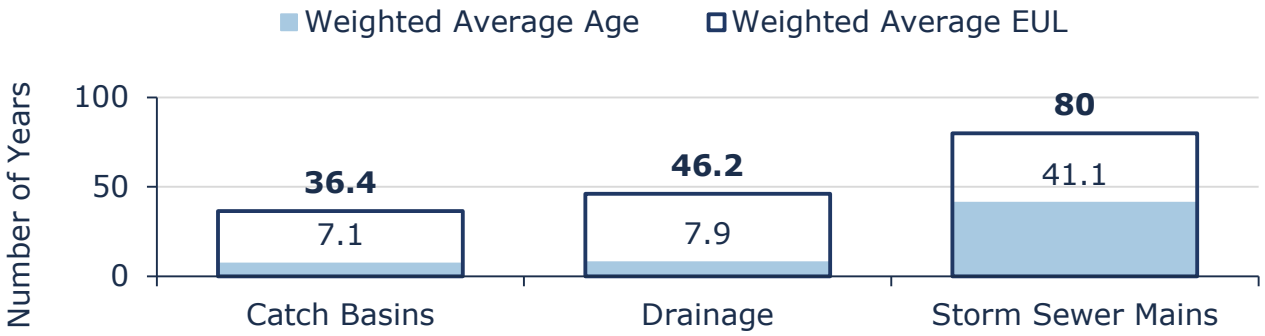


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

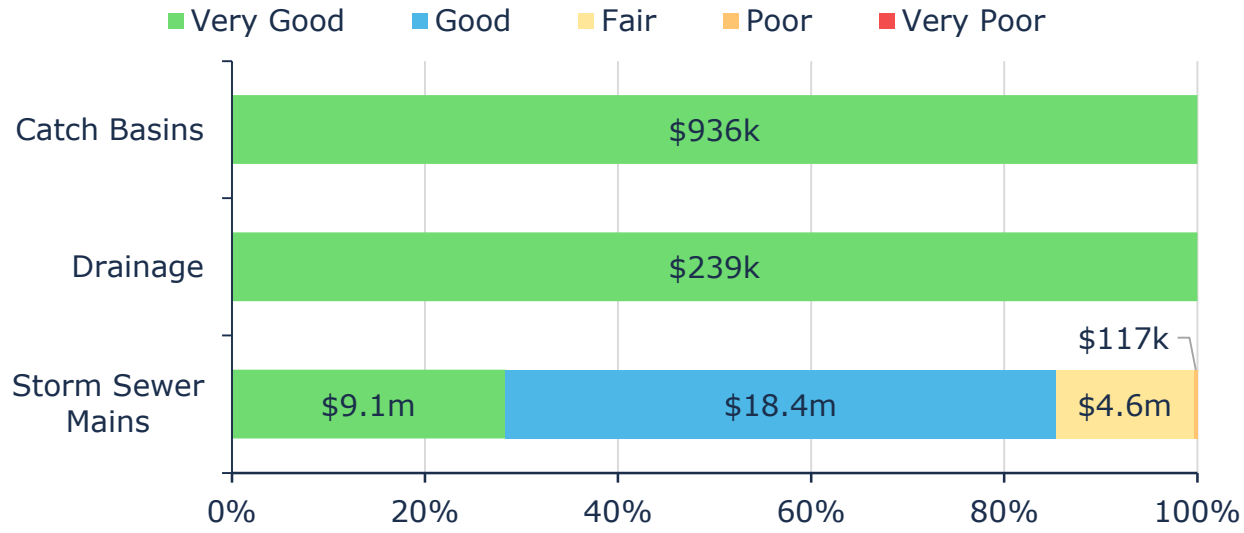
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 25 Storm Sewer System Average Age vs Average EUL



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

Figure 26 Storm Sewer System Condition Breakdown



To ensure that the municipal storm sewer system 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 assets.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

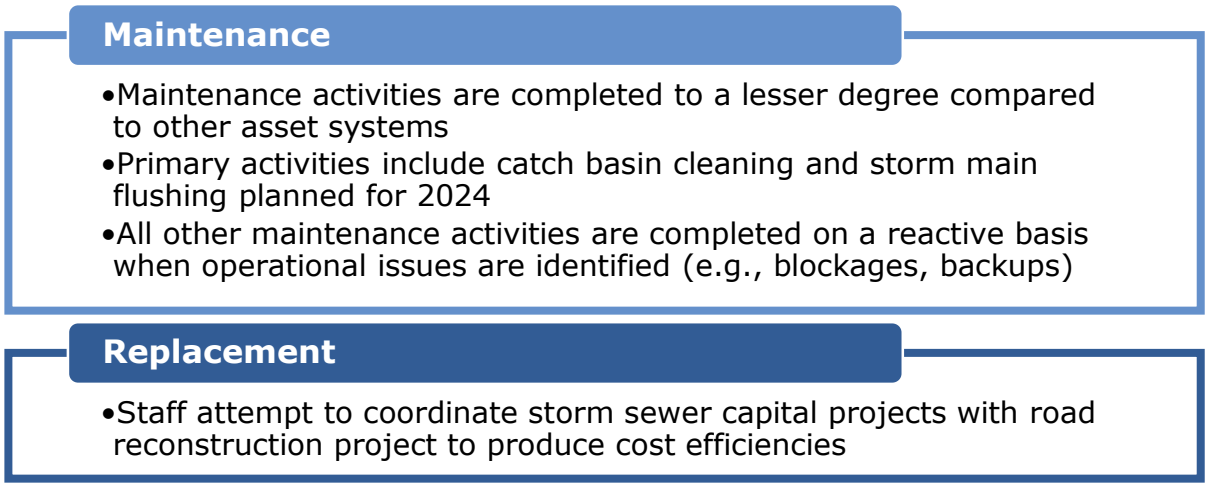
Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the Town's current approach:

- There are no formal condition assessment programs in place for storm sewer infrastructure.
- Currently age-based estimates are used to determine asset conditions, although confidence in the accuracy of these estimates is low.

Lifecycle Management Strategy

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

Figure 27 Storm Sewer System Current Lifecycle Strategy



Risk & Criticality

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

Figure 28 Storm Sewer System Risk Breakdown

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$11,651,896 (38%)	$14,071,233 (46%)	$2,143,666 (7%)	$2,881,200 (9%)	- (0%)

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

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

Levels of Service

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

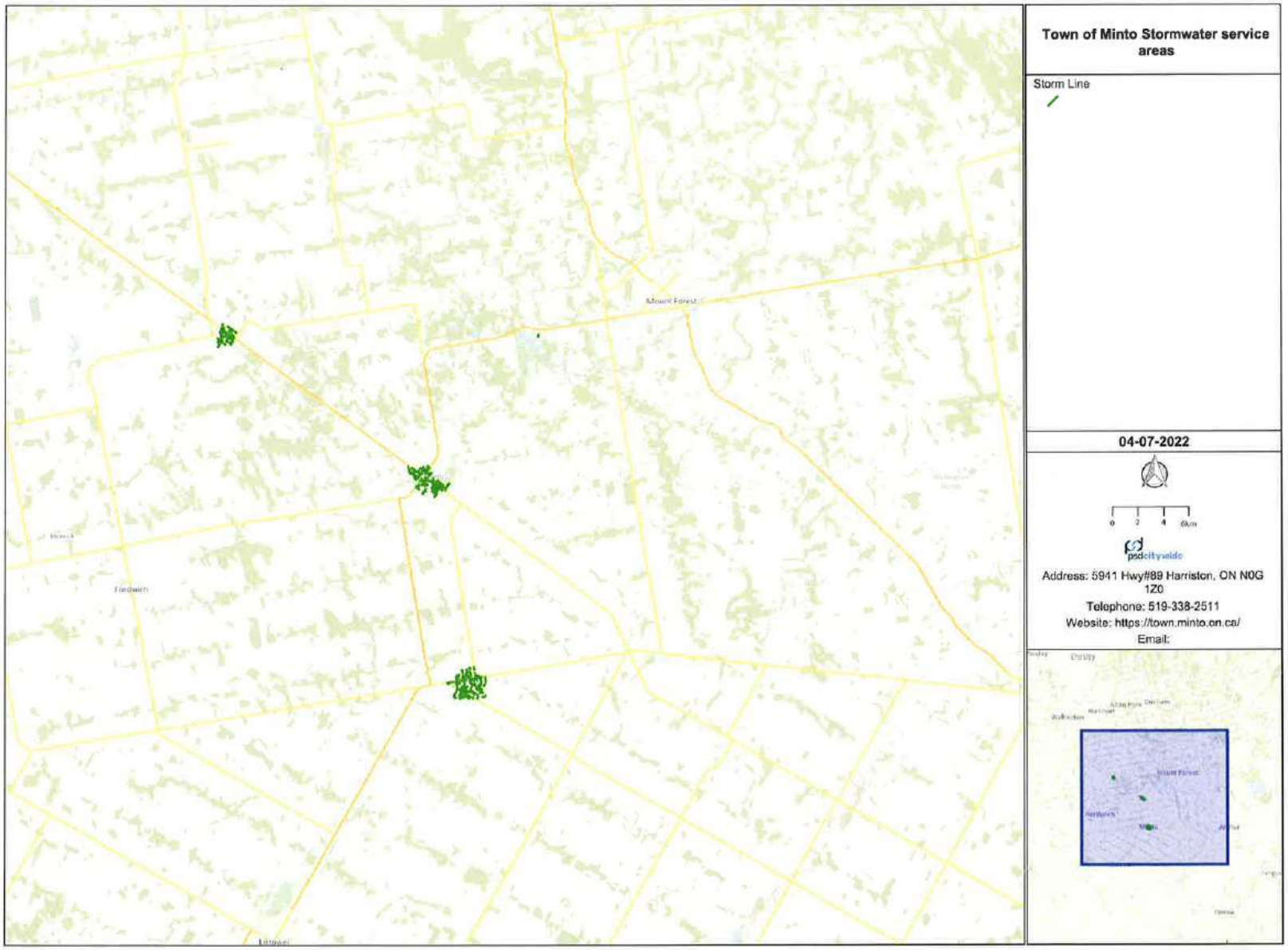
Current Levels of Service

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

Table 16 Storm Sewer System Current Levels of Service

Community LOS			Service Attribute	Current Technical LOS
Description, which may include a map of the user groups or areas of the town that are protected from flooding, including the extent of protection provided by the municipal stormwater system	See Figure 29 Map of Storm Sewer System	Scope	Replacement Cost	$33,396,323
			Quantity (Catch Basins)	321
			Length of main (kilometers)	38 km
			% Properties in town resilient to a 100-year storm	33%
			% The municipal stormwater management system is resilient to a 5-year storm	100%
Description of the condition of the storm network	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Very Good (83%)
			% Condition > Fair	100%
			% Condition poor and very poor	0%
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	9%
			Average Risk	Very Low
			Annual reinvestment	$30,000
			Capital reinvestment rate	0.09%

Figure 29 Map of Storm Sewer System



Proposed Levels of Service

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

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

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

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

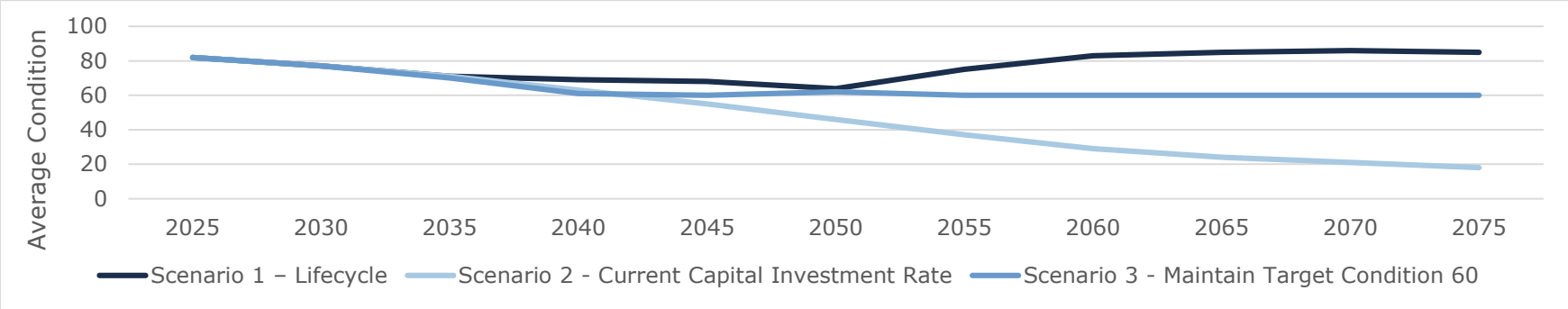
The table below outlines the results for each scenario for the storm sewer system.

