



Municipality of
Leamington
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2025 Asset Management Plan



Acknowledgements

Staff from across the Municipality are acknowledged for their invaluable contributions to the development of this Asset Management Plan. Their expertise and dedication are essential in the development and advancement of the Municipality's Asset Management Program. The various committees are listed below.

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The team also recognizes the Asset Management Network, which is comprised of various managers, supervisors, and asset experts for their contributions and support throughout the development of this Asset Management Plan over the past year.

Key Statistics

Replacement Cost of
Asset Portfolio (2024)

\$1.453 Billion

Replacement Cost of
Infrastructure Per Household
(2021)

\$138,000

% of Assets in Fair or
Better Condition

82%

% of Assets with Assessed
Condition Data

41%

Annual Capital
Infrastructure Deficit

\$22.1 Million

Recommended Timeframe for
Eliminating Annual Infrastructure
Deficit

5-20 Years

Target Reinvestment Rate

2.82%

Actual Reinvestment Rate

1.30%

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With the development of this AMP the Municipality of Leamington has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2025. There are additional requirements concerning an AMP review and update within five years of the completion of this 2025 AMP as well as an annual Council review of the Municipality's asset management progress.

Executive Summary

The primary goal of asset management is to deliver an acceptable level of service in a fiscally sustainable manner. Municipal infrastructure is the bedrock for economic, social, environmental health, and growth of the community through the delivery of these services. The development and implementation of asset management strategies and long-term financial planning are essential to the Municipality of Leamington (Leamington) reaching sustainability.

Scope

This Asset Management Plan (AMP) illustrates the current strategies and practices in place to manage Municipal assets and recommends where alterations are necessary. Sound asset management will ensure the Municipality of Leamington sustainably delivers services to the community.

Asset categories included in this AMP:



Road Network



Bridges & Culverts



Sewer Network



Water Network



Pollution Control Centre (PCC)



Facilities



Machinery & Equipment



Fleet



Land Improvements

Updating the AMP

Almost immediately following the completion of the 2024 AMP, work began on the 2025 plan.

Through data gap analysis and working with asset managers, the information reported in this AMP has been updated based on the 2023 TCA inventory and 2024 replacement cost, available condition assessments, and risk matrices have been applied to these assets. While strides have been made in this area, it is recommended that the Municipality continue to develop lifecycle strategies and collect asset data on the AMP categories included in this plan on age-based condition. These categories include the Sewer Network, Water Network, PCC, Facilities, Fleet, Machinery & Equipment, and Land Improvements. By gathering improved asset data and developing lifecycle strategies, asset condition assessments can be planned and incorporated into the plan. Asset condition information has been updated for the asset categories where available including roads as well as bridges and culverts.

In addition, this AMP includes proposed levels of service developed into three scenarios for each asset category. These scenarios provide a projection of condition as well as financial implications for each assumption and may be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required. (Funding remains consistent over the 20-year period).

Scenario 2 – Maintain Current Performance - Assumes the current distribution of Very Poor asset conditions is acceptable and will remain consistent over the 20-year forecast period. (Very Poor condition percentage remains consistent over the 20-year period).

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (required preventative maintenance) will be completed prior to asset replacement at the end of the asset's life. (Optimal solution with unlimited funding available).

For each of the asset categories, it is currently recommended that Scenario 1 remain the target over the planning period which forms the basis of the additional funding strategies to mitigate the financial gap.

Impacts of growth and climate change are also updated based on O. Reg. requirements and the best information available.

Findings

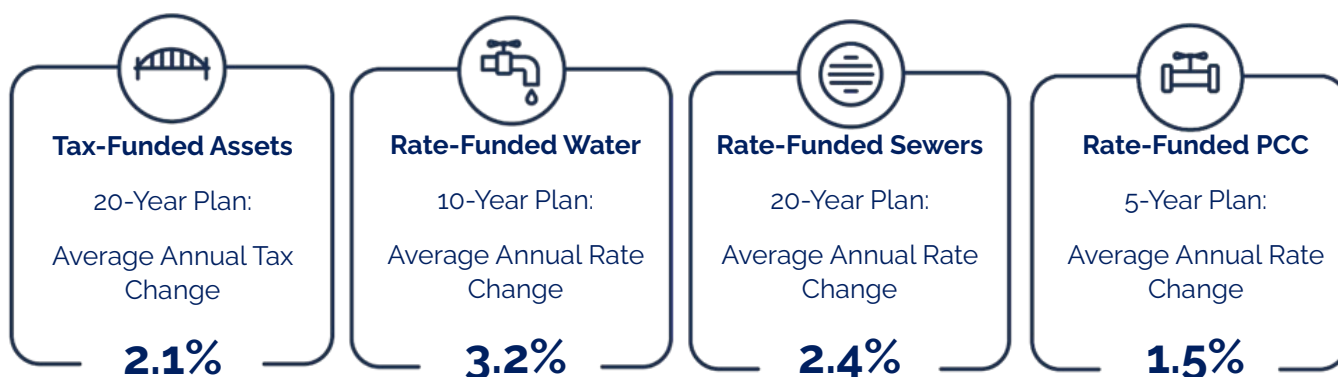
- The overall replacement cost of the asset portfolio totals \$1.453 Billion.
- 82% of all assets included in this AMP are in fair or better condition and assessed condition data was available for 41% of assets. For the remaining assets, where assessed condition was not available, age is used as the default method. Asset age typically misstates the true condition of assets and is a common data gap for many Municipalities. Improving condition assessment data is a recurring recommendation in this AMP as it is an essential component to accurate asset management planning. Leamington has recently allocated funding in the 2025 Budget for underground infrastructure assessments and building condition assessments (BCAs).
- Long-term financial planning requires analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (paved roads, bridges) and replacement only strategies (all other assets) to determine the lowest cost option to maintain levels of service.
- To meet capital replacement and rehabilitation needs for existing infrastructure, prevent backlogs, and achieve long-term financial sustainability the Municipality's average annual capital requirements is roughly \$41 million. Based on historical analysis of sustainable capital funding sources. Leamington is committing roughly \$18.8 million towards capital projects or capital reserves per year. This results in a current funding gap of approximately \$22.1 million.
- It is important to note that this AMP illustrates a snapshot in time and is based on the best information and processes available at the Municipality. Strategic asset management planning is an ongoing process that requires continuous improvement and dedicated resources.
- Annual Capital Deficit Per Household = Annual Capital Deficit ÷ Number of Households (2021 Census).

Annual Capital
Requirements Deficit
Per Household



Recommendations

A financial strategy was developed to address the annual capital funding gap in Leamington. The graphics below illustrate the annual tax rate change required to eliminate the Municipality's infrastructure deficit while capturing decreases in debt payments that can be reallocated to capital projects based on a 5-year plan for PCC assets, 10-year plan for Water assets, and a 20-year plan for Sewers and Tax-Funded assets.



The continuous upgrading of the Municipality's Asset Management Program will also include the following:

- Review data to update and maintain an accurate database / asset inventory.
- Condition assessment strategies with regular schedules.
- Review and update lifecycle management strategies.
- Regularly review plans to meet capital requirements.
- Continue tracking current levels of service while moving towards sustainable proposed levels of service.

1 Introduction & Context

Key Insights

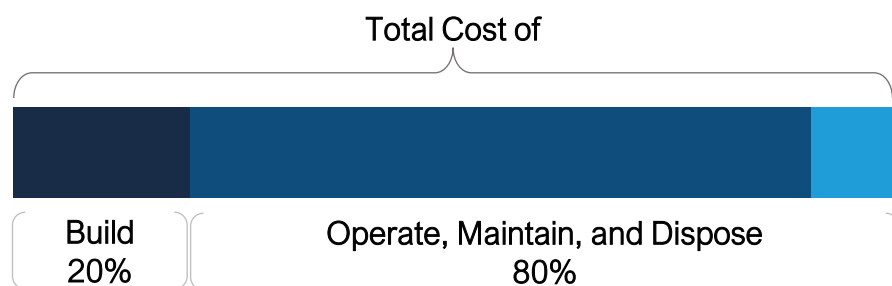
- The goal of asset management is to minimize lifecycle costs of delivering acceptable levels of service, manage risk, and maximize value delivered to the community through Municipal services.
- The Municipality's Asset Management Policy provides clear direction to staff on their roles and responsibilities regarding asset management.
- An AMP is a living document that should be updated regularly to ensure accuracy in short- and long-term planning.
- O. Reg. 588/17 outlines key milestones and requirements for AMPs until 2025 and an update within 5 years after 2025.

1.1 Overview of Asset Management

Municipalities are responsible for the management and maintenance of a robust asset portfolio that delivers essential services to the community. This includes roads and bridges as a transportation service; water networks, sanitary sewers, and stormwater networks to provide clean drinking water and disposal of waste or excessive rainfall; and buildings, facilities and parks that provide recreational space and community.

Sustainability planning for these assets requires a systematic and comprehensive plan for the maintenance, rehab, and replacement or disposal at the lowest total cost to the Municipality. The primary goals of asset management are to minimize lifecycle costs, manage risk, and maximize value delivery to the community.

The total cost of ownership is broken down into two main phases. Only 10-20% of the total cost is realized during the acquisition (construction) phase of capital assets while the remaining 80-90% is realized through the operation, maintenance, and replacement or disposal phase.



To ensure financial sustainability, the Municipality must plan accordingly as these costs can span decades. The development of AMPs is a critical step in planning for a sustainable financial future and a key part of a broader asset management program. This begins with the development of a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy that aligns strategic objectives with asset management objectives, and concludes with an AMP.

1.1.1 ISO 55000

The formal practice of asset management has developed and evolved over the past 30 years, first in the private sector, and more recently in the public sector. Over this period key industry stakeholders came together to develop common definitions, concepts, and best practices in asset management.

One of the earliest outputs of this collaboration was the British Standards BSI PAS 55 – the Publicly Available Specification for the optimal management of physical assets. This document led to the publication of an international standard in January 2014. The International Organization for Standardization (ISO) published ISO 55000 on Asset Management.

This document provides the foundation for asset management best practices and is an invaluable guide to developing processes and procedures that support the good stewardship of Municipal assets. ISO has developed ISO 55000:2024, updating terminology and best practices.

1.1.2 Benefits of Asset Management

Implementing the key principles and best practices of asset management can lead to notable changes in the organizational processes. The following table highlights numerous benefits of asset management and the value of organizational change.



Good governance and increased accountability



Data-driven decision-making



Enhanced sustainability of infrastructure



Improved level of service and quality of life



Accurate forecasting of infrastructure replacement and enhancement needs



Compliance with federal and provincial regulations

1.1.3 Asset Management Policy

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

1.1.4 Asset Management Strategy

An asset management strategy aligns organizational objectives with asset management objectives and provides a strategic overview of the actions required to meet these objectives. The strategy includes greater detail than the policy on how Leamington plans to achieve asset management objectives through planned activities and decision-making criteria.

Leamington's Asset Management Policy includes many of the key components of an asset management strategy and has the potential to expand in future revisions or as part of a separate document.

1.1.5 Asset Management Plan

An asset management plan is a snapshot in time of the Municipality's asset management program and illustrates how, where, and when resources are required to achieve a certain level of service.

AMPs typically include the following:

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

AMPs are living documents that require regular updates as additional information becomes available. Thus, allowing the Municipality to re-calculate the current state of infrastructure and evaluate how their asset management and financial strategies are evolving.

1.2 Key Concepts in Asset Management

Lifecycle management, risk management, and levels of service are a few of the key components of sound asset management. All are included throughout this AMP and are described below in greater detail.

1.2.1 Lifecycle Management Strategies

The condition or performance of an asset will typically deteriorate over time. The deterioration of an asset may be affected by numerous factors including asset characteristics such as material, location, usage, level of maintenance, and environment. The deterioration process of an asset has a negative effect on its ability to meet intended functionality and may result in increased cost, risk, and service disruption.

It is crucial for the Municipality to establish a lifecycle management strategy to proactively manage the deterioration of its assets and ensure they meet the desired levels of service.