Table 17 Storm Sewer System Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$33,396,323	Good (78%)	$362,944
Scenario 2 - Current Capital Investment Rate	$33,396,323	Poor (28%)	$30,000
Scenario 3 – Maintain Target Condition Good	$33,396,323	Good (60%)	$269,151

The recommended scenario for the storm network is Scenario 3 Maintain Target Condition of Good at 60%. The figure below shows the condition projection for 50-years for each scenario.

Figure 30 Projected Average Condition for Each Scenario for 50-Years



Appendix D: Facilities

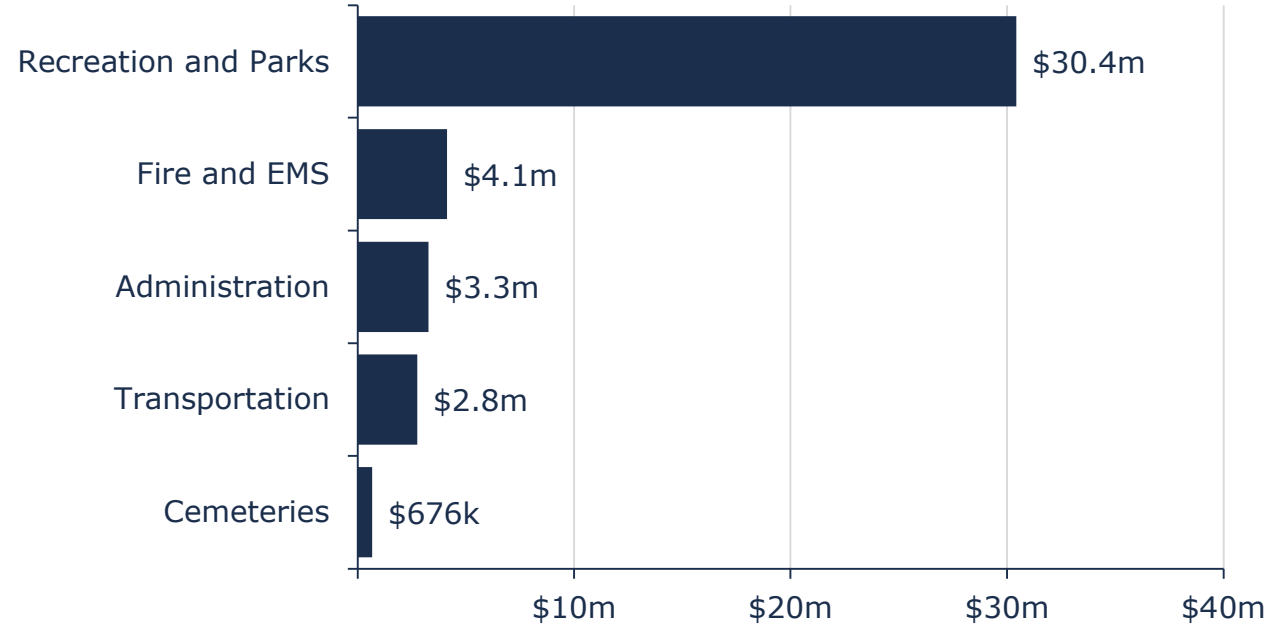
The Town of Minto owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- Administrative office
- Cemeteries
- Fire halls and EMS
- Public works garages and storage sheds
- Recreation and parks

Inventory & Valuation

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

Figure 31 Facilities Replacement Cost

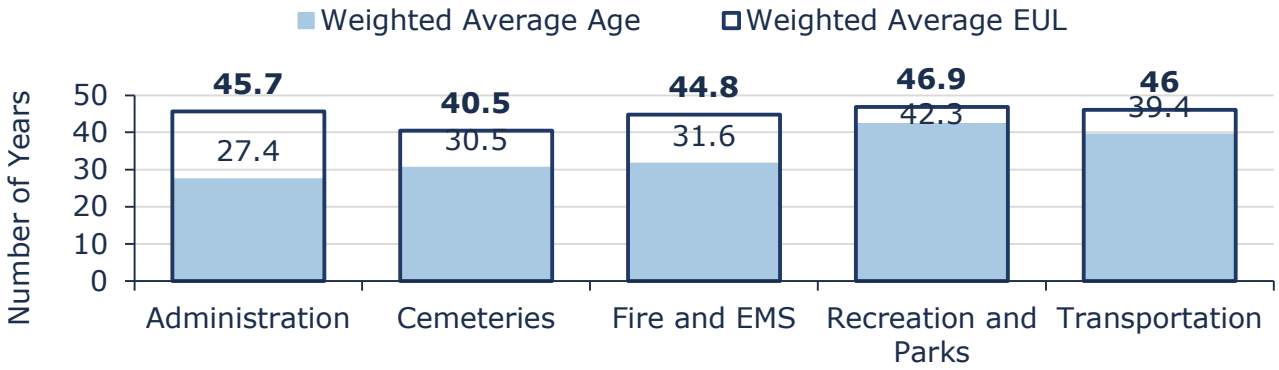


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

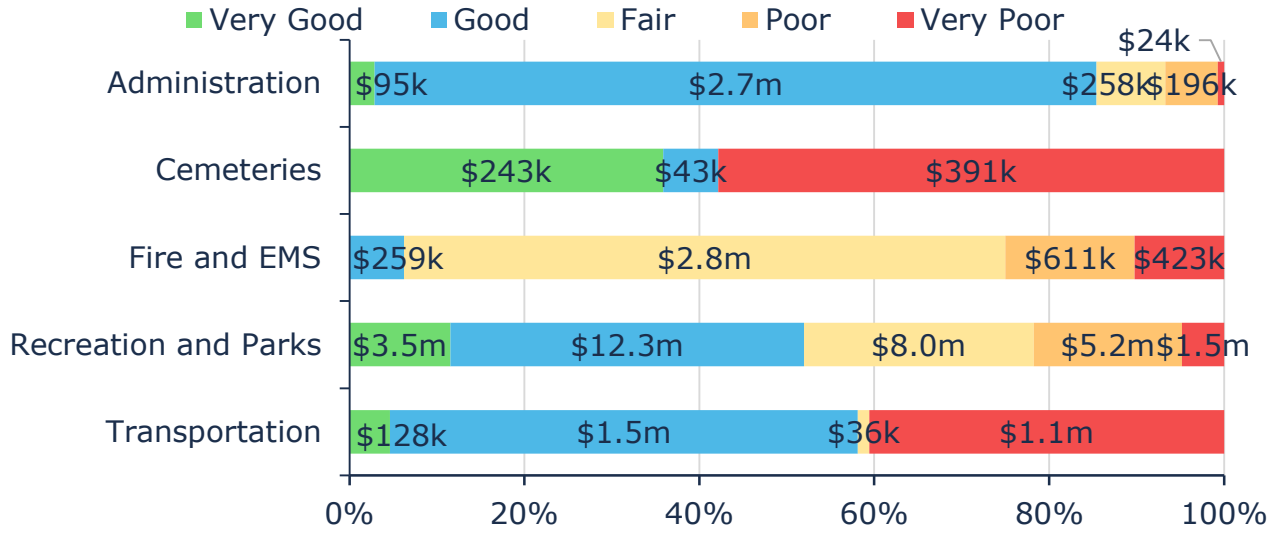
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 32 Facilities Average Age vs Average EUL



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

Figure 33 Facilities Condition Breakdown



To ensure that the municipal 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.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

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

- Building condition assessments are currently underway.
- Facilities receive internal inspections on an ad-hoc basis. The Town relies on internal resources to ensure that municipal buildings are in a state of adequate condition.

Lifecycle Management Strategy

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

Figure 34 Facilities Current Lifecycle Strategy

Maintenance/Rehabilitation

- Contractor Inspections, Staff inspections and HVAC maintenance.

Replacement

- Roof and HVAC replacements based on inspection results
- As identified through repairs and driven by capacity upgrades
- Only components are replaced, full facility replacement is due to growth or location change.
- 15-year plan was developed and is reviewed annually. Future BCA planned for 2025 -2027

Risk & Criticality

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

Figure 35 Facilities Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$6,935,419	$10,079,944	$3,736,402	$13,400,007	$7,125,821
(17%)	(24%)	(9%)	(32%)	(17%)

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

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

Levels of Service

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

Current Levels of Service

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

Table 18 Facilities Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
A description of the facilities provided within municipal facilities.	The Town owns 32 buildings supporting transportation services, recreation & parks, fire services, EMS, and administration	Scope	Replacement Cost	$41,277,593
			Quantity	32
Description of the condition of municipal facilities	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Fair (54%)
			% Condition > Fair	77%
			% Condition poor and very poor	23%
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	49%
			Average Risk	Moderate
			Annual reinvestment	$158,640
			Capital reinvestment rate	0.38%

Proposed Levels of Service

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

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

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

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

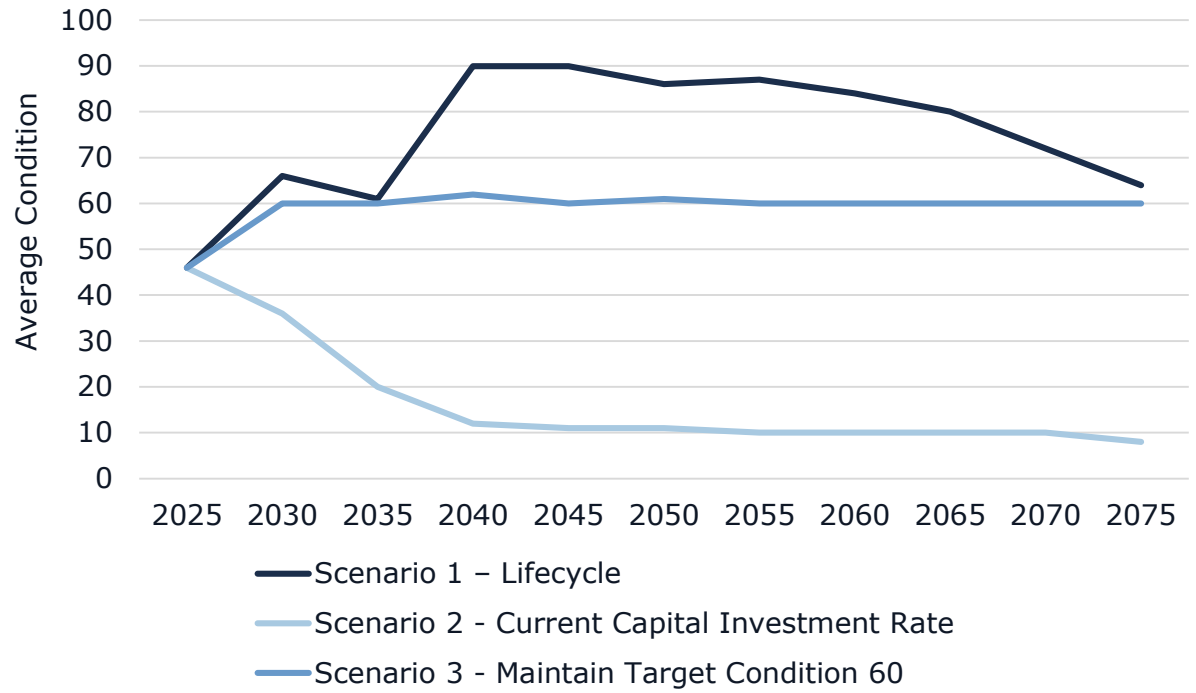
The table below outlines the results for each scenario for the municipal facilities.

Table 19 Facilities Scenario Results

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

The recommended scenario for the facilities is Scenario 3 Maintain Target Condition of Good at 60%. The figure below shows the condition projection for 50-years for each scenario.