There are many lifecycle activities that can be performed on an asset to extend its useful life. These generally fall into one of three categories: maintenance, rehabilitation, or replacement. The following table illustrates each type of lifecycle activity and the assumed variance in cost.

Lifecycle Activity	Description	Example (Paved 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 & Pave	\$\$
Replacement/Reconstruction	Asset end-of-life replacement that often involves the complete replacement of an asset	Full Reconstruction	\$\$\$

Asset performance can be sustained through the combination of maintenance and rehabilitation and eventually replacement. Understanding what effect these activities will have on the lifecycle of an asset and their cost will enable the Municipality to make better recommendations.

Leamington's current approach to lifecycle management is described within each AMP category. Developing and implementing a proactive lifecycle strategy will help the Municipality determine which activities to carry out and when to maximize useful life at the lowest total cost of ownership.

1.2.2 Risk Management Strategies

A "worst-first" approach is typically used by Municipality's considering infrastructure spending when a prioritized method based on importance to service delivery and criticality is the more sustainable option. Not all assets are created equal, and their failure may pose more risk to the Municipality than others. For example, a high traffic road that provides access to critical services will pose a higher risk than a low traffic rural road. These high-value assets should receive funding before others.

Risk management strategies can identify critical assets and illustrate where to focus maintenance efforts and spending.

This AMP evaluates asset risk and criticality at a high-level. Risk is calculated by multiplying the probability of failure by the consequence of failure. Based on available data, each asset has been given a probability of failure score and a consequence of failure score to determine the risk rating. These scores can be used to prioritize maintenance, rehabilitation, and replacement activities.

Within the 2025 AMP, these risk management strategies have been reviewed and updated based on the information provided by the respective Asset Managers and other relevant information.

1.2.3 Levels of Service

As noted included in the 2024 AMP, a level of service (LOS) is a measure of what service the Municipality is providing to the community and the nature and quality of that service. The Municipality has established technical metrics and qualitative descriptions that measure both technical and community levels of service and are measured as data is available.

Leamington measures a combination of metrics, some of which are outlined in O. Reg. 588/17 to track levels of service provided by the Municipality. Community levels of service and technical levels of service are the two levels provided.

Community Levels of Service

Community levels of service are a simple description or measure of the service received by the community. Through O. Reg. 588/17 the Province has provided qualitative descriptions that are required to be included in this AMP for core asset categories (Roads, Bridges & Culverts, Water, Wastewater, Stormwater). The Municipality has determined the qualitative descriptions for non-core asset categories used to track the community levels of service. These descriptions can be found in the Levels of Service subsection within each AMP category.

Technical Levels of Service

Technical Levels of Service are a measure of key technical attributes of the service being provided to the community. These are typically quantitative metrics that tend to reflect the impact of Leamington's asset management strategies on the physical condition and performance of assets, or the quantity / capacity of the services being provided.

Current & Proposed Levels of Service

Through the development of the Municipality's 2024 AMP, the focus was on updating and measuring the current levels of service provided to the community. This AMP focuses on updating those key community and technical metrics and evolving to a proposed levels of service plan over a 10-year period, in accordance with O. Reg. 588/17.

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

Within the 2025 AMP, these LOS have been reviewed and updated based on the information provided by the respective Asset Managers.

1.3 Climate Change

Canada's Changing Climate Report (2022)

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, drought, and extreme weather events. In 2022, Canada's Changing Climate Report (CCCR 2022) was released by Environment and Climate Change Canada (ECCC).

The report revealed that between 1948 and 2022, the average temperature increase across Canada was 1.9°C. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 5.5°C in Canada by the year 2100 compared to 2022 levels. Observed precipitation changes in Canada include an increase of approximately 8% to over 70% between 1948 and 2012. The largest increases are seen in northern regions and smallest changes were observed in the Prairies and southwest British Columbia. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

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

Addressing floodplain challenges for the existing shoreline community is essential to Municipal Council, as well as maintaining and enhancing urban green spaces including policies to support tree canopy growth and conserve the biodiversity in the Municipality.

1.3.1 Leamington's Climate Profile

The Municipality of Leamington is located in Southwestern Ontario along the shore of Lake Erie. The Municipality 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 Municipality of Leamington may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1991 and 2020 the annual average temperature was 10.2°C.
- Under a high emissions scenario, the annual average temperatures are projected to increase by 2.7°C by the year 2050 and over 6.3°C by the end of the century.

Increase in Total Annual Precipitation:

- Between the years 1991 and 2020 the average annual precipitation was 820mm.
- Under a high emissions scenario, Leamington is projected to experience an 8.9% increase in precipitation by the year 2050 and a 15.0% 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, especially those impacted by Great Lake winds.

1.3.2 Lake Erie

The Great Lakes are one of the largest sources of fresh water in the world, containing about 21% of the world's surface fresh water. There are approximately 37 million people living in the Great Lakes watershed and nearly one third are within the Lake Erie watershed. The physical impacts of climate change are most noticeable from flooding, extreme weather events such as windstorms and tornados, and/or rising water levels eroding shorelines and natural spaces. Erosion and flooding pose a threat to the surrounding built infrastructure such as parks assets, bridges, culverts, sewer systems and roads. Communities located in the Great Lakes region may experience more severe windstorms or tornados due to climate change causing damage to both natural and built environments. Leamington had an F1 tornado touch down in June of 2010 and the Essex County region had three F1 tornadoes hit in one week of August 2023 and one in March of 2024.

Public health and safety depend on the stability and predictability of the ecosystem in the Great Lakes watershed. The quality of water is threatened by anthropogenic climate change as a result of blue-green algae blooms, soil erosion, and agricultural, stormwater, and wastewater runoff. These phenomena put undue stress on regional water filtering and treatment systems. The safety of the public is threatened by the physical impacts of flooding and soil erosion. In some cases, homeowners located near the lakeshore are at a high risk of losing their homes.

1.3.3 Integrating Climate Change & Asset Management

Sustainable service delivery is the primary goal of asset management. Strategic planning is necessary for the delivery of services to today's residents without compromising the services and well-being of future residents. Climate change is threatening the sustainability of the Municipality's level of service by reducing the useful life of an asset and increasing the risk of failure. Climate change impacts such as flooding, high heat, drought, and more frequent/intense storms can make achieving desired levels of service difficult.

Climate change considerations should be included in asset management practices to achieve sustainability. The development of the Southeast Leamington Graduated Risk Floodplain Mapping Project (2019) is an example of how the Municipality is incorporating climate change mitigation and adaptation into their asset management planning.

1.4 Ontario Regulation (O. Reg.) 588/17

As a 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 and more sustainable communities, the regulation is a mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs associated.

The figure below illustrates important reporting requirements under O. Reg. 588/17 and the corresponding timelines.

2019	2024
Strategic Asset Management Policy	AMP for Core and Non-Core Assets
2022	2025
AMP for Core assets with the following components: - Current Levels of Service - Inventory analysis - Lifecycle activities to sustain LOS - Cost of lifecycle activities - Discussion of growth impacts	Asset Management Policy Update and an AMP for all assets with the following components: - Proposed LOS for the next 10 years - Updated inventory analysis - Lifecycle management strategy - Financial strategy and addressing shortfalls - Discussion of growth impacts on financial strategy and lifecycle activities

1.4.1 O. Reg. 588/17 Compliance Review

Requirement	O. Reg. Section	AMP Section	Leamington's Status
Summary of assets in each AMP category	S.5(2), 3(i)	4.1.1 – 5.3.2	Complete
Replacement Cost of assets in each AMP category	S.5(2), 3(ii)	4.1.1 – 5.3.2	Complete
Average Age of assets in each AMP category	S.5(2), 3(iii)	4.1.3 – 5.3.3	Complete
Condition of assets in each AMP category	S.5(2), 3(iv)	4.1.3 – 5.3.3	Complete
Description of the Municipality's approach to assessing condition in each AMP category	S.5(2), 3(v)	4.1.3 – 5.3.3	Complete
Proposed Levels of Service in each AMP category	S.5(2), 1(i-ii)	4.1.7 – 5.3.7	Complete
Current performance measures in each AMP category	S.5(2), 2	4.1.7 – 5.3.7	Complete
Lifecycle activities needed to maintain levels of service for 10 years	S.5(2), 4	4.1.4 – 5.3.4	Complete
Cost of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	6.1 – 6.2	Complete

2 Scope & Methodology – Key Insights

- This AMP includes 9 AMP categories and is split between tax-funded and rate-funded categories.
- The source, date, and method of replacement costs impact the accuracy and reliability of the portfolio valuation.
- Accurate condition data helps prevent unnecessary and expensive rehabilitation or replacement and ensures that lifecycle activities are carried out at the proper time to maximize the assets value and useful life.

2.1 AMP Categories

The Municipality of Leamington's 2025 AMP is developed in compliance with O. Reg. 588/17. The July 2025 deadline requires analysis of all assets (Core and Non-Core) including proposed levels of service for at least the next 10 years, updated inventory analysis, lifecycle management strategies, financial strategy and addressing shortfalls, and a discussion of growth impacts on financial strategy and lifecycle activities.

This AMP summarizes the state of infrastructure for Leamington's asset portfolio, establishes levels of service and the corresponding technical and community key performance indicators, outlines lifecycle strategies for optimal asset management and performance, and provides financial strategies to achieve sustainability for the AMP categories in the table below.

AMP Category	Funding Source
Bridges & Culverts	Tax Levy
Facilities	
Fleet	
Land Improvements	
Machinery & Equipment	
Road Network	
Pollution Control Centre (PCC)	User Rates / Special Levy
Sewer Network	
Water Network	

2.2 Deriving Replacement Cost

There are a variety of methods that could be used to determine the replacement cost of an asset. In this AMP, the following were utilized:

User-Defined Cost & Cost/Unit

- Costs provided by Municipal staff could include average costs from recent contracts, values from engineering reports and assessments, or staff estimates based on asset knowledge and expertise.

Cost Inflation / CPI Tables

- Taking the historical cost of an asset and inflating the value based on Consumer Price Index or Non-Residential Buildings Construction Price Index.

User-Defined costs are the preferred method due to the reliability and reasonable accuracy of the estimates. Inflation of historical cost is usually used in the absence of reliable replacement costs. Inflating historical costs is reliable for recently acquired

assets where the total cost is reflective of the actual cost incurred by the Municipality. As assets age and processes/materials evolve, cost inflation becomes less reliable.

2.3 Estimated Useful Life (EUL)

The estimated useful life (EUL) of an asset is the period over which the Municipality expects the asset to perform and remain in service before replacement or disposal is required. The EUL for each asset in this AMP was assigned according to the knowledge and expertise of Municipal staff and supplemented by industry standards where needed.

2.4 Reinvestment Rate

Additional investment is required to maintain an acceptable service delivery as an asset ages. The reinvestment rate is a measure of available or required funding relative to the total replacement cost of an asset.

The Municipality can identify any existing funding gaps by comparing the actual and target reinvestment rates.

Target Reinvestment Rate = Annual Capital Requirement ÷ Total Replacement Cost

Actual Reinvestment Rate = Annual Capital Funding Available ÷ Total Replacement Cost

2.5 Deriving Asset Condition

If not complete or reliable, asset condition can mislead long-term planning and decision making. Reliable and accurate condition data will help prevent unnecessary costs being incurred for rehabilitation or replacement and ensure that lifecycle activities are carried out at the right time to maximize asset value and useful life.

A standardized condition rating system allows for benchmarking across the Municipality's portfolio. The table below illustrates the current condition rating system utilized by the Municipality for this AMP. This system aligns with the Canadian Core Public Infrastructure Survey which is used to develop the Canadian Infrastructure Report Card. The service life remaining based on the assets EUL is used where there is no assessed condition data available.

Condition	Description	Criteria	Service Life Remaining (%)
Very Good	Fit for 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 the end of service life, condition below standard, large portion of the 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

Performance analysis in this AMP is based on assessed condition data only as available. Asset age and service life remaining based on the asset's EUL is used in the absence of assessed condition data. Appendix D illustrates additional information on the role of asset condition data and provides basic guidelines for the continued development of a formal condition assessment program.