Figure 36 Projected Average Condition for Each Scenario for 50-Years



Appendix E: Fleet

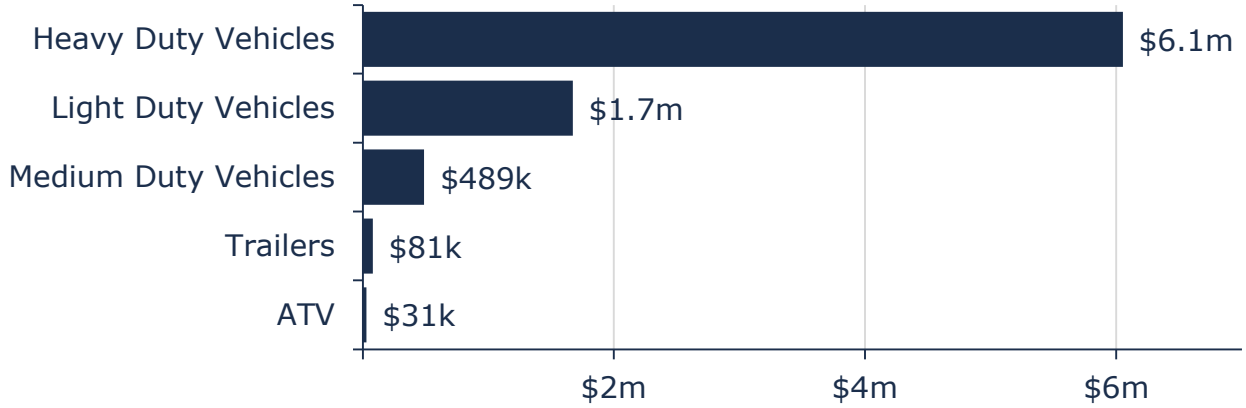
Fleet vehicles allow staff to efficiently deliver municipal services and personnel. Municipal fleet is used to support several service areas, including:

- fire rescue heavy duty vehicles to provide emergency services
- pick-up trucks or light duty to support the maintenance of the transportation network and address service requests for public works
- medium duty and trailers for parks and recreation operations
- heavy duty vehicles for winter control activities

Inventory & Valuation

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

Figure 37 Fleet Replacement Costs

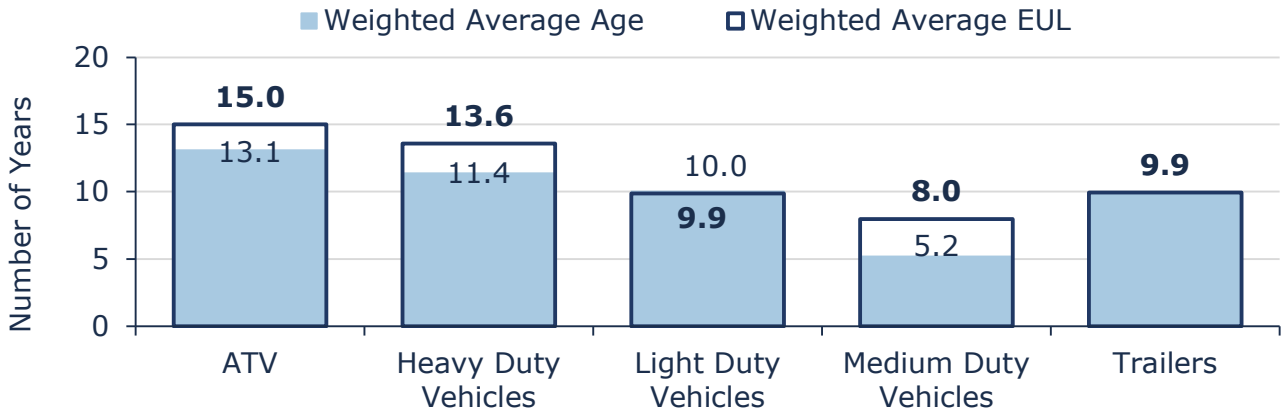


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

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

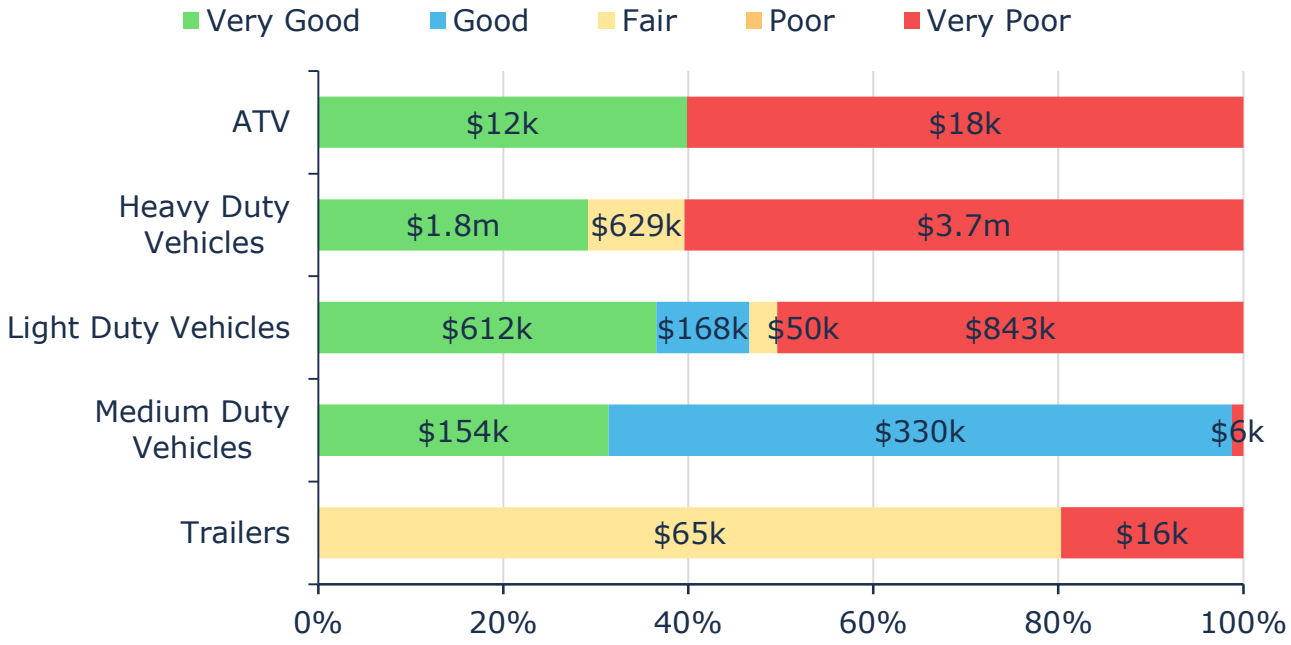
Figure 38 Fleet Average Age vs Average EUL



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

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

Figure 39 Fleet Condition Breakdown



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

Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of vehicles to ensure they are in a state of adequate repair prior to operation
- Kilometers, purchase to repair ratio, and general condition of the asset, are used as proxies to determine remaining useful life and relative vehicle condition

Lifecycle Management Strategy

The condition or performance of assets will deteriorate over time. To ensure vehicles are performing as expected, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

Figure 40 Fleet Current Lifecycle Strategy

Maintenance / Rehabilitation

- Visual inspections completed and documented daily / weekly

Replacement

- Pertinent vehicle attributes such as: age, kilometres and annual repair costs are taken into consideration when determining appropriate treatment options

Risk & Criticality

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

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

Figure 41 Fleet Risk Breakdown

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$2,602,717 (31%)	$961,488 (12%)	- (0%)	$764,263 (9%)	$3,986,410 (48%)

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

Levels of Service

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

Current Levels of Service

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

Table 20 Fleet Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
A description of the types of fleet assets	Heavy duty vehicles to provide emergency services and winter control activities. Light duty to support the maintenance of the transportation network and address customer service requests. Medium duty and trailers for parks and recreation operations	Scope	Replacement Cost	$8,314,878.00
			Quantity (assets)	57
Description of the condition of fleet assets	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Poor (39%)
			% Condition > Fair	45%
			% Condition poor and very poor	55%
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	57%
			Average Risk	High
			Annual reinvestment	$149,395
			Capital reinvestment rate	1.80%

Proposed Levels of Service

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

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

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

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

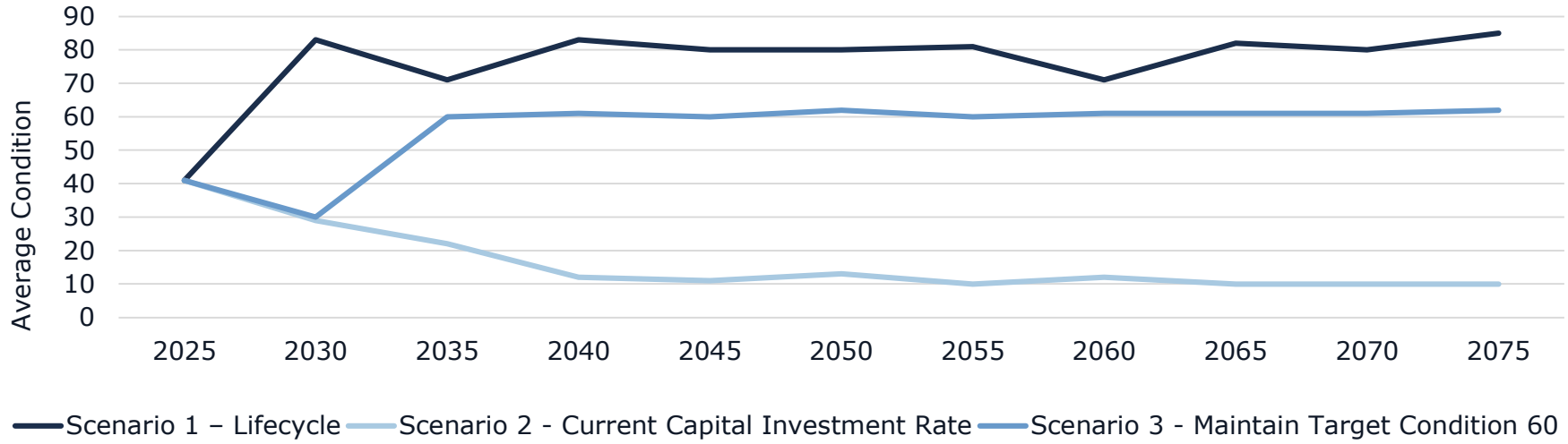
The table below outlines the results for each scenario for the equipment and furniture assets.

Table 21 Fleet Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$8,327,126	Good (76%)	$741,726
Scenario 2 - Current Capital Investment Rate	$8,327,126	Very Poor (13%)	$149,395
Scenario 3 – Maintain Target Condition Good	$8,327,126	Good (60%)	$584,583

The recommended scenario for fleet is Scenario 3 Maintain Target Condition of Good at 60%. The figure below shows the condition projection for 50-years for each scenario.

Figure 42 Projected Average Condition for Each Scenario for 50-Years



Appendix F: Machinery & Equipment

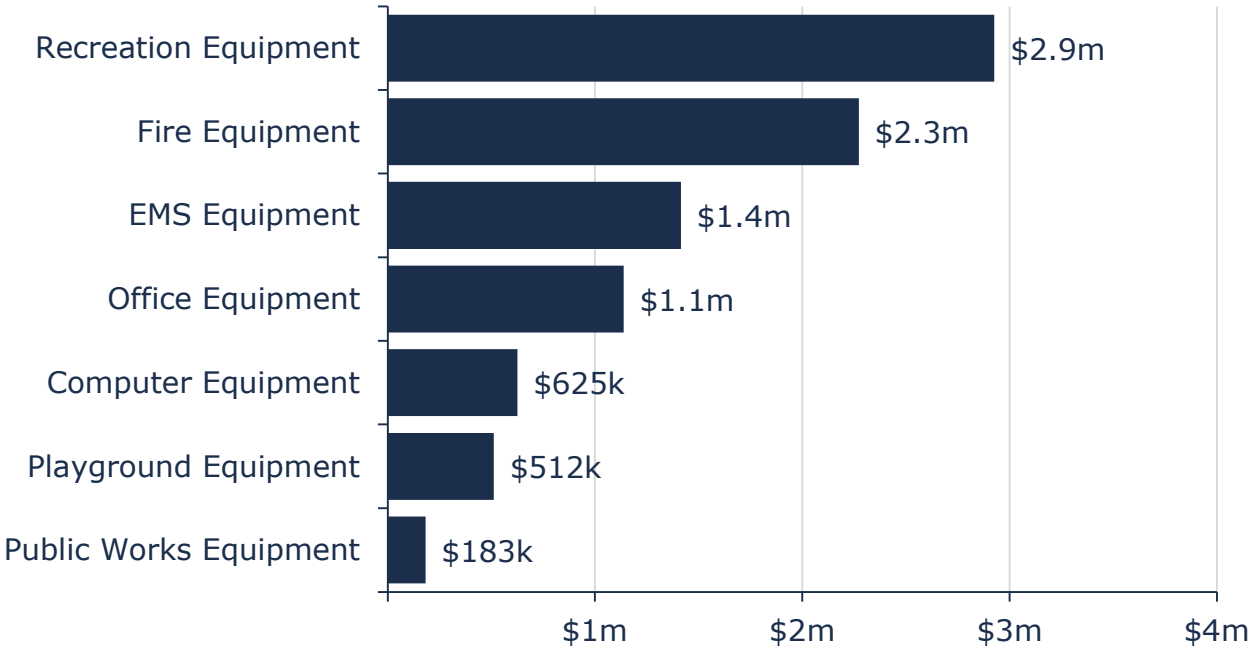
The Town of Minto owns and maintains numerous Machinery & Equipment that provide key services to the community. These include:

- Computer Equipment
- EMS Equipment
- Fire Equipment
- Office Equipment
- Playground Equipment
- Public Works Equipment
- Recreation Equipment
- Safety Equipment

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in the Minto's machinery & equipment inventory.