3 Portfolio Overview

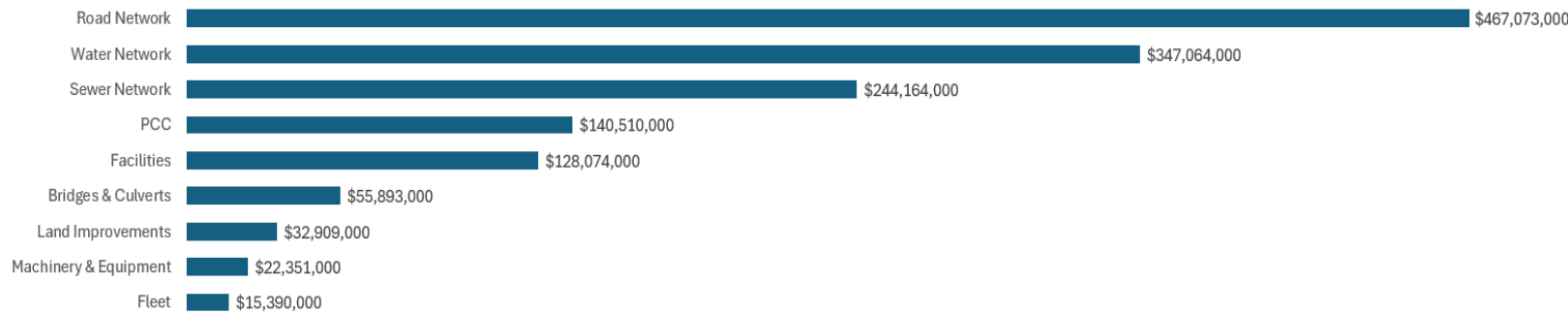
Key Insights

- Total Replacement cost for Leamington's asset portfolio totals approximately \$1.453 billion
- Leamington's Target Reinvestment Rate is 2.82% while the Actual Reinvestment Rate is 1.30%, resulting in an expanding infrastructure deficit
- 82% of all assets included in this AMP are in fair or better condition
- 41% of assets included in this AMP have condition assessments
- The Average Annual Capital Requirements for all assets included in this AMP totals roughly \$41 million

3.1 Total Replacement Cost of Asset Portfolio

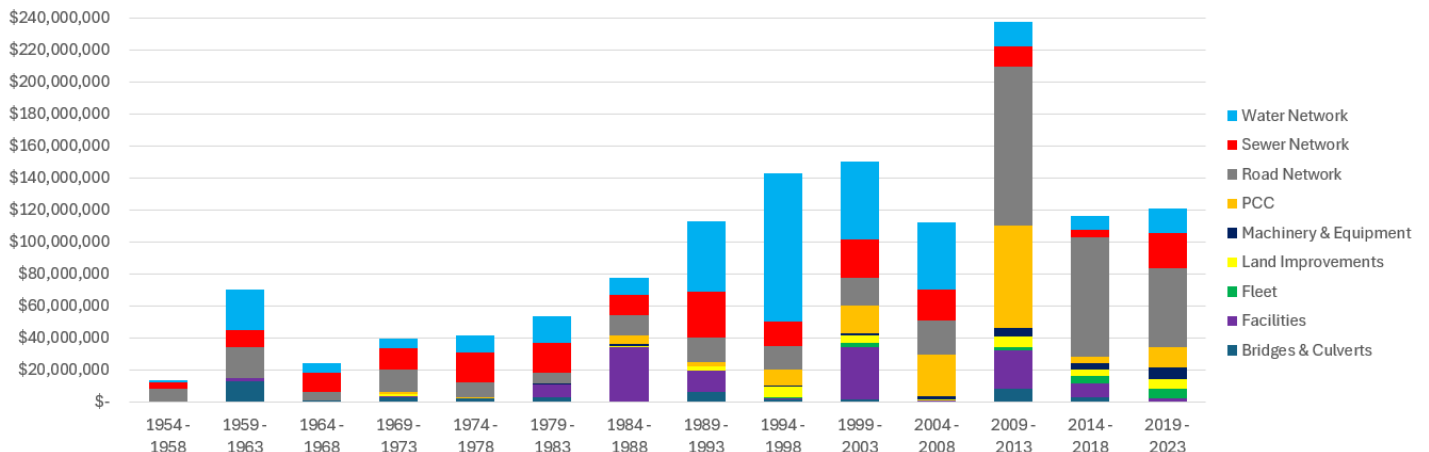
The total replacement cost of the Municipality's portfolio is approximately \$1.453 billion based on inventory data from 2023 for the AMP categories below. This estimate reflects the replacement of historical assets with similar, not necessarily, assets available for procurement today. The sum is based on a combination of user-defined costs and inflated historical costs. The following graph illustrates the total 2024 replacement costs broken down by AMP category.

Replacement Cost
\$1,453,428,000



The following graph illustrates the total historical investment and date of acquisition per AMP category. These are aggregated into 5-year increments.

Historical Investment

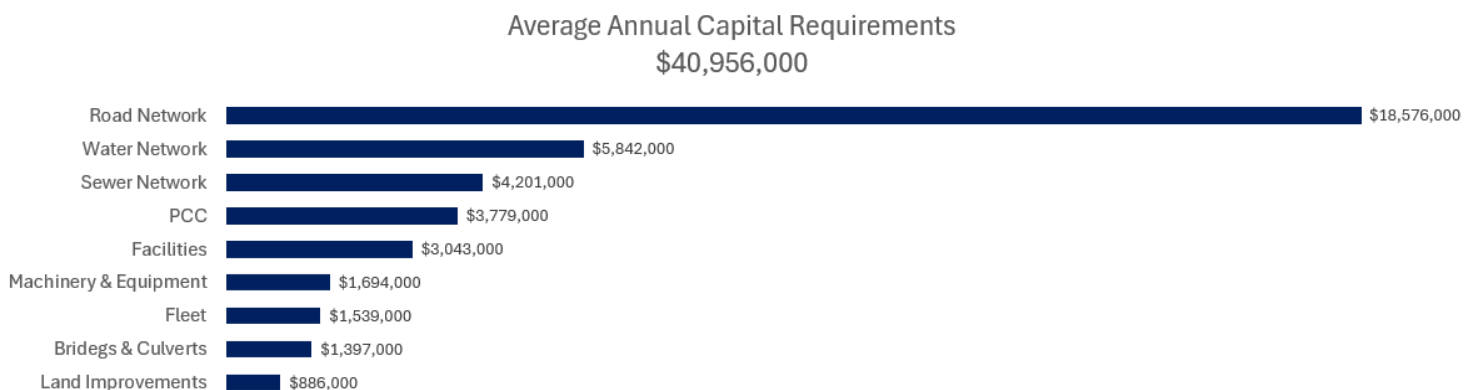


The following table illustrates the methodology used to determine replacement costs for each AMP category:

AMP Category	Replacement Cost Method ¹	
	User-Defined	Notes
Road Network (Paved Roads)	100%	Data Source is the Engineering Department
Bridges & Culverts	100%	Data Source is the 2023 OSIM Report
Water Network	98%	Data Source is the Water Department
Sewer Network	98%	Data Source is the Engineering Department
PCC	32%	Data Source is the PCC Department
Facilities	1%	Mainly CPI Tables used to inflate cost
Machinery & Equipment	2%	Mainly CPI Tables used to inflate cost
Fleet	73%	Data Sources are the Public Works Department and the 2025 Budget
Land Improvements	27%	Only Parking Lots, Concrete Pads, and Fencing are User-Defined
Overall	88% User-Defined	

3.2 Average Annual Capital Requirements

The average annual capital requirements are the amount the Municipality should be allocating annually to each AMP category to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability.



¹ These percentages are weighted by replacement cost.

Most of the AMP categories have calculated annual requirements based on a replacement only scenario, meaning capital expenditures are only realized at the construction and replacement phase of each asset. The Road Network, however, includes lifecycle management strategies to realize savings over the lifecycle of an asset. These savings originate from a comparison of replacement only and lifecycle strategy scenarios where cost avoidance is possible if the lifecycle strategies are implemented.

The following table illustrates the potential cost avoidance between the two scenarios:

Replacement Only Scenario

- Based on the assumption that assets deteriorate and without regularly scheduled maintenance and rehabilitation are replaced at the end of their useful life.

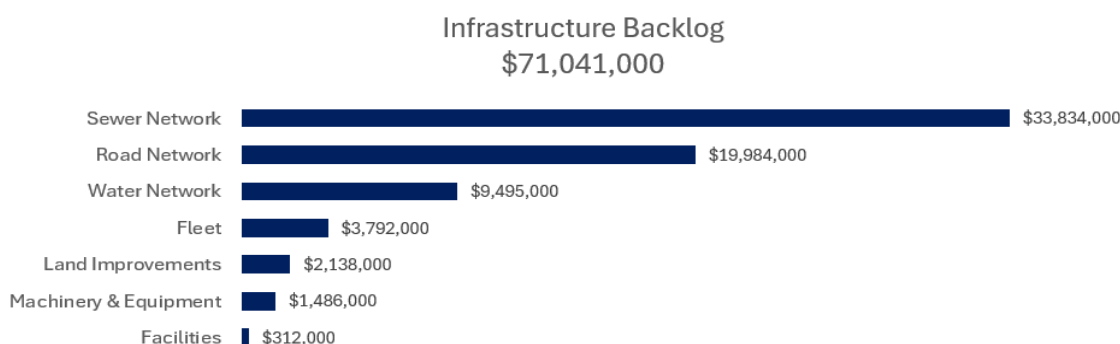
Lifecycle Strategy Scenario

- Based on the assumption that lifecycle activities are carried out at strategic intervals to extend the service life of assets until replacement or disposal is required.

AMP Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Variance
Road Network	\$26,884,000	\$18,576,000	\$8,308,000

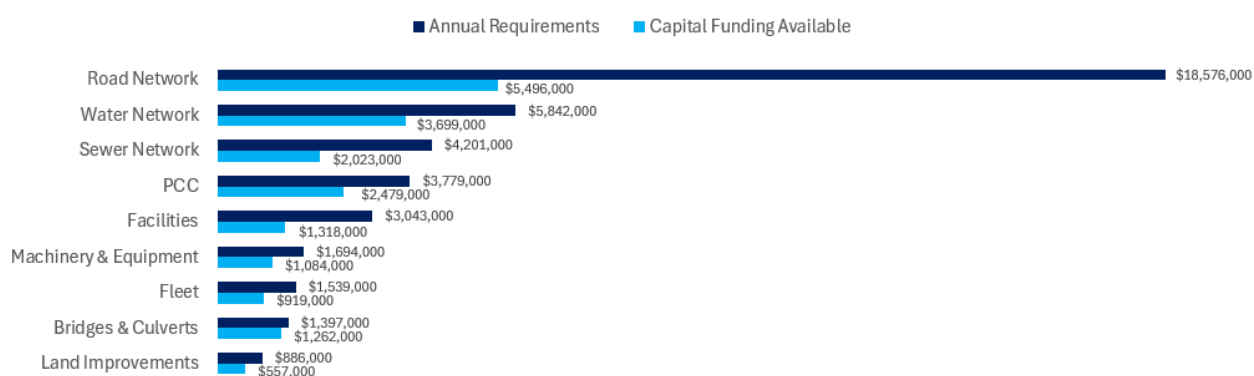
Since the lifecycle strategy scenario is the lowest cost option available to the Municipality, annual requirements with lifecycle data were utilized to create the financial strategy. This strategy highlights that the Municipality should allocate roughly \$41 million annually to address capital requirements for these AMP categories. These annual requirements do not include the backlog costs or value of assets that are past their estimated useful lives by the 2023 reporting year.

The graph below illustrates the amount of backlog that the Municipality has to date. Note that Bridges & Culverts and Pollution Control Centre (PCC) are not included because there is no backlog of assets in these categories.