Figure 43 Machinery & Equipment Replacement Costs

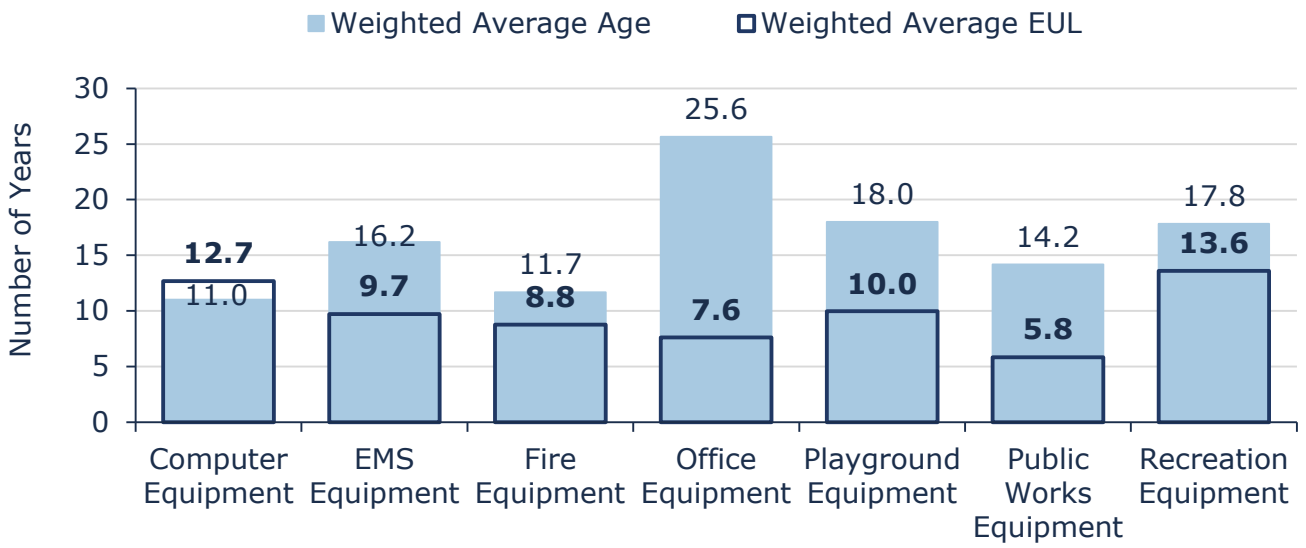


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent capital requirements.

Asset Condition & Age

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

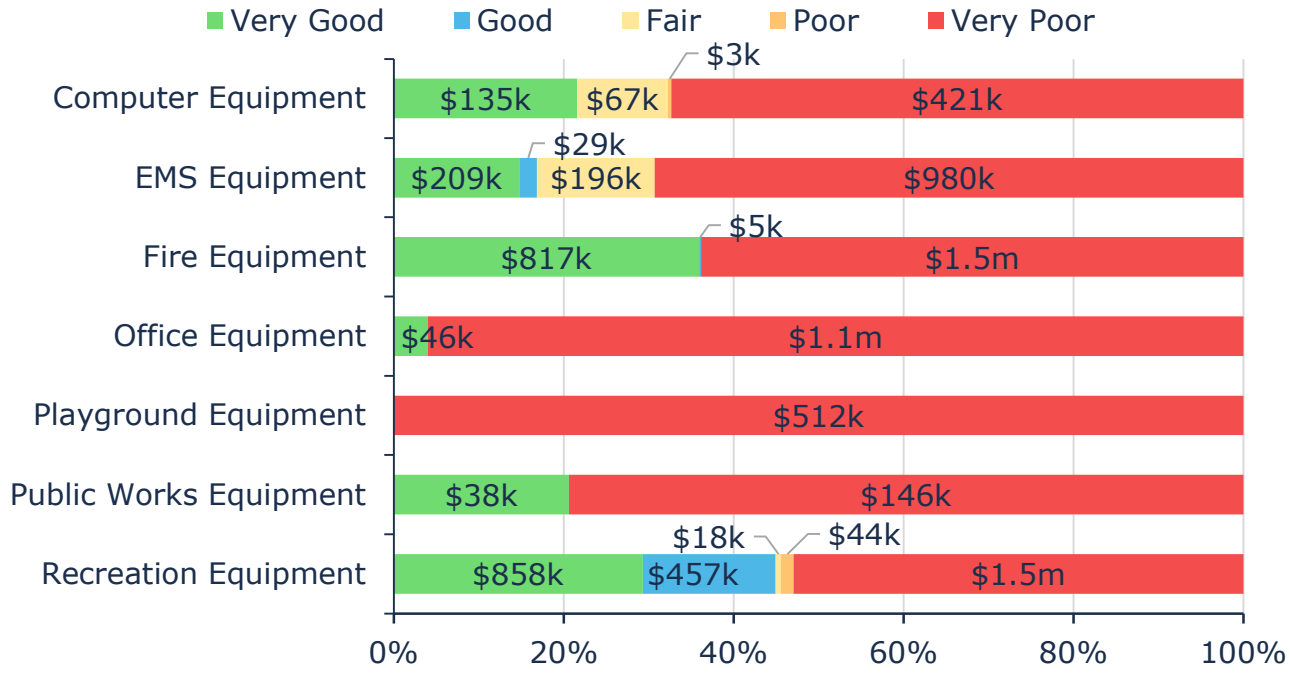
Figure 44 Machinery & Equipment Average Age vs Average EUL



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

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

Figure 45 Machinery & Equipment Condition Breakdown



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

Current Approach to Condition Assessment

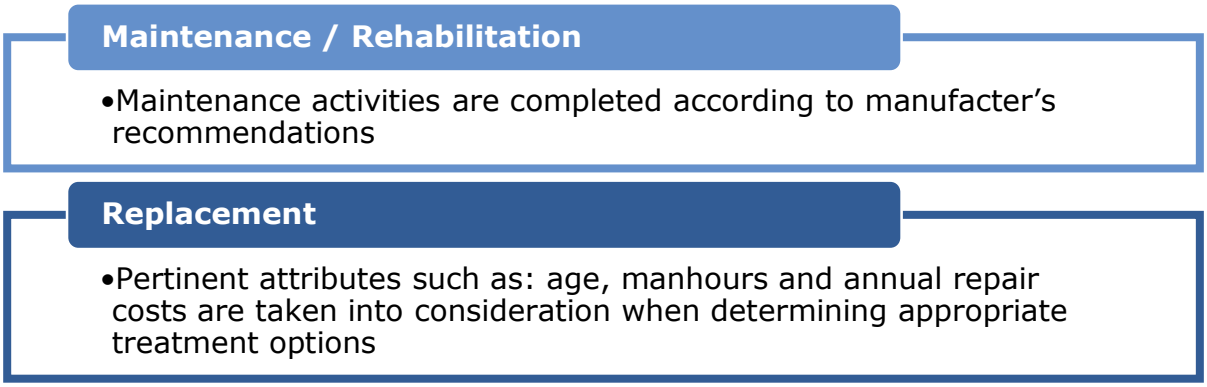
Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets more confidently. The following describes the Town's current approach:

- Currently, there is no formal condition assessment program. (Age-based)
- Equipment receives inspections on an ad-hoc basis. The Town relies on internal resources to ensure that municipal machinery and equipment are in a state of adequate condition.

Lifecycle Management Strategy

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

Figure 46 Machinery & Equipment Current Lifecycle Strategy



Risk & Criticality

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

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

Figure 47 Machinery & Equipment Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$2,960,592	$1,962,241	$79,015	$1,269,604	$2,804,685
(33%)	(22%)	(<1%)	(14%)	(31%)

Levels of Service

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

Current Levels of Service

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

Table 22 Machinery & Equipment Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
A description of the types of machinery and equipment	Machinery and equipment support transportation services, fire and EMS as well as administration, recreation, parks and health services	Scope	Replacement Cost	$9,076,137.00
			Quantity (assets)	13,357
Description of the condition of vehicles	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Poor (28%)
			% Condition > Fair	32%
			% Condition poor and very poor	68%
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	45%
			Average Risk	Moderate
			Annual reinvestment	$141,549
			Capital reinvestment rate	1.56%

Proposed Levels of Service

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

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

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

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

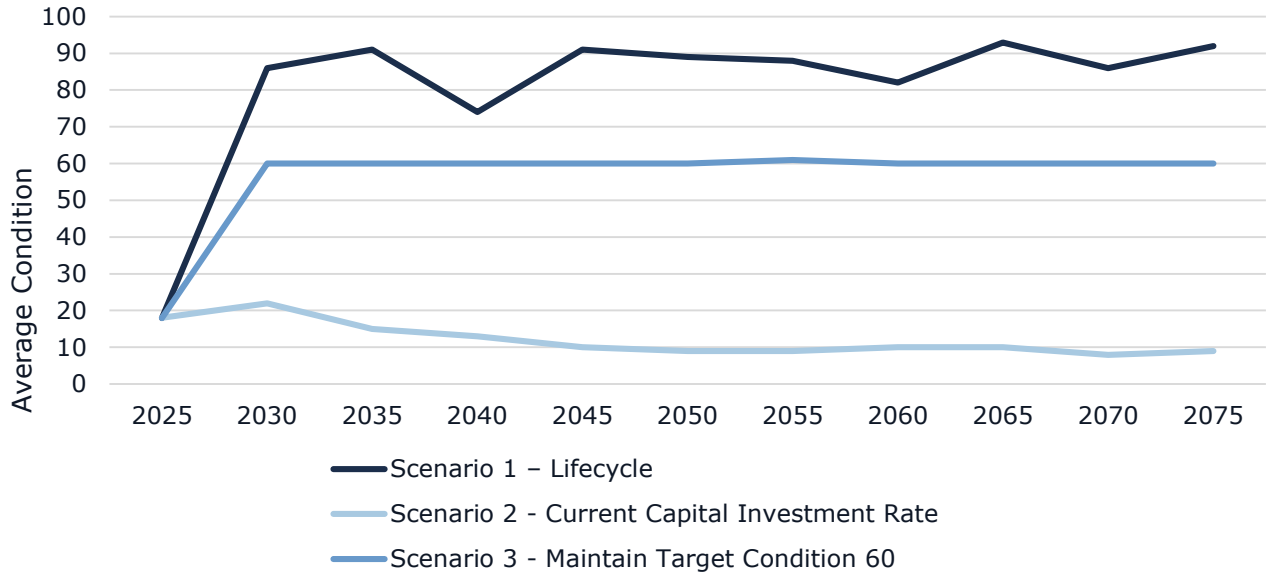
The table below outlines the results for each scenario for the machinery and equipment assets.

Table 23 Machinery & Equipment Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$9,076,137	Good (73%)	$1,222,986
Scenario 2 - Current Capital Investment Rate	$9,076,137	Very Poor (11%)	$141,549
Scenario 3 – Maintain Target Condition Good	$9,076,137	Good (60%)	$975,407

The recommended scenario for machinery and equipment is Scenario 3 Maintain Target Condition of Good at 60%. The figure below shows the condition projection for 50-years for each scenario.

Figure 48 Projected Average Condition for Each Scenario for 50-Years



Appendix G: Land Improvements

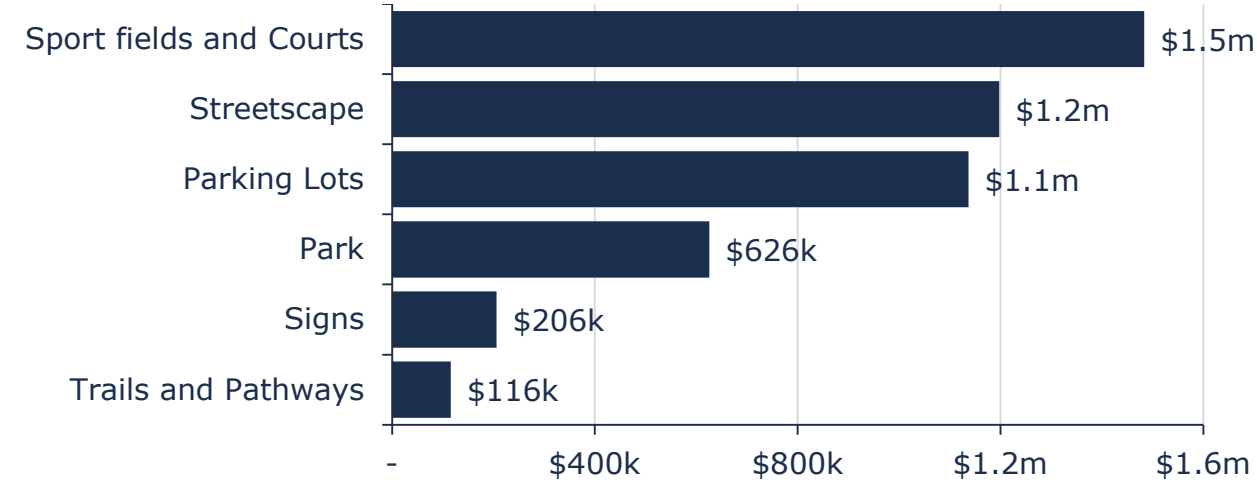
The Town of Minto owns a small number of assets that are considered Land Improvements. This category includes:

- Parks, playing fields
- Monuments and landscaping, trails, and other assets
- Parking lots and signs
- Streetscape

Asset Inventory & Valuation

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

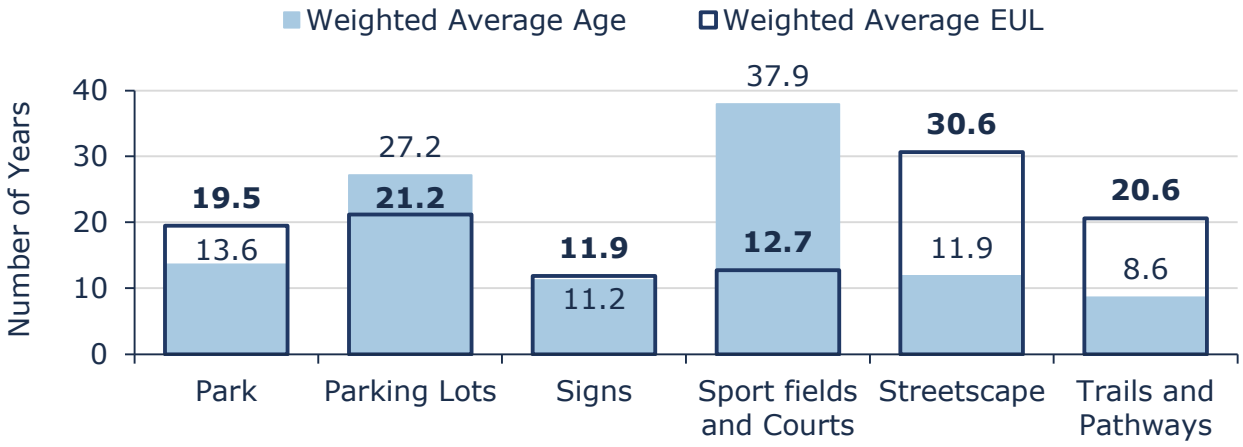
Figure 49 Land Improvements Replacement Cost



Asset Condition & Age

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

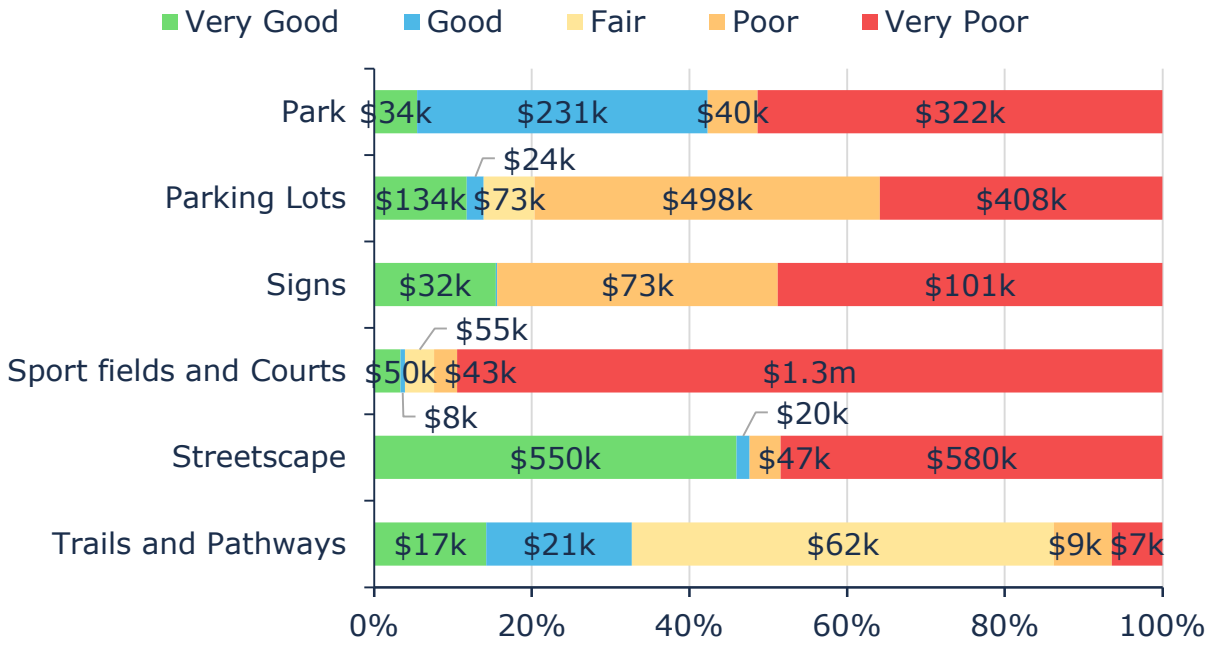
Figure 50 Land Improvements Average Age vs Average EUL



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

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

Figure 51 Land Improvement Condition Breakdown



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 activities is required to increase the overall condition of the land improvements.

Current Approach to Condition Assessment

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

- While land improvement assets are monitored, except for playgrounds there are no formal condition assessment programs in place. Staff mostly rely on age to determine a proxy of condition.

Lifecycle Management Strategy

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

Figure 52 Land Improvements Current Lifecycle Strategy

Maintenance / Rehabilitation

- Playground Structures Inspections weekly per CSA standard
- Trails and Sports fields are inspected annually

Replacement

- Based on inspection results and based on lifecycle and staff recommendations

Risk & Criticality

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

Figure 53 Land Improvement Risk Breakdown

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$1,510,573 (32%)	$197,528 (4%)	$207,641 (4%)	$552,735 (12%)	$2,298,087 (48%)

This is a high-level model developed by municipal staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The identification of critical assets allows the Town to determine appropriate risk mitigation strategies and treatment options.

Levels of Service

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

Current Levels of Service

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

Table 24 Land Improvements Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
A description of the different types of land improvements	Parks, playing fields, and related structures, monuments and landscaping, trails, parking lots and signs as well as streetscape.	Scope	Replacement Cost	$4,766,564
			Quantity (feet)	1,246
Description of the condition of vehicles	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service	Quality / Reliability	Average Condition	Poor (30%)
			% Condition > Fair	28%
			% Condition poor and very poor	72%
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	60%
			Average Risk	High
			Annual reinvestment	$7,200
			Capital reinvestment rate	0.15%

Proposed Levels of Service

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

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

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

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

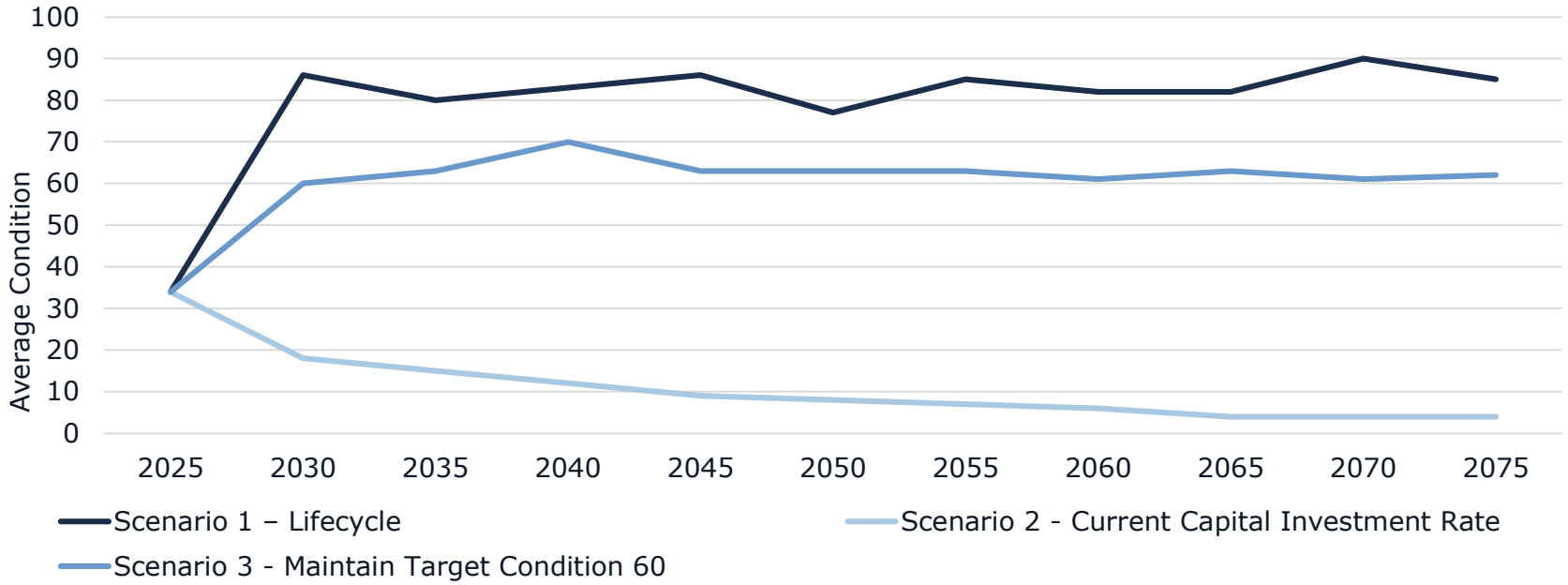
The table below outlines the results for each scenario for the land improvement assets.

Table 25 Land Improvement Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$4,766,564	Good (78%)	$330,440
Scenario 2 - Current Capital Investment Rate	$4,766,564	Very Poor (6%)	$7,200
Scenario 3 – Maintain Target Condition Good	$4,766,564	Good (60%)	$263,517

The recommended scenario for land improvements is Scenario 3 Maintain Target Condition of Good at 60%. The figure below shows the condition projection for 50-years for each scenario.

Figure 54 Projected Average Condition for Each Scenario for 50-Years



Appendix H: Water System

The Town is responsible for providing water services to residents through the collection, storage and distribution of water.

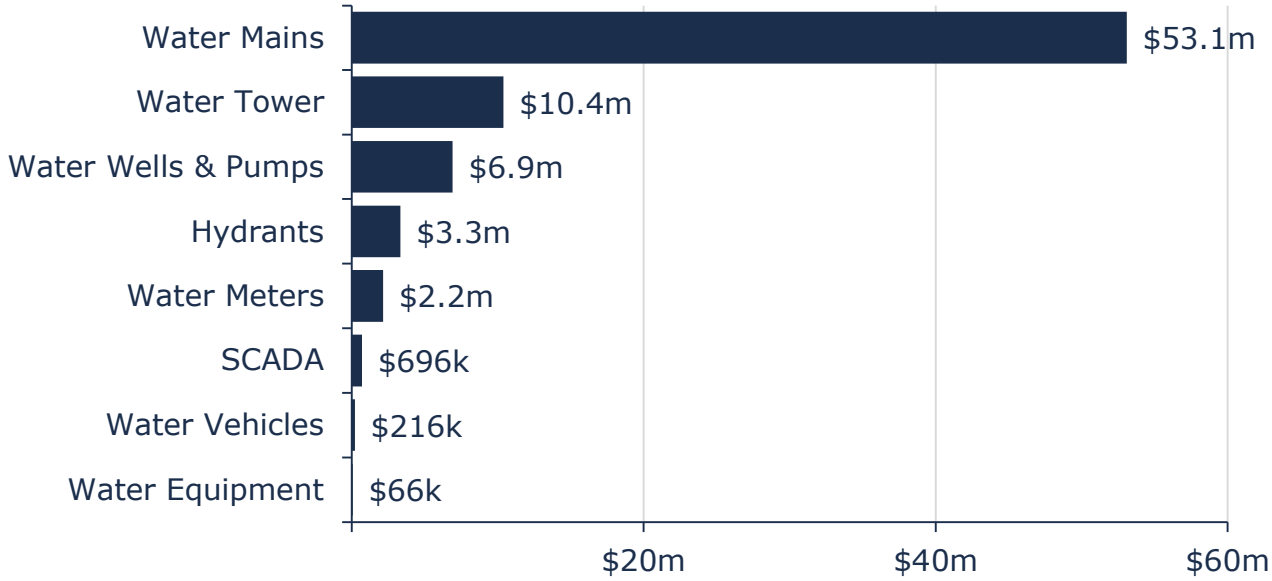
Water infrastructure is managed by the Water Division and consists of:

- 4 overall water systems located in Clifford, Harrison, Minto Pines and Palmerston;
- 53 km of water mains;
- 266 hydrants;
- 3 water towers
- 11 dry wells and eight well houses;
- vehicles, specialized machinery and equipment to support in the management and delivery of water services.
- SCADA systems

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Minto's water network inventory.