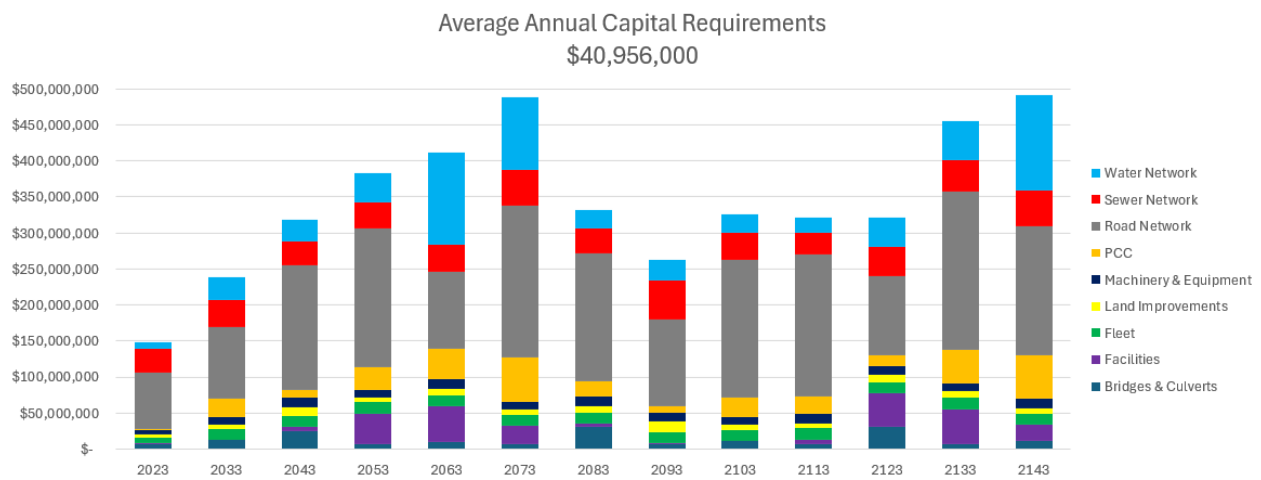
3.3 Target vs. Actual Reinvestment Rate

The graph below illustrates the gaps in funding by comparing target vs actual reinvestment rates. The Municipality should be allocating \$41 million (*Total Average Annual Capital Requirements*) annually for a target reinvestment rate of 2.82% (*Total Average Annual Capital Requirements ÷ Total Replacement Cost*) to meet long-term replacement needs. Actual annual capital spending is roughly \$18.8 million (*Total Available Funding for Tax & Rate Funded Assets*) resulting in an actual reinvestment rate of 1.30% (*Total Actual Funding Available ÷ Total Replacement Cost*).



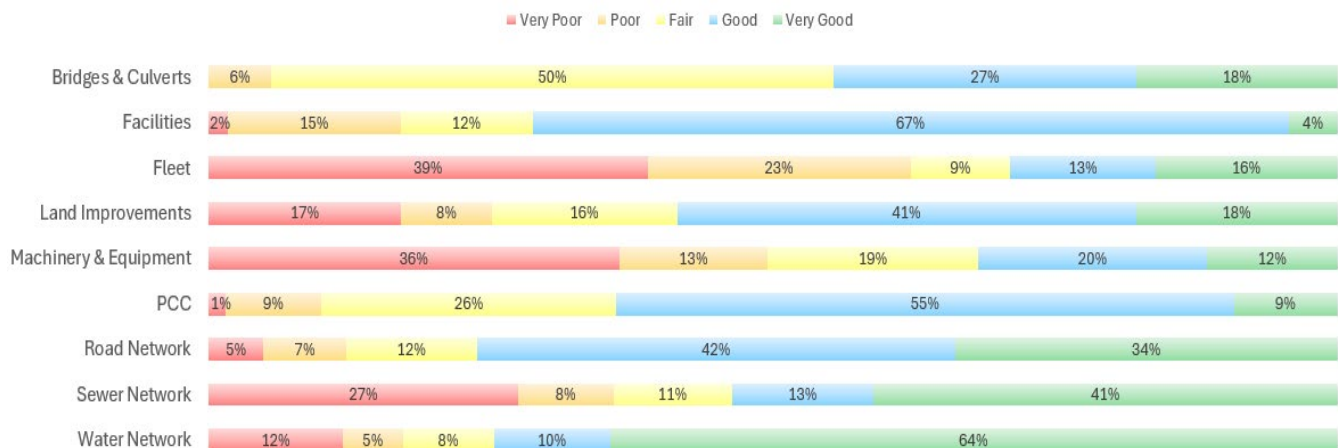
3.4 Forecasted Capital Requirements

Both asset rehabilitation and replacement requirements should be included in the development of a long-term capital forecast. Asset specific lifecycle strategy development that includes timing and cost of future events can be utilized in creating an accurate and reliable long-term capital forecast. The following graph spans the next 130 years to ensure every asset in the portfolio has gone through at least one full iteration of replacement. These forecasted requirements are aggregated into 10-year increments.



3.5 Condition of Asset Portfolio

Updated condition information on all assets in the portfolio is a critical piece to asset management. In total, 82% of assets in Leamington are in fair or better condition. This value originates from both age-based and assessed condition information. The following graph illustrates the overall condition of the Municipality's portfolio by AMP category. All percentages are weighted by replacement cost.

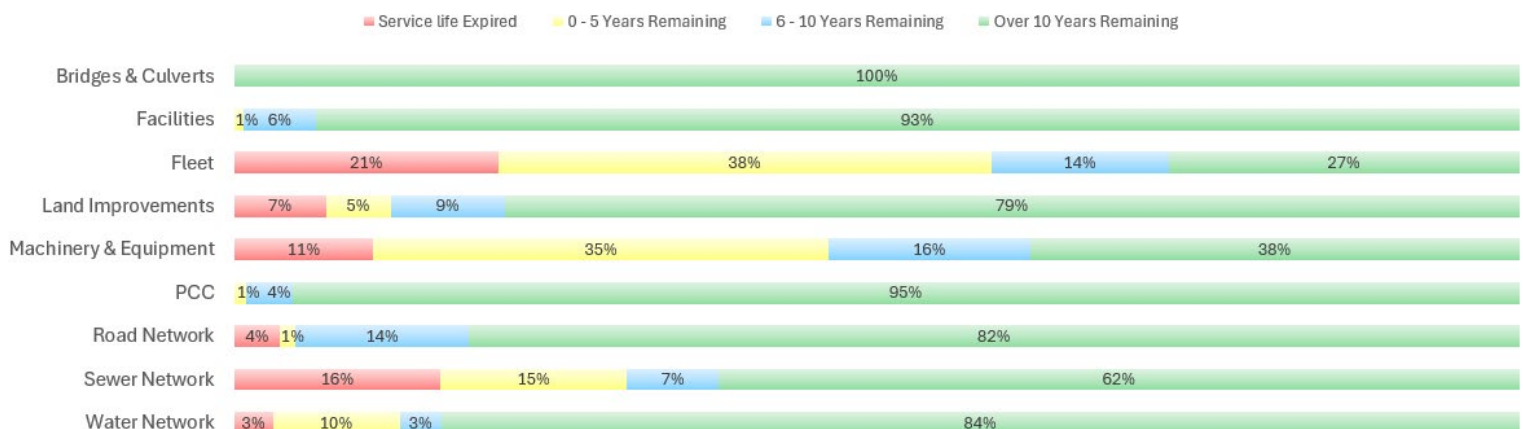


For this AMP, the Municipality has assessed condition on 41% of assets in the portfolio. The remaining assets utilize an age-based method to estimate the current condition. The table below illustrates the source of condition data used in this AMP.

AMP Category	AMP Segment	% of Assets with Assessed Condition ²	Condition Data Source
Road Network	Paved Roads	98%	Staff Assessed
	Signs, Sidewalks & Curbs, Streetlights & Traffic Signals	0%	Age-Based
Bridges & Culverts	All	100%	2023 OSIM Report
PCC	All	62%	Staff & Contractor Assessed
Water Network	All	6%	Staff Assessed
Sewer Network	All	4%	Contractor Assessed
Facilities	All	12%	Staff & Consultant Assessed
Machinery & Equipment	All	0%	Age-Based
Fleet	All	5%	Staff Assessed
Land Improvements	All	0%	Age-Based

² The percentage of assets with assessed condition is weighted by quantity/count and not by replacement cost.

The following graph illustrates the service life remaining for each AMP category. The remaining useful life graph showcases asset approaching or past the end of their useful life as well as assets that have 10 or more years remaining,



4 Analysis of Tax-Funded Assets

Key Insights

- Tax funded assets are valued at a replacement cost of approximately \$721.7 million.
- 86% of tax-funded assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for tax-funded assets is roughly \$27.1 million
- Critical assets should be evaluated to determine appropriate risk mitigation activities and treatment options

4.1 Road Network

The Road Network is a critical component of the Municipality's portfolio providing safe and efficient transportation services and is the highest value AMP category. The network is a combination of Municipally owned and maintained roadways and roadside infrastructure including sidewalks, curbs, streetlights, traffic signals, and road signs.

The Public Works and Engineering departments maintain the Municipality's roads and sidewalks including patching, shoulder maintenance, grading, hot asphalt repairs, crack sealing, and winter snow and ice removal.

The Road Networks state of infrastructure is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$467,073,000	69.4% (Good)	Annual Requirement:	\$18,576,000
		Funding Available:	\$5,496,000
		Annual Deficit:	\$13,080,000

4.1.1 Levels of Service Statement

The Municipality of Leamington is committed to providing a high level of service for its Road Network that is accessible, reliable, sustainable, and affordable for the whole community.

The Road Network service is designed to meet the traffic demands of the community, providing sufficient capacity for the safe and efficient movement of people and goods. Additionally, the network is available under all weather conditions, ensuring that residents and visitors can travel safely and conveniently throughout the year.

The Road Network is maintained to a high standard, with regular inspections and maintenance activities to ensure that it remains in good condition. The Municipality aims to minimize unplanned service interruptions and road closures, providing timely and effective responses to any issues that may arise.

The sustainability of the Road Network is a key priority for the Municipality. Efforts are made to minimize the environmental impact of the Road Network and its supporting infrastructure, and to promote sustainable transportation options such as cycling, walking, and public transit.

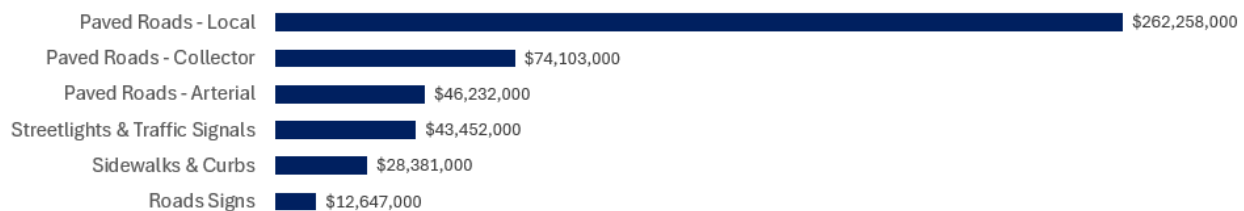
Finally, the affordability of the Road Network is considered in all decision-making processes. The Municipality aims to provide a high level of service at a reasonable cost to taxpayers.

4.1.2 Asset Inventory & Costs

The table and graphs below illustrate the quantity, replacement cost, and annual capital requirements of each AMP segment in the Municipality's Road Network category.