Figure 55 Water System Replacement Cost

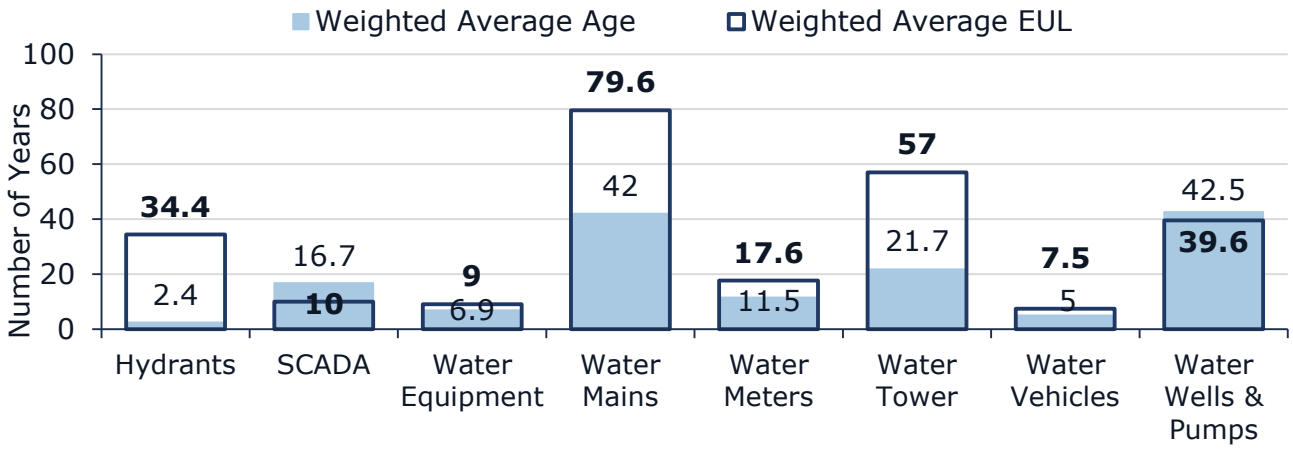


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

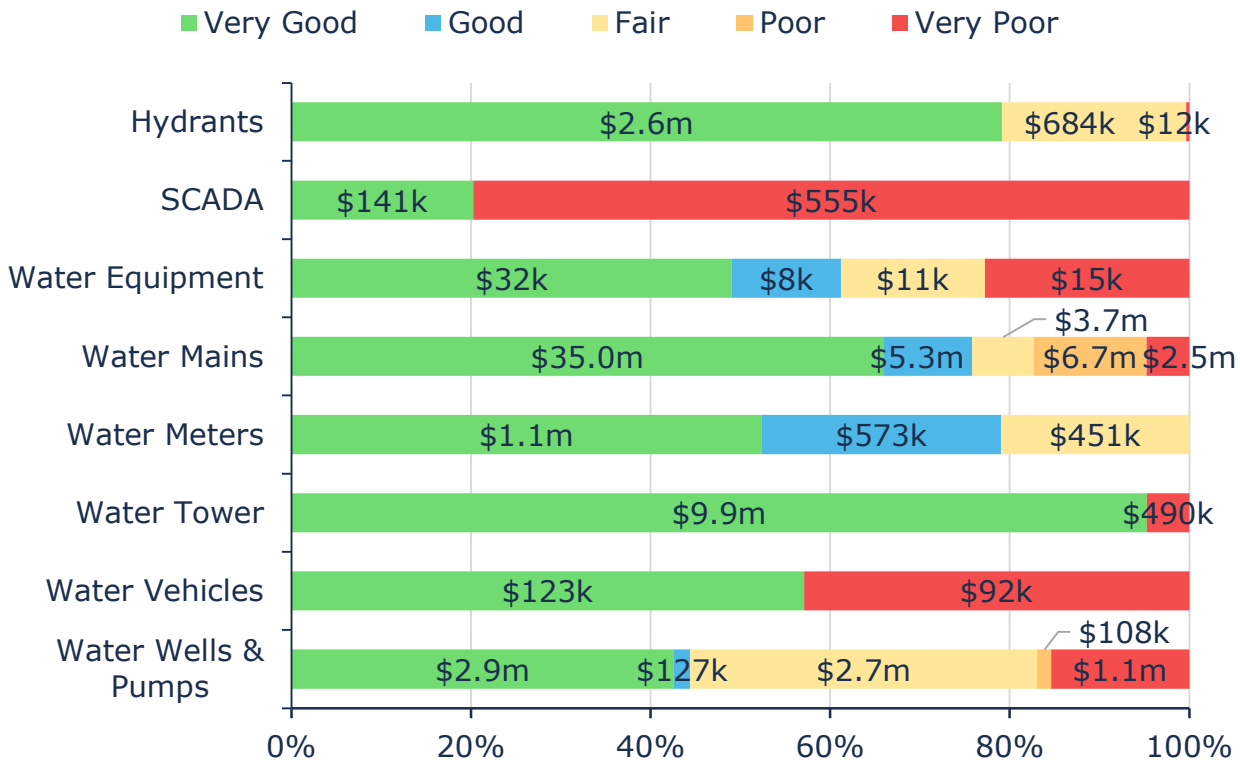
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 56 Water System Average Age vs Average EUL



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

Figure 57 Water System Condition Breakdown



To ensure that the Town's water system 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 the lifecycle management strategy to determine what combination of activities is required to increase the overall condition of the water system.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

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

- Inspections as required under O. Reg. 170/3: Drinking Water Systems are conducted
- Wells and pumps are monitored under an established schedule.
- Staff utilize a variety of metrics including age, pipe material and diameter, location and number of infrastructure failures including watermain breaks, to determine the projected condition of linear assets

Lifecycle Management Strategy

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

Figure 58 Water System Current Lifecycle Strategy

Maintenance

- Above ground operational valves undergo annual maintenance as part of preventative maintenance
- Wells and pumps are inspected and undergo maintenance under a formal schedule
- Main flushing of the entire network is conducted twice a year
- Periodic pressure testing occurs to identify deficiencies and potential leaks

Replacement

- In the absence of mid-lifecycle rehabilitative activities, most mains are simply maintained with the goal of full replacement once service life is exceeded
- Water main replacement is prioritized based on an analysis of the main break rate, asset functionality and design capacity as well as any issues identified during maintenance activities
- Like other sub-surface infrastructure, Staff coordinate water replacement projects with road reconstruction projects to produce cost efficiencies

Risk & Criticality

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

Figure 59 Water System Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$62,888,655	$3,904,085	$1,221,842	$2,062,055	$4,111,280
(85%)	(5%)	(2%)	(3%)	(6%)

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

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

Levels of Service

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

Current Levels of Service

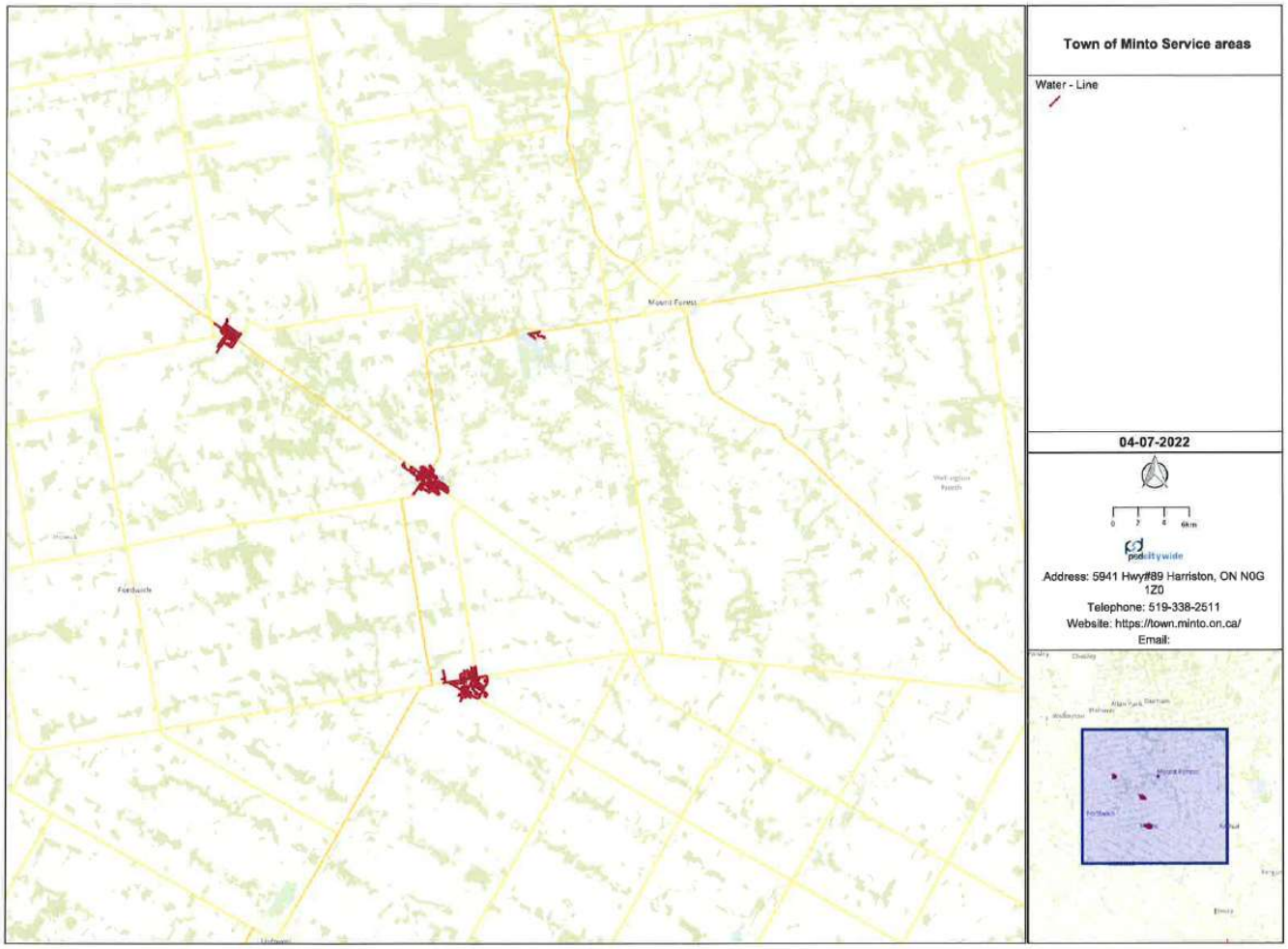
The following tables identify the Town's current level of service for the water system. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Town has selected.