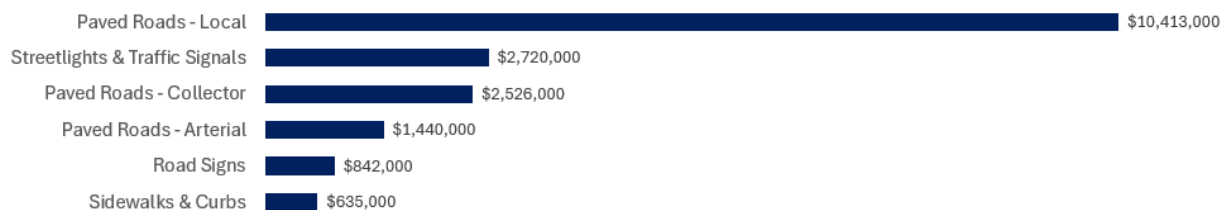
AMP Segment	Quantity	Replacement Cost	Annual Capital Requirement
Gravel Roads	24,161 m ²	Not Planned for Replacement ³	
Paved Roads – Arterial	234,993.07 m ²	\$46,232,000	\$1,440,000
Paved Roads – Collector	391,681.37 m ²	\$74,103,000	\$2,526,000
Paved Roads – Local	1,532,030.16 m ²	\$262,258,000	\$10,413,000
Road Signs	12,752	\$12,647,000	\$842,000
Sidewalks & Curbs	253,255.80 m	\$28,381,000	\$635,000
Streetlights & Traffic Signals	2,699	\$43,452,000	\$2,720,000
Total		\$467,073,000	\$18,576,000

Replacement Cost
\$467,073,000



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

Average Annual Capital Requirements
\$18,576,000



³ Operating and maintenance activities can theoretically allow Gravel Roads to have an unlimited service life without any additional capital expenditures.

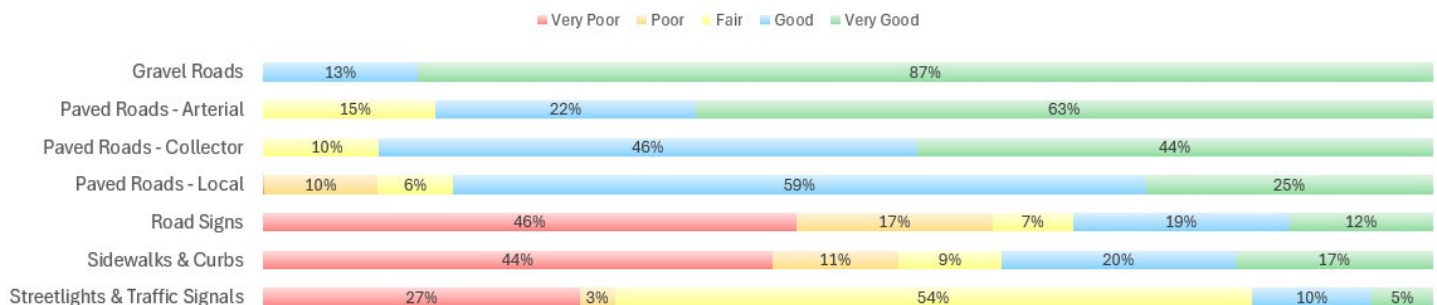
The average annual capital requirements are the amount the Municipality should be allocating annually to each Road Network segment to meet replacement needs as they occur, prevent backlogs, and achieve long-term sustainability.

4.1.3 Asset Data: EUL, Age, Condition

The table and graph below illustrate the current average condition, average age, and estimated useful life for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
Gravel Roads	15 – 20	46.67	88% (Very Good)
Paved Roads – Arterial	10 – 20	31.25	84% (Very Good)
Paved Roads – Collector	6 – 30	36.25	81% (Very Good)
Paved Roads – Local	10 – 50	48.92	75% (Good)
Road Signs	10 – 20	9	42% (Fair)
Sidewalks & Curbs	5 – 60	44.33	38% (Poor)
Streetlights & Traffic Signals	2 – 30	11.08	37% (Poor)
Average		23.17	69% (Good)

The graph below illustrates the average condition for each asset segment on a Very Poor to Very Good scale.



The Municipality should monitor the average condition to ensure the Road Network continues to provide an acceptable level of service. If the average condition decreases, the Municipality should review their lifecycle management strategies to identify areas of lower performance.

The EULs of each AMP segment should also be reviewed to determine areas that should be adjusted to give an updated picture of the asset's service life.

Current Approach to Condition Assessments

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- Roads are assessed annually through visual and rideability inspections.
- Road signs undergo annual reflectivity testing and visual inspections in accordance with Minimum Maintenance Standards (MMS).
- Other supporting roadside infrastructure is visually inspected during road patrols as needed.

The following table illustrates the rating criteria used to determine the current condition of road segments and forecast capital requirements in this AMP:

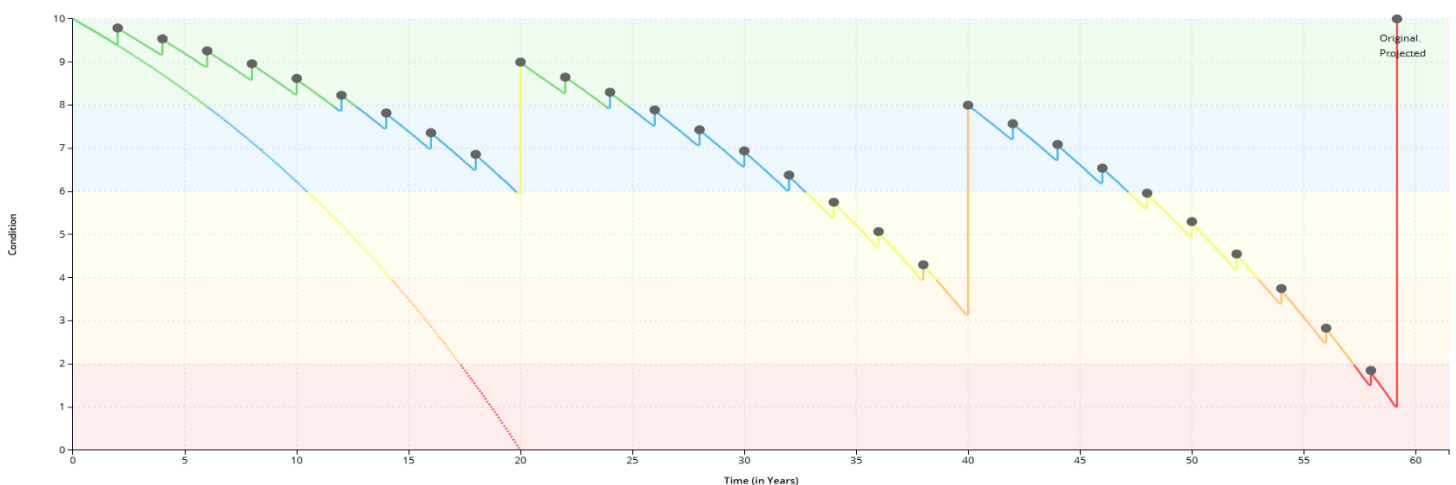
Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

4.1.4 Lifecycle Management Strategy

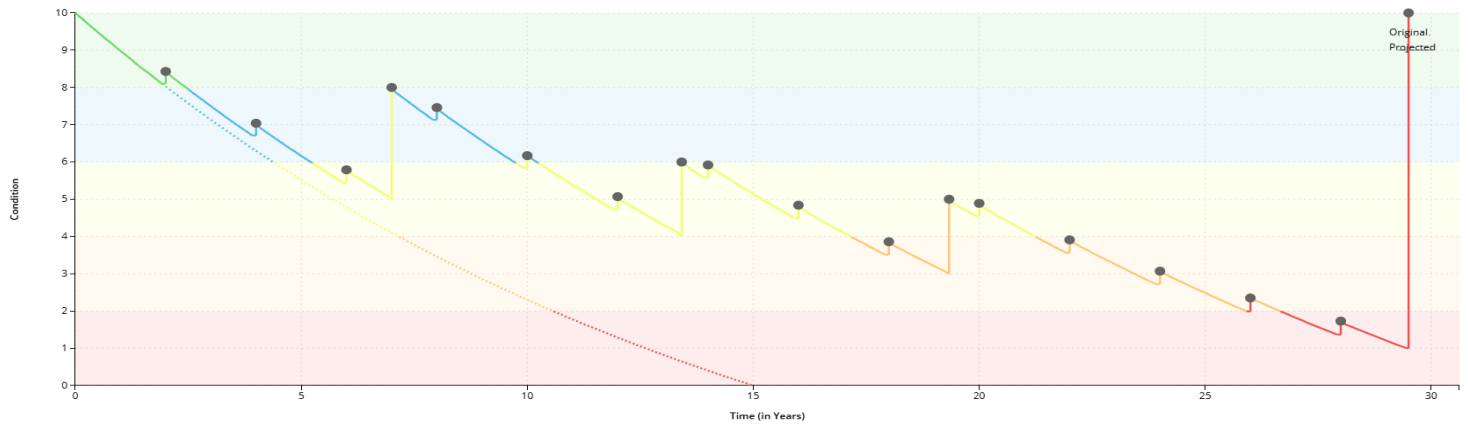
Lifecycle Models

For most assets, condition or performance will deteriorate over time. An asset's characteristics, location, utilization, maintenance history, and environment are factors that affect this process. The following tables and graphs illustrate lifecycle strategies that have been developed to proactively manage high-class bituminous (HCB) and low-class bituminous (LCB) paved roads. Strategic maintenance and rehabilitation activities are completed to extend the service life of paved roads at a lower total cost than allowing the road to deteriorate to the point where replacement or disposal is required.

Asphalt Roads (HCB)				
Event Name	Event Class	Event Trigger	Impact	Cost
Crack Sealing	Preventative Maintenance	Every 2 Years	Improve Condition by 0.2	\$2.00/m
Shouldering (Rural Only)	Maintenance	Annually	Improve Condition by 0.2	\$13.00/m ²
Mill & Pave (Surface Only)	Rehabilitation	At 60% Condition	Result 90% Condition	\$40.00/m ²
Mill & Pave (Full Depth)	Rehabilitation	At 30% Condition	Result 80% Condition	\$85.00/m ²
Full Reconstruction	Replacement	At 10% Condition	Result 100% Condition	\$213.00/m ²



Surface Treated (LCB)				
Event Name	Event Class	Event Trigger	Impact	Cost
Shouldering	Maintenance	2 times/year (Rural Roads Only)	Improves Condition by 4%	\$13.00/m ²
Resurfacing #1	Rehabilitation	At 50% Condition	Result 80% Condition	\$25.00/m ²
Resurfacing #2	Rehabilitation	At 40% Condition	Result 60% Condition	\$25.00/m ²
Resurfacing #3	Rehabilitation	At 30% Condition	Result 50% Condition	\$25.00/m ²
Full Reconstruction	Replacement	At 10% Condition	Result 100% Condition	\$160.00/m ²



Lifecycle Strategies

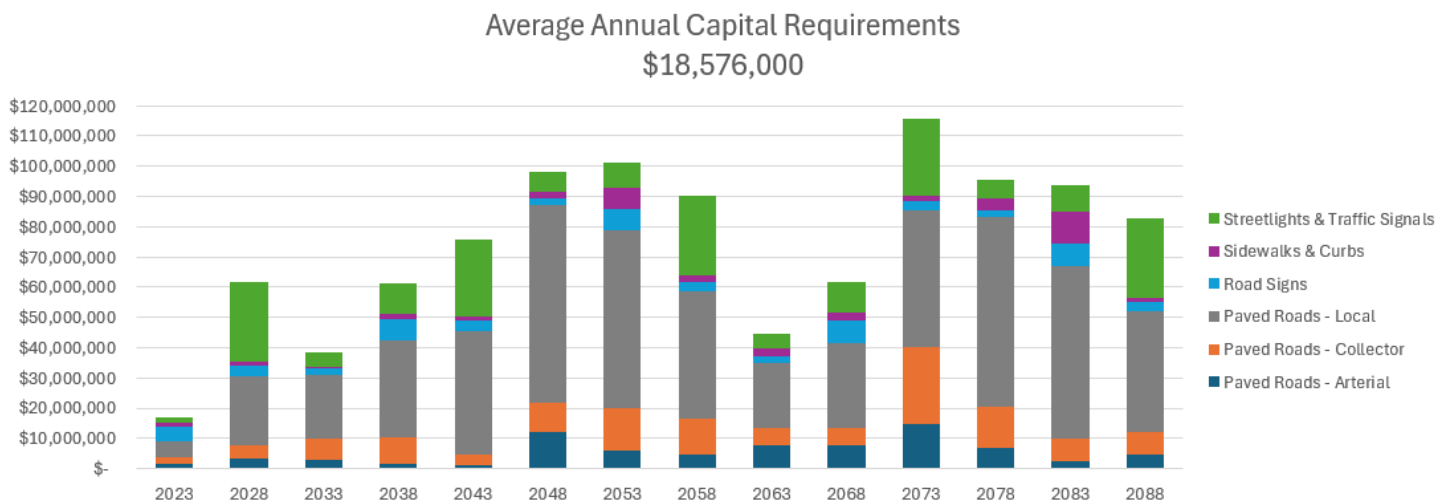
The following table illustrates Leamington's current lifecycle management strategy:

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	The Municipality conducts annual paved road rehabilitation programs including mill and pave and crack sealing on asphalt roads. Upgrades and repairs to curbs, gutters, and existing drainage structures are commonly part of this work.
	The Municipality carries out road shouldering on a semi-annual basis to re-gravel the shoulders and maintain the structural integrity of the road by preventing cracks originating from the sides.
	The Municipality conducts several seasonal maintenance activities. All seasonal maintenance activities include asphalt patching, graveling, and tree cutting. Summer maintenance activities include sidewalk repairs, grading, re-graveling, dust control, ditching, roadside mowing, tree trimming, brush cleanup, road sign installation/maintenance, and line painting. Winter maintenance activities include snow plowing, salting, and snow removal. Road Signs are tested annually which includes retro-reflectivity and condition. Signs that are sub-standard are then replaced.
	Line repainting is conducted annually on all paved Municipal roads.
Replacement	Road replacement prioritization is determined by consideration of growth, risk, condition, health & safety, and social impact.
	There has been some conversation of converting gravel roads to paved roads in recent years, and it is expected to result in additional capital requirements.

4.1.5 Forecasted Capital Requirements

Based on the lifecycle strategies for the Municipality of Leamington's Road Network outlined above, and assuming end-of-life replacement for all other assets in this AMP category, the following graph illustrates the forecasted capital requirements for the Road Network.

The annual capital requirement estimates the average amount per year the Municipality should allocate funding for rehabilitation and replacement activities to meet future capital needs. The following graph illustrates capital requirements for the next 65 years. This timeline ensures that each asset in the AMP category has gone through at least one full lifecycle. The forecasted requirements have been aggregated into 5-year increments.

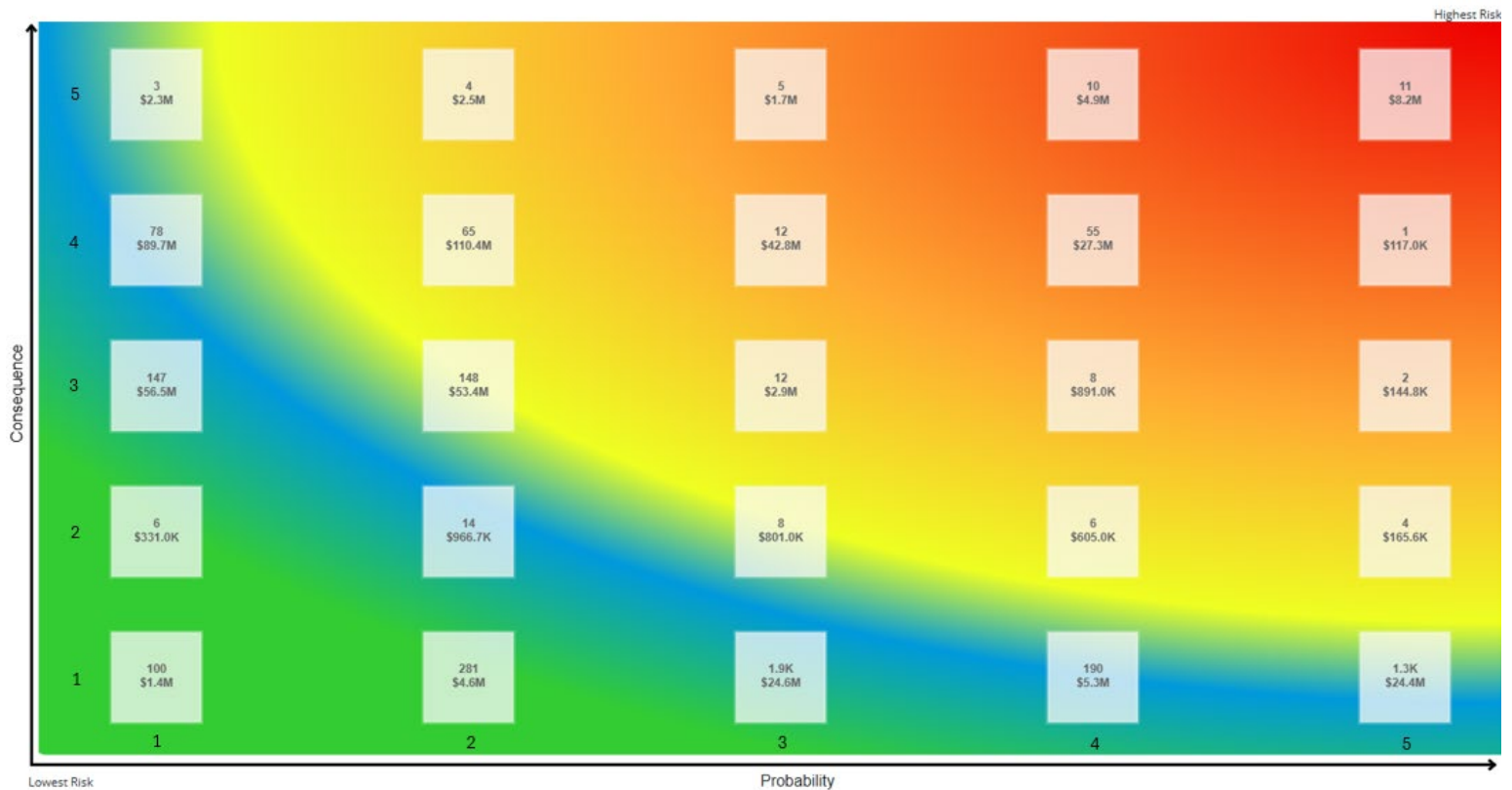
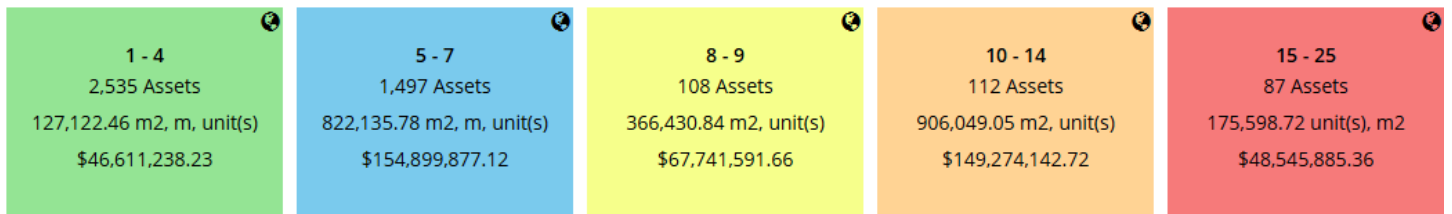


The projected lifecycle activities that will need to be undertaken over the next 10 years to maintain the current levels of service are illustrated in Appendix A.

4.1.6 Risk & Criticality

Risk Matrix

The following matrix illustrates the relationship between the probability and consequence of failure for all assets in the Road Network AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for the criteria behind this risk rating matrix.



Risks to Current Asset Management Strategies

The following table illustrates key trends, challenges, and risks the Municipality is currently facing to service delivery of the Road Network.

	Risk Type	Description
	Asset Data Confidence	Asset Data Confidence is not currently considered a risk. Roads Needs Studies are completed regularly by the Engineering department based on a specific set of identified criteria (rideability, etc.).
	Lifecycle Management Strategies	Results from Roads Needs Studies are utilized to develop a forecast for road repairs and replacements, with consideration also given to project coordination with water and sewer infrastructure projects. While this allows staff to have an accurate idea of when rehabilitation or maintenance activities are required, there is often not sufficient funds to complete all necessary lifecycle management activities within the suggested timeframe.
	Organizational Cognizance/Capacity	Internal staff capacity is occasionally limited for maintenance and repairs, but overall Leamington is well equipped regarding staffing and resources.

Risk Type		Description
	Infrastructure Design/Installation	In southeastern Leamington, specifically in the area constructed on the former lakebed of Lake Erie, roads were originally designed as farm roads, with peat moss as the base. Paving has occurred over the peat moss; however, it does not last long as the base is not properly constructed. These roads require redesign, however this would require a significant amount of funding which the Municipality does not have available at this time. There are also several roads in the Northern part of Leamington which are now experiencing high volumes of heavy vehicle traffic due to the growth of the Greenhouse industry, which they have not been designed to withstand. This was leading to the very fast deterioration of these roads. In some cases, the roads have been converted back to gravel to facilitate more frequent maintenance. Municipal staff are aware these roads require a rebuild to handle the heavy equipment traffic. However, it would require a significant amount of funding to complete the necessary road reconstruction, which the Municipality does not have at this time.
	Aging Infrastructure	A minor portion of Road Network assets are surpassing their expected useful lives by up to 5-10 years due to prioritization of road projects and juggling the various needs of the Municipality.
	Climate Change & Extreme Weather Events	Leamington has been experiencing higher lake levels over the past 5 years that have led to higher water levels coming up on land, and filling drainage ditches higher than intended, for longer periods of time. This has resulted in quicker deterioration of both road surfaces and bases. Although,

Risk Type		Description
		since 2020 lake levels have been declining and data shows by 2023, Leamington's lake levels were roughly equal to 2017.
	Growth	The Northern section of Leamington is experiencing continuous growth of the industrialized agricultural greenhouse industry. This is leading to increased heavy vehicle traffic on Northern rural collector roads and an increase in population due to job creation. This growth in both commercial and residential development has accelerated the deterioration of rural road network assets and increased the frequency and cost of maintenance operations. Subdivision growth in southwest and southeast Leamington has made it necessary to upgrade Road Network assets in these areas to handle increased traffic.
	Infrastructure Reinvestment	Council and the Senior Management Team understand the importance of having sufficient capital funds, however there is never enough funding to complete all the required work. More maintenance funding is being utilized to delay the capital expenditures, but there is still not enough funding to complete all required projects.
	Other	Leamington strives to maintain the minimum maintenance standards for the roads to meet regulatory requirements. There is a high priority to meet these standards for public health & safety.

4.1.7 Levels of Service (LOS)

The following tables illustrate Leamington's level of service (LOS) for the Road Network AMP category. These metrics include the community, technical, and corporate levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Road Network AMP category.

Road Network – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.AC.1	Description, which may include maps, of the transportation system in the Municipality and its level of connectivity. Including roads, sidewalks, and supporting infrastructure such as bike lanes, bus stops, pathways, etc.	Acceptable The transportation system has basic infrastructure in place such as well-maintained roads, sidewalks present in some areas, some bike lanes and pathways, and bus stops located convenient locations. However, it may still lack adequate connections and may not fully support all modes of transportation. Some recommendations from transportation plans get implemented based on the availability of resources.	SEE APPENDIX B	Leamington is providing an acceptable level of service.	Staff Input (2024)	N/A

Road Network – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.AC.1	Description, which may include maps, of the transportation system in the Municipality and its level of connectivity. Including roads, sidewalks, and supporting infrastructure such as bike lanes, bus stops, pathways, etc.	O. Reg. 588/17	- Corporate LOS Spreadsheet - Maps / Drawings	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Road Network – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.RP.01	Description or images that illustrate the different levels of road class pavement condition	Acceptable Staff have a basic understanding of the different road classifications and their corresponding pavement conditions. They know the importance of proper maintenance and repair for different road classes but may not fully understand the nuances and complexities of road maintenance.	N/A	Leamington is providing and acceptable level of service and is leaning towards an excellent level.	Staff Input (2024)	N/A
RN.RP.06	Description of the compliance with the Minimum Maintenance Standards (MMS) for roads.	Excellent When the maintenance standards are exceeded, and the roads are in excellent condition. There is little to no damage or wear and tear, and the road is smooth and safe for drivers. This level of maintenance can contribute to a positive driving experience while reducing the risk of accidents.	N/A	Leamington is providing an excellent level of service, meeting and exceeding the MMS.	Staff Input (2024)	N/A

Road Network – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.RP.01	Description or images that illustrate the different levels of road class pavement condition	O. Reg. 588/17	- Corporate LOS Spreadsheet - Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
RN.RP.06	Description of the compliance with the Minimum Maintenance Standards (MMS) for roads.	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Road Network AMP category.