Table 26 Water System Current Levels of Service

Community LOS		Service Attribute	Technical LOS	
Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	The urban areas of Clifford, Harrison and Palmerston as well as the rural area of Minto Pines are all connected to the municipal water infrastructure. See Figure 60 Map of Water	Scope	Replacement Cost	$76,862,992
			Quantity (km of main)	54
			Quantity (# of Plants)	4
Description, which may include maps, of the user groups or areas of the municipality that have fire flow	All areas serviced by the municipal water infrastructure have fire flow except for the Minto Pines subdivision which draws water from the ponds in the event of an emergency.		% of properties connected to the municipal water system	71%
			% of properties where fire flow is available	100%
Description of boil water advisories and service interruptions	Boil water advisories are rare. They are triggered by adverse water samples, watermain breaks, massive flooding or pump/equipment and maintenance failures. The highest risk system is a small rural area servicing 35 homes.	Quality / Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0.05
			# of connection-days per year where water is not available to water main breaks compared to the total number of properties connected to the municipal water system	0
Description of the condition of the water network	Condition Description • Very Good - Fit for the future • Good - Adequate for now • Fair - Requires attention • Poor - Increased potential of affecting service • Very Poor - Unfit for sustained service		Average Condition	Good (76%)
			% Condition > Fair	85%
			% Condition poor and very poor	15%

Community LOS	Service Attribute	Technical LOS	
Services will be provided to ensure long-term sustainability.	Performance	% Risk that is High and Very High	9%
		Average Risk	Very Low
		Annual reinvestment	$922,350
		Capital reinvestment rate	1.20%

Figure 60 Map of Water System



Proposed Levels of Service

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

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

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

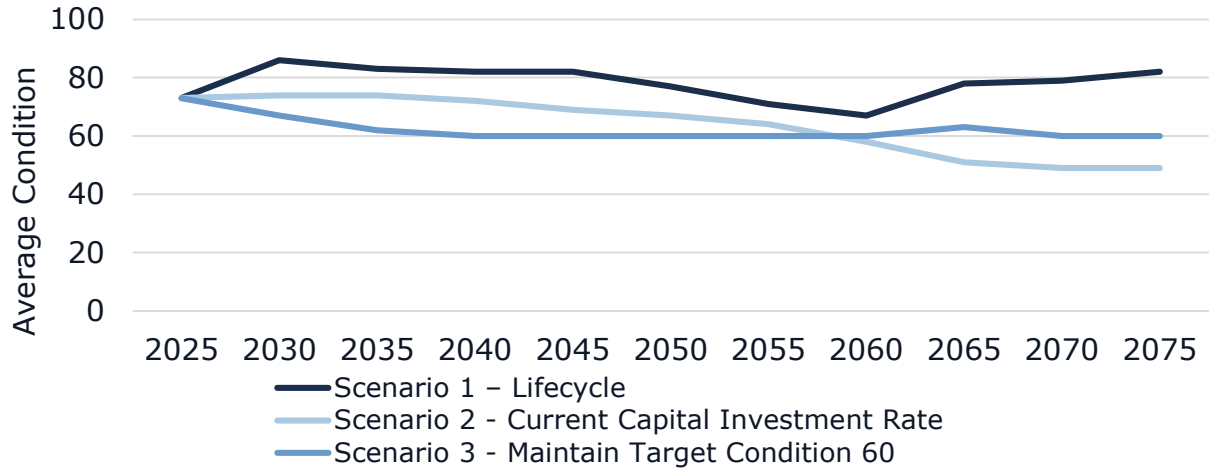
Scenario 3: Maintain Target Condition Good - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

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

Table 27 Water System Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$76,862,992	Good (78%)	$1,461,581
Scenario 2 - Current Capital Investment Rate	$76,862,992	Fair (56%)	$922,350
Scenario 3 – Maintain Target Condition Good	$76,862,992	Good (60%)	$1,034,328

Figure 61 Projected Average Condition for Each Scenario for 50-Years



For the water system, the proposed level of service will remain unchanged until a comprehensive review of the system is completed. This includes a full system review, rate study, condition assessment, and the development of a financial plan, all of which are scheduled for completion in 2026.

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

Appendix I: Sanitary Sewer System

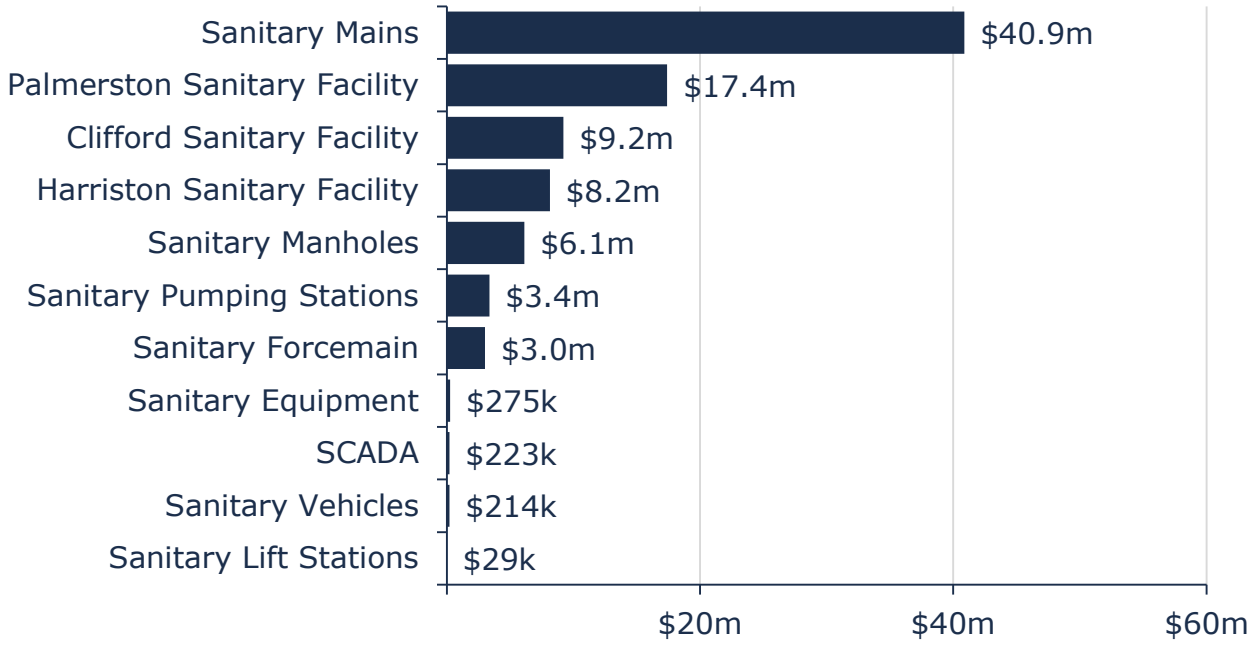
The Town is responsible for providing sanitary sewer services to residents through the collection, storage and treatment of sanitary sewage. Sanitary sewer infrastructure is managed by the Wastewater Division and consists of:

- 3 sanitary treatment facilities in Clifford, Harrison, and Palmerston.
- 44 km of sanitary mains.
- 1.2 km of sanitary force mains.
- 172 maintenance holes.
- 5 lift stations.
- vehicles, specialized machinery and equipment to support in the management and delivery of sanitary sewer services.
- SCADA systems.

Inventory & Valuation

The graph below displays the total replacement cost of each asset segment in Minto's sanitary network inventory.

Figure 62 Sanitary Sewer System Replacement Cost

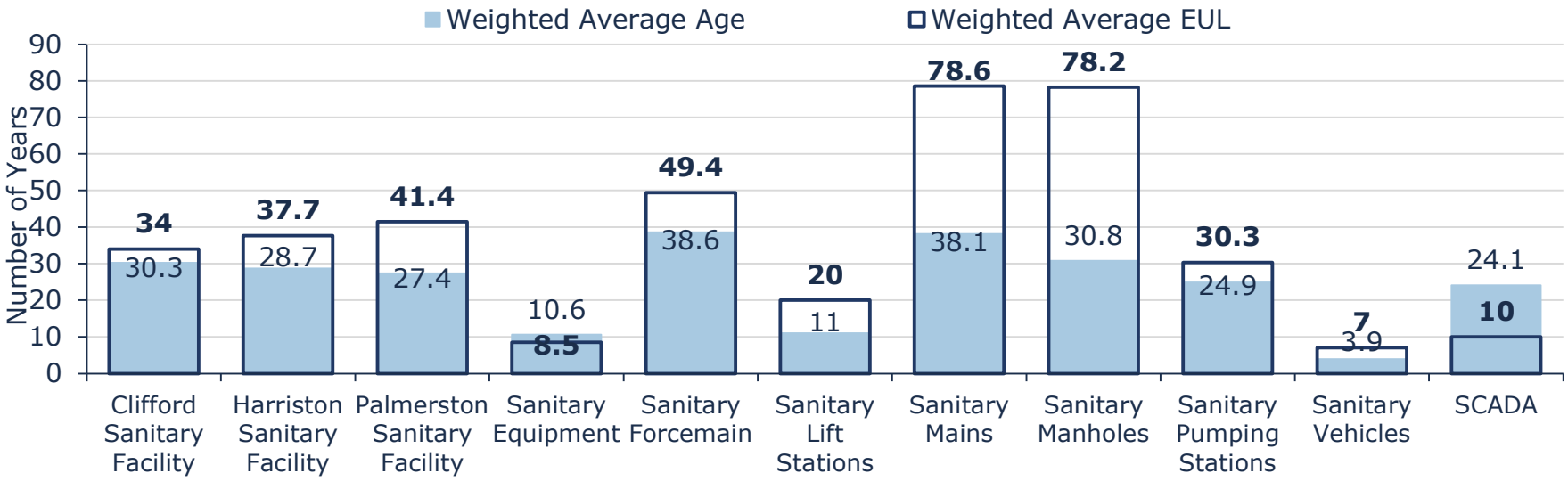


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

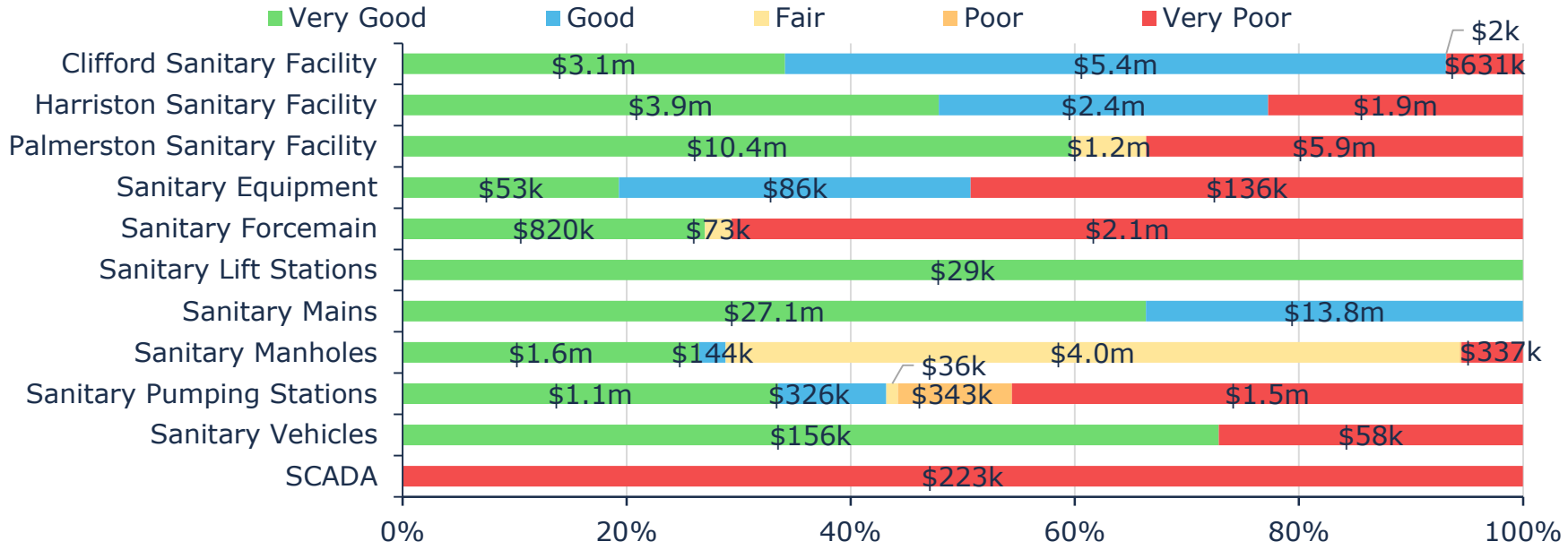
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 63 Sanitary Sewer System Average Age vs Average EUL



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

Figure 64 Sanitary Sewer System Condition Breakdown



To ensure that the Town's sanitary sewer system 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 activities is required to increase the overall condition of the sanitary sewer system.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

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

- CCTV inspections are conducted on as-needed basis as well as in coordination with road and/or other subsurface construction projects
- Sanitary facilities are inspected under an established schedule and deficiencies are tracked through the Supervisory Control and Data Acquisition (SCADA) system
- Staff rely on a variety of metrics including age, pipe material and diameter, location, and available CCTV assessments to determine the projected condition of linear assets

Lifecycle Management Strategy

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

Figure 65 Sanitary Sewer System Current Lifecycle Strategy

Maintenance

- Annual maintenance of mains that consists of main flushing, rodding and inspections
- Annual maintenance of manholes that consists of manhole inspection, lid replacement, lining and grouting
- Inspection and maintenance of sanitary facilities is determined from through the SCADA system

Replacement

- Trenchless re-lining has the potential to reduce total lifecycle costs
- Like other sub-surface infrastructure staff attempt to coordinate sanitary sewer capital projects with road reconstruction projects to produce cost efficiencies

Risk & Criticality

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

Figure 66 Sanitary Sewer System Risk Breakdown

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$53,554,793	$13,633,098	$2,692,349	$9,210,446	$9,863,712
(60%)	(15%)	(3%)	(10%)	(11%)

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

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

Levels of Service

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

Current Levels of Service

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

Table 28 Sanitary Sewer System Current Levels of Service

Community LOS		Service Attribute	Current Technical LOS	
Description, which may include maps, of the user groups or areas of the town that are connected to the municipal wastewater system	The urban areas of Clifford, Harrison and Palmerston are connected to the municipal sanitary sewer infrastructure. See Figure 67 Map of Sanitary	Scope	Replacement Cost	$88,954,398
			Quantity (Kilometers)	80
			% of properties connected to the municipal wastewater system	62%
Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	The Town does not own any combined sewers	Quality / Reliability	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	N/A
Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	The Town does not own any combined sewers		# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	1
Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	The Town does not own any combined sewers		# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	1

Community LOS		Service Attribute	Current Technical LOS	
Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g., weeping tiles). In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its designed capacity.		Average Condition	Good (69%)
Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration	The Town follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers.		% Condition > Fair	85%
			% Condition poor and very poor	15%
Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.		# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	N/A
Services will be provided to ensure long-term sustainability.		Performance	% Risk that is High and Very High	21%
			Average Risk	Low
			Annual reinvestment	$149,395
			Capital reinvestment rate	0.17%

Figure 67 Map of Sanitary Sewer System

Proposed Levels of Service

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

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

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

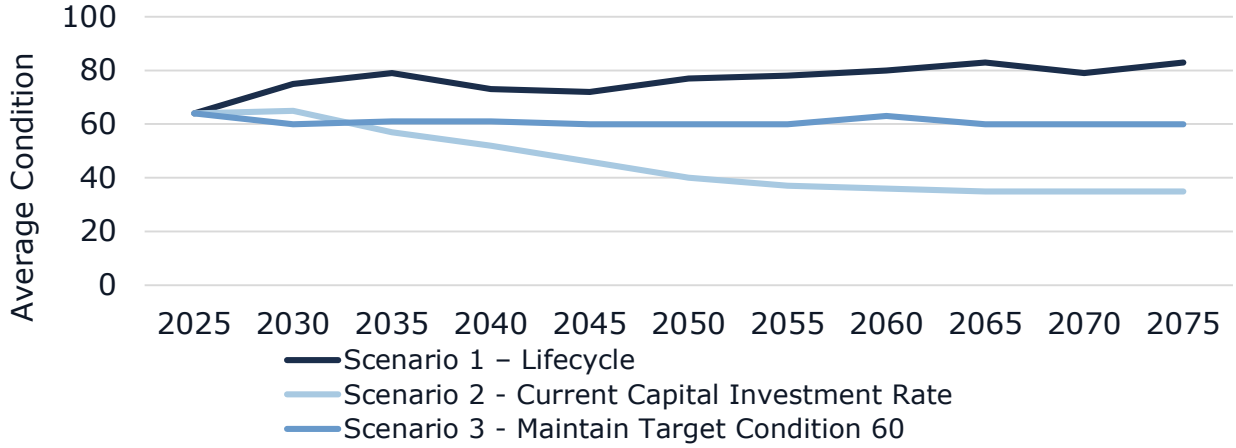
Scenario 3: Target Condition Fair - this scenario utilizes a target average condition of 60% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

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

Table 29 Sanitary Sewer System Scenario Results

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Lifecycle	$88,954,398	Good (77%)	$2,345,669
Scenario 2 - Current Capital Investment Rate	$88,954,398	Fair (43%)	$858,933
Scenario 3 – Maintain Target Condition Good	$88,954,398	Good (60%)	$1,391,066

Figure 68 Projected Average Condition for Each Scenario for 50-Years



For the sanitary sewer system, the proposed level of service will remain unchanged until a comprehensive review of the system is completed. This includes a full system review, rate study, and the development of a financial plan, all of which are scheduled for completion in 2026.

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

Appendix J: Green Infrastructure Assets

Ontario Regulation 588/17 includes green infrastructure assets in the definition of Municipal Infrastructure Assets. Green infrastructure assets consist of natural or human-made elements that provide ecological and hydrological functions and processes, including natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces and green roofs. It is expected that while O Reg 588/17 encourages standardization and consistency, the uniqueness of Natural Assets will require municipalities to be flexible in creating plans unique to their circumstances.

Currently, Natural Assets are not included in the asset database of the Town of Minto. However, Minto staff are aware of the importance of municipally owned Natural Assets and the advantages of recognizing their value to the Town and its residents. This is increasingly important as the challenges and risks resulting from Climate Change have become more apparent. The goal is to value these assets at their replacement cost; however, this is difficult to quantify. There are currently no internationally recognized standards for these valuations. However, putting some kind of financial value on these assets can lead to better decisions when weighing short-term economic benefits against long-term environmental and social benefits. Several Canadian municipalities are taking the first steps to recognize the value of these assets. For example, the City of Mississauga has valued the worth of the share of municipally owned natural assets at $8,000 - $10,000 per property.

Staff have participated in the Natural Asset Management Roadmap Program, in conjunction with the Natural Assets Initiative, and the Climate Change and Green Infrastructure program under Asset Management Ontario. Local Conservation Authorities, the County of Wellington Planning and Climate Change departments and Wellington Source Water Protection have been consulted to obtain data regarding Minto Natural Assets. Considerable gaps in available information have been identified. A plan to gather more data with the goal of including these assets in the Asset Management Plan will be brought forward later in 2026.

Appendix K: Condition Assessment Guidelines

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

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

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

Role of Asset Condition Data

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

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

Guidelines for Condition Assessment

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

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that

should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project.

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

Developing a Condition Assessment Schedule

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

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

Appendix L: Risk Rating Criteria

General Risk Definitions

Risk	Integrating a risk management framework into your asset management program requires the translation of risk potential into a quantifiable format. This will allow you to compare and analyze individual assets across your entire asset portfolio. Asset risk is typically defined using the following formula: Risk = Probability of Failure (POF) x Consequence of Failure (COF)
Probability of Failure (POF)	The probability of failure relates to the likelihood that an asset will fail at a given time. The current physical condition and service life remaining are two commonly used risk parameters in determining this likelihood.
POF - Structural	The likelihood of asset failure due to aspects of an asset such as load carrying capacity, condition or breaks
POF - Functional	The likelihood of asset failure due to its performance
POF - Range	1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain
Consequences of Failure (COF)	The consequence of failure describes the overall effect that an asset's failure will have on an organization's asset management goals. Consequences of failure can range from non-eventful to impactful: a small diameter water main break in a subdivision may cause several rate payers to be without water service for a short time. However, a larger trunk water main may break outside a hospital, leading to significantly higher consequences.
COF - Economic	The monetary consequences of asset failure for the organization and its customers
COF - Social	The consequences of asset failure on the social dimensions of the community
COF - Environmental	The consequence of asset failure on an asset's surrounding environment
COF - Operational	The consequence of asset failure on the Town's day-to-day operations
COF - Health & safety	The consequence of asset failure on the health and well-being of the community
COF - Strategic	The consequence of asset failure on strategic planning
COF - Range	1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe

Probability of Failure

Asset Category	Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
Roads, Bridges & Culverts	Condition	80%	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
	% Service Life Remaining	20%	>40%	1
			30 - 40%	2
			20 – 30%	3
			10 – 20%	4
			<10%	5
All Others	Condition	60%	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
	% Service Life Remaining	40%	>40%	1
			30 - 40%	2
			20 – 30%	3
			10 – 20%	4
			<10%	5

Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Road Network (roads)	Economic (50%)	AMP Segment	Gravel	2
			Surface Treated	3
			Asphalt	4
	Operational (50%)	Roadside Environment	Rural	1
			Semi – Urban	3
			Urban	4
		AADT Ranges	0-49	1
			50-199	2
			200-399	3
			400-1000	4
		Speed Limit	20	1
			40	2
			60	3
			80	4
			100	5
Road Network (not roads)	Economic (50%)	Replacement Cost ($)	< 25,000	1
			25,000-70,000	2
			70,000-350,000	3
			350,000-700,000	4
			700,000<	5
	Operational (50%)	Roadside Environment	Rural	1
			Semi – Urban	3
			Urban	4
		AADT Ranges	0-49	1
			50-199	2
			200-399	3
			400-1000	4
		Speed Limit	20	1
			40	2
			60	3
			80	4
			100	5

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Bridges & Culverts	Economic (80%)	Replacement Cost ($)	< 25,000	1
			25,000-70,000	2
			70,000-350,000	3
			350,000-700,000	4
			700,000<	5
	Operational (20%)	Bridge AADT (#)	50	1
			100	2
			200	3
			300	4
			1200	5
Storm Sewer, Sanitary Sewer & Watermains	Economic (50%)	Diameter (mm)	250 / 150 / 100	1
			500 / 300 / 150	2
			750 / 450 / 200	3
			1000 / 600 / 300	4
			2000	5
	Operational (50%)	Material Type	PVC, PE	1
			Clay, Steel	3
			Concrete, AC	5
Non-Linear	Economic (50%)	Replacement Cost ($)	< 25,000	1
			25,000-70,000	3
			70,000-350,000	5
			350,000-700,000	4
			700,000<	5
	Operational (50%)	AMP Segment	Sanitary Vehicles, water meters	1
			Catch Basins, Manholes, hydrants	2
			Force mains	3
			Sanitary Facilities, Pump Stations, Water Tower	4
			Wells & Pumps	5

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Facilities	Economic (50%)	Replacement Cost ($)	< 25,000	1
			25,000-70,000	2
			70,000-350,000	3
			350,000-700,000	4
			700,000<	5
	Operational (50%)	Segment	Furniture	1
			Structure	2
			Electrical & Lighting, Foundation, Roof	3
			HVAC	4
			Refrigeration	5
All Others	Economic (100%)	Replacement Cost ($)	< 25,000	1
			25,000-70,000	2
			70,000-350,000	3
			350,000-700,000	4
			700,000<	5

Appendix M: Staff Survey Summary

Road Network

- **Overall Satisfaction**: 60%
- **Main Issues**:
  - Insufficient funding leads to reactive rather than proactive maintenance.
  - Asphalt resurfacing is delayed, especially in towns due to coordination with underground work.
- **Asset Condition**: 60% ("Good" target: 70–75%)
- **Staff Input**:
  - Do not revert paved to unpaved roads.
  - Additional ~$1.2–1.5M/year needed

Bridges & Culverts

- **Overall Satisfaction**: 70%
- **Asset Condition**: BCI ~70–71% ("Good")
- **Main Risk**:
  - Loss of external funding may result in future restrictions.
- **Staff Input**:
  - Reserve funding tracking recommended as additional LOS.

Storm Sewer Network

- **Service Performance**:
  - Handles 1:5 year storms well.
  - Harriston has resilience issues.
- **Asset Condition**: Not thoroughly assessed; more CCTV inspections needed.
- **Resilience**:
  - 33% resilient to 1:100 year storms.
  - 100% resilient to 1:5 year storms.
- **Staff Input**:
  - Target resilience increases and improve data accuracy.

Facilities

- **Community Services**:
  - 57% condition rating – satisfactory.

    - Suggest tracking **operational hours** as LOS.
- **Roads & Drainage**:
    - Facilities fragmented, storage inadequate.
    - Same condition rating (57%), but seen as unsatisfactory for PW.

Land Improvements

- **Condition**: 39% ("Poor")
- **Staff Input**:
    - Ratings might undervalue current performance.
    - Playground replacements pose future funding issues.

Fleet

- **Community Services**:
    - Staff very satisfied.
    - Reported condition: 15% (staff believe it's higher).
- **Fire**:
    - Generally satisfied; trucks older but well maintained.
    - Reserve funding insufficient.
- **Roads & Drainage**:
    - 55–60% satisfaction; only meets 60% operational needs.
    - Reinvestment needs: $500K–$600K/year.

Machinery & Equipment

- **Reported Condition**: 13% (questioned by staff)
- **Staff Input**:
    - Inventory and condition ratings need review.
    - Sufficient for most tasks, but rentals used as backup.

Water Network

- **Condition**: 75% ("Good")
- **Issues**:
    - Costs of replacement exceed generated funds.
    - Need better planning based on material types and pressure zones.

Sanitary Sewer Network

- **Service Reliability**: "Good" (72%)
- **Condition**: Good
- **Staff Input**:
  - CCTV inspections should be expanded.
  - DC and rate studies crucial for funding adequacy.

Key Cross-Cutting Themes

- **Condition Gaps**:
  - Some AMP condition ratings (e.g., 13% for machinery/fleet) appear misaligned with staff feedback.
- **Funding**:
  - Budget constraints are the **primary challenge** across the board.
  - External funding plays a critical role, especially for roads and bridges.
- **Staff Consensus**:
  - Current lifecycle strategies are conceptually sound but under-resourced.
  - There's wide support for better data collection (CCTV, condition reviews) and proactive planning.