Road Network – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.AC.2	% of accessible parking from total parking spots.	Excellent Exceeding regulatory requirements or best practices.	N/A	Leamington employs a by-law that exceeds the standard requirements.	Staff Input (2024)	The standard for the percentage of accessible parking spots in Municipal parking in Canada are specified by the Canadian Accessibility Standards (CSA). However, parking requirements are more specified by the Integrated Accessibility Standards Regulation (IASR) which form a part of the Accessibility for Ontarians With Disabilities Act (AODA). The standard requires a minimum of 1 accessible parking spot for every 25 total parking spots, or a 4% minimum of the total parking spots, whichever is greater.

Road Network – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.AC.2	% of accessible parking from total parking spots.	Recommendation	-Corporate LOS Spreadsheet -Maps / Drawings	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Road Network – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.RP.02	Average pavement condition index for paved roads in the Municipality (Local)	Acceptable Pavement Condition Index Score above 70.	75	Leamington can calculate this value in Citywide.	Citywide (2024)	N/A
RN.RP.03	Average pavement condition index for paved roads in the Municipality (Collector)	Acceptable Pavement Condition Index Score above 80.	81	Leamington can calculate this value in Citywide.	Citywide (2024)	N/A
RN.RP.04	Average pavement condition index for paved roads in the Municipality (Arterial)	Excellent Pavement Condition Index Score between 60 - 80.	84	Leamington can calculate this value in Citywide.	Citywide (2024)	N/A
RN.RP.05	Average surface condition for unpaved roads in the Municipality (excellent, good, fair, poor).	Acceptable Condition Index Score above 80.	88	Leamington can calculate this value in Citywide.	Citywide (2024)	N/A
RN.RP.07	% of roads in poor or very poor condition.	Excellent Less than 10%	6%	Leamington can calculate this value in Citywide.	Citywide (2024)	N/A
RN.RP.08	% of sidewalks in poor or very poor condition.	Needs Improvement More than 20%	55%	Leamington can calculate this value in Citywide.	Citywide (2024)	N/A

Road Network – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.RP.02	Average pavement condition index for paved roads in the Municipality (Local)	O. Reg. 588/17	-Citywide – AM -Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
RN.RP.03	Average pavement condition index for paved roads in the Municipality (Collector)	O. Reg. 588/17	-Citywide – AM -Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
RN.RP.04	Average pavement condition index for paved roads in the Municipality (Arterial)	O. Reg. 588/17	-Citywide – AM -Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
RN.RP.05	Average surface condition for unpaved roads in the Municipality (very good, good, fair, poor).	O. Reg. 588/17	-Citywide – AM -Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
RN.RP.07	% of roads in poor or very poor condition.	Recommendation	-Citywide – AM -Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
RN.RP.08	% of sidewalks in poor or very poor condition.	Recommendation	-Citywide – AM -Road Needs Study	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Road Network – Safety & Regulatory Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.SR.02	% of urban roads with sidewalks on at least one side.	Acceptable	60%	Leamington is currently providing an Acceptable level of service and is installing sidewalks where necessary as roads are reconstructed.	Staff Input 2024	According to a study conducted by the Conference Board of Canada in 2016, the average percentage of roads with sidewalks on at least one side in Canadian cities was 70%. However, this estimate is based on a small sample of cities and may not be representative of all cities in Canada.

Road Network – Safety & Regulatory Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.SR.02	% of urban roads with sidewalks on at least one side.	Recommendation	Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Road Network – Sustainability value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.S.02	% of streetlights converted to LED	Acceptable Between 60% - 80%	75.3%	Staff can calculate this % in Citywide.	Staff Input (2024)	N/A

Road Network – Sustainability value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.S.02	% of streetlights converted to LED	Recommendation	-Corporate LOS Spreadsheet -Citywide (2024)	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Road Network Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
RN.AF.01	Annual sustainable capital reinvestment / required capital reinvestment rate	Needs Improvement Less than 70%	30%	This is calculated by comparing the available funding from sustainable sources of revenue to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Road Network Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
RN.AF.01	Annual sustainable capital reinvestment / required capital reinvestment rate	Recommendation	-Citywide AM -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Road Network – Levels of Service – Risk Heat Map – Excellent:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of accessible parking from total parking spots.	1.0	1.0	1.0	3.0	3.0
% of road surfaces in poor or very poor condition.	2.0	1.0	3.0	3.0	3.0
Average pavement condition index for paved roads in Leamington (Arterial).	2.0	1.0	2.0	2.0	2.0
Description of the compliance with the minimum maintenance standards for roads.	2.0	1.0	2.0	2.0	2.0

Road Network – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Average pavement condition index for paved roads in Leamington (Collector).	2.0	1.0	2.0	2.0	2.0
Average pavement condition index for paved roads in Leamington (Local).	2.0	1.0	2.0	2.0	2.0
Description or images that illustrate the different levels of road class pavement condition.	2.0	1.0	2.0	1.0	1.0
Description, which may include maps, of the transportation system in the Municipality and its level of connectivity. Including roads, sidewalks, and all supporting infrastructure such as bike lanes, bus stops, pathways etc.	2.0	1.0	2.0	2.0	2.0
Average surface condition for unpaved roads in Leamington (excellent, good, fair, poor)	2.0	1.0	2.0	2.0	2.0

Road Network – Levels of Service – Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of sidewalks in poor or very poor condition.	2.0	1.0	2.0	3.0	3.0
Annual sustainable capital reinvestment / required capital reinvestment rate	2.0	1.0	2.0	2.0	2.0

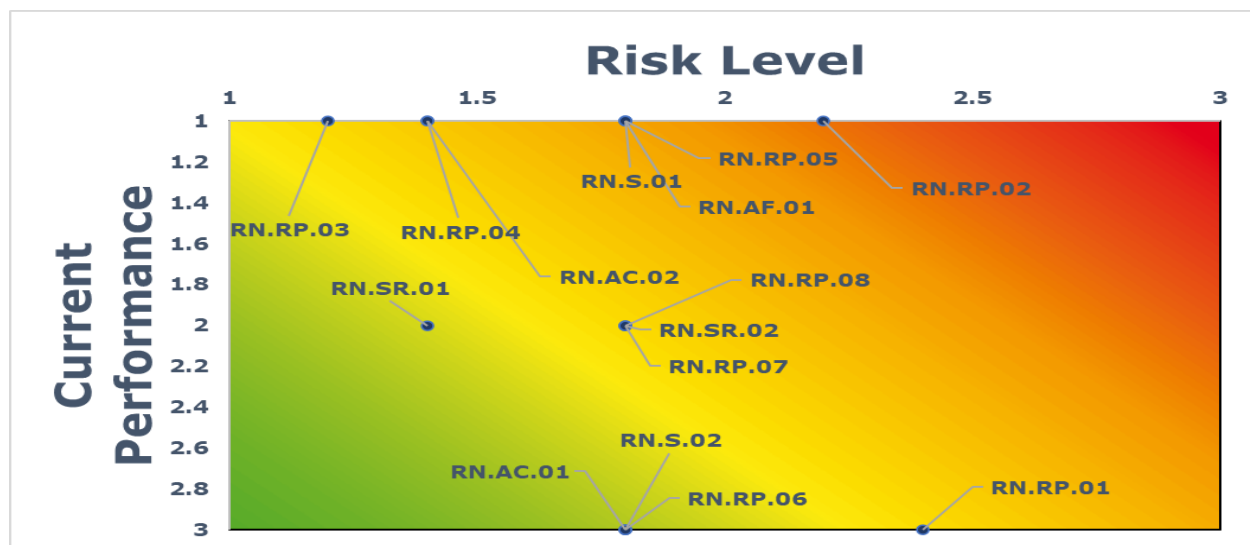
Road Network – Levels of Service – Risk Heat Map – Needs Data:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of streetlights converted to LED.	1.0	2.0	1.0	1.0	1.0
% of urban roads with sidewalks on at least one side.	1.0	1.0	1.0	2.0	2.0

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is illustrated below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for the Road Network. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding – Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

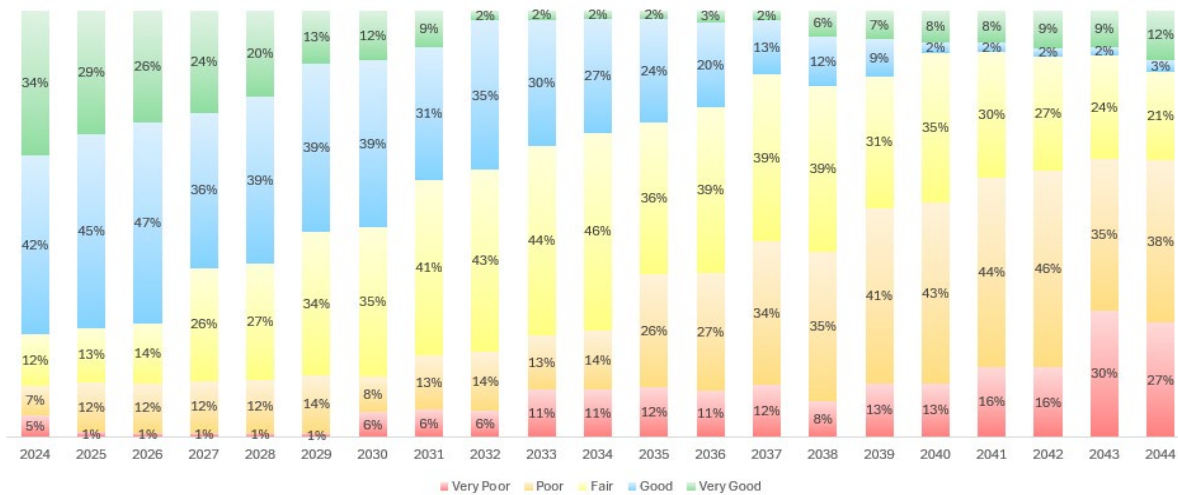
Scenario 2 - Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

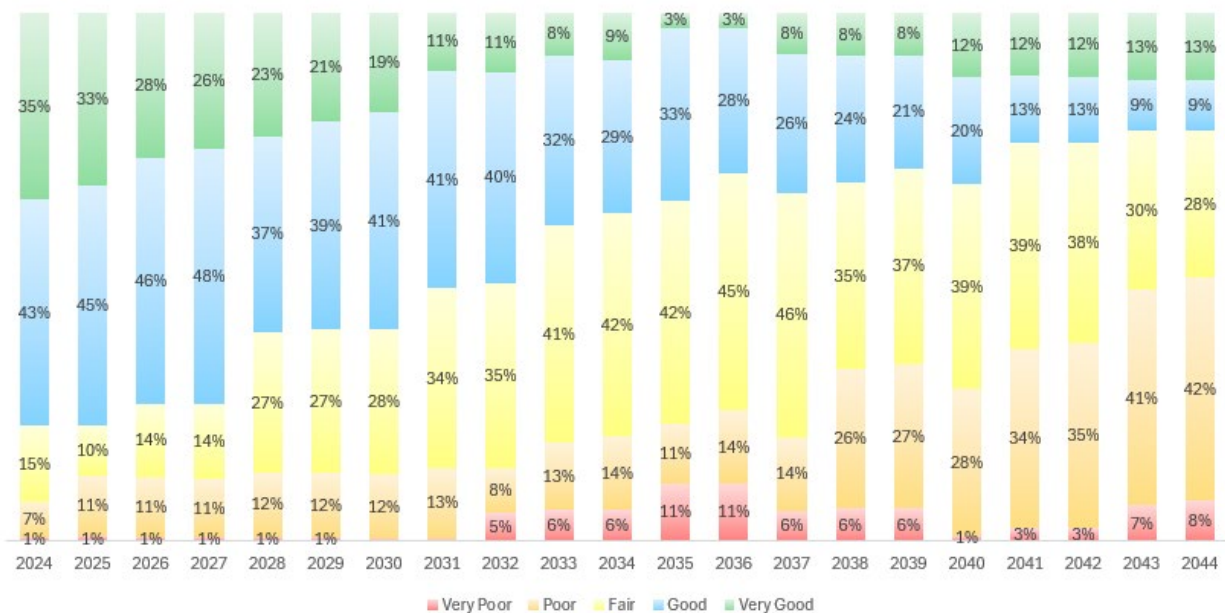
This scenario illustrates asset performance based on current capital and operating annual funding levels of \$19.1 million over a 20-year forecast and follows the lifecycle activities described in 4.1.4. Any funding that is not spent each year is carried forward into the next. The Municipality should expect a decline in condition over the 20-year period as assets in Very Good condition decrease from 34% to 12% and assets in Very Poor condition increase from 5% to 27%. The majority of assets move from Very Good and Good to Very Poor and Poor over the 20-year period.



Scenario 2: Maintain Current Performance

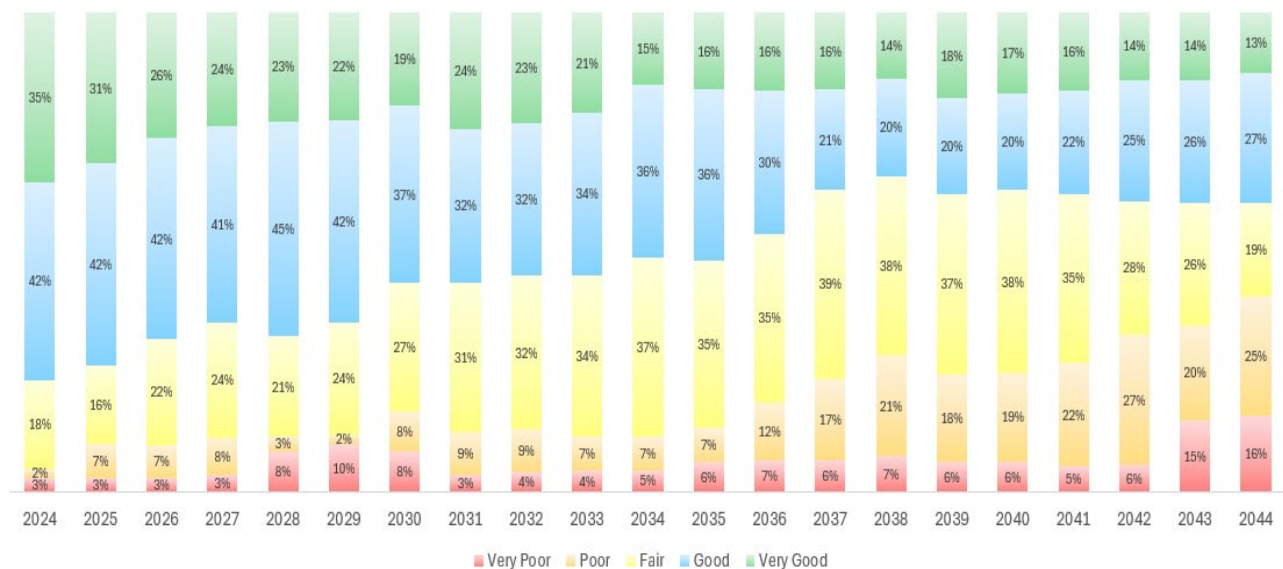
This scenario illustrates asset performance based on the constraint to maintain the Road Network in relatively the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality an average of \$23.4 million annually.

Assets in Very Good condition decrease from 35% to 13% as assets in Very Poor condition increase slightly from 1% to 8% over the 20-year period. The majority of assets in scenario 2 move from Very Good and Good to Good and Fair condition over the 20 year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for the Road Network over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Road Network category. This would cost the Municipality an average of \$22.1 million annually. The percentage of assets in Very Good condition decreases from 35% to 13% as assets in Very Poor Condition increase from 3% to 16%. The majority of assets in the Road Network move from Very Good and Good condition (77%) to a relatively even distribution across Very Good to Very Poor over the 20-year period.



4.1.8 Recommendations

Lifecycle Management Strategies

The Municipality should evaluate lifecycle event schedules, timing, and costs on a regular basis and update according to an evolving understanding of the optimal strategy to extend the life of the asset at the lowest total cost of ownership.

Risk Management Strategies

Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include regular reviews of high-risk assets to determine appropriate risk mitigation strategies.

Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning.

Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

4.2 Bridges & Culverts

Bridges & Culverts represent a critical portion of the transportation services provided by the Municipality. Maintenance of all bridges and culverts located across the Municipality are the responsibility of the Engineering and Public Works departments with the goal of keeping structures in an adequate state of repair and minimizing service interruptions. These bridges and culverts are structural assets with a span of 3 meters or more.

The state of infrastructure for bridges and culverts is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$55,893,000	60% (Good)	Annual Requirement:	\$1,397,000
		Funding Available	\$1,262,000
		Annual Deficit	\$135,000

4.2.1 Levels of Service Statement

The Municipality of Leamington is dedicated to providing a high level of service for its bridges and culverts, ensuring that they are easily accessible to all members of the community and capable of meeting the demands of traffic in the area. The Municipality is committed to ensuring that these critical infrastructure components are available for use in all weather conditions, providing a reliable transportation network for all.

The bridges and culverts in the Municipality are maintained to a very high standard, with minimal unplanned service interruptions or closures. The Municipality recognizes the importance of maintaining these assets to ensure the safety and well-being of all citizens and visitors to the area.

Furthermore, the Municipality is committed to providing these services in an affordable manner, recognizing the necessary expense of maintaining and repairing bridges and culverts. The Municipality is dedicated to ensuring that the cost of this service is kept as low as possible, while still providing the necessary level of maintenance and repairs.

Finally, the Municipality is committed to meeting all regulatory requirements set by the province of Ontario. The Municipality understands the importance of complying with these regulations to ensure the safety and well-being of its citizens and visitors and works to ensure that all services provided meet or exceed these requirements.

4.2.2 Asset Inventory & Costs

The quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's Bridges & Culverts AMP category are illustrated below.

AMP Segment	Quantity	Replacement Cost	Annual Capital Requirements
Bridges	63 (4,743.78 m ²)	\$49,959,000	\$1,249,000
Culverts	3 (608.13 m ²)	\$5934,000	\$148,000
Total	66 (5,351.91 m²)	\$55,893,000	\$1,397,000

Replacement Cost \$55,893,000



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

Average Annual Capital Requirements \$1,397,000



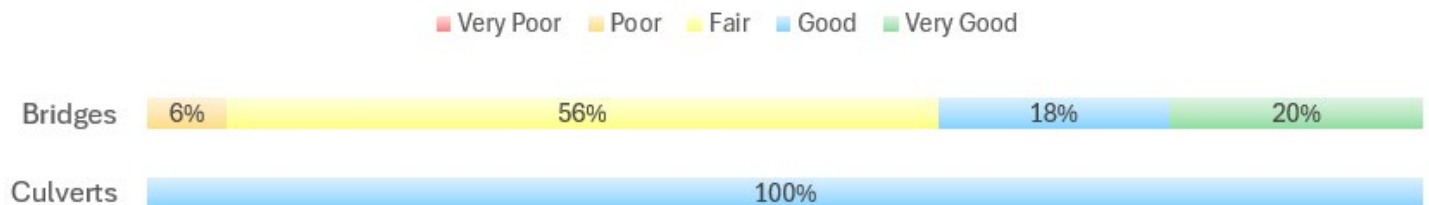
The average annual capital requirements are the amount the Municipality should be allocating annually to each Bridges & Culverts segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

4.2.3 Asset Data: Useful Life, Age, Condition

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

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
Bridges	40	54.17	60% (Good)
Culverts	40	45.50	70% (Good)
Average		53.75	60% (Good)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



To ensure that Leamington's Bridges & Culverts continue to provide an acceptable level of service, the Municipality should monitor the average condition of all assets in this AMP. If the average condition begins to decline, staff should re-evaluate their lifecycle management strategy to identify what combination of maintenance, rehabilitation and replacement activities are required to increase the overall condition of the Bridges & Culverts AMP category.

Each asset's EUL should also be reviewed periodically to determine whether adjustments are needed to better align with actual lengths of service for each AMP category.

Current Approach to Condition Assessment

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- 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). This AMP contains condition information based on the 2023 OSIM report for bridges.
- Staff visually inspect bridges and culverts on a regular basis between OSIM inspections to ensure the assets are structurally and functionally adequate.

The following table illustrates the rating criteria used to determine the current condition of bridges and culverts and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

4.2.4 Lifecycle Management Strategy

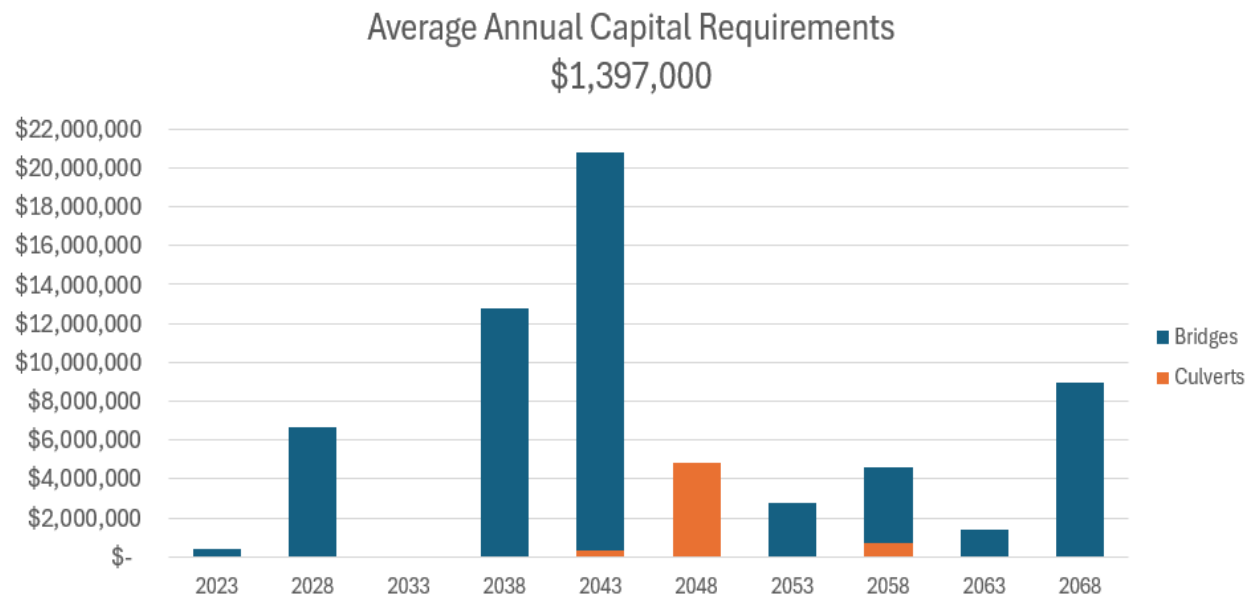
The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance, Rehabilitation, and Replacement	Maintenance includes weed and vegetation control around the structure and within the drain, minor structural repairs, washing and signage.
	All lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM).

Forecasted Capital Requirements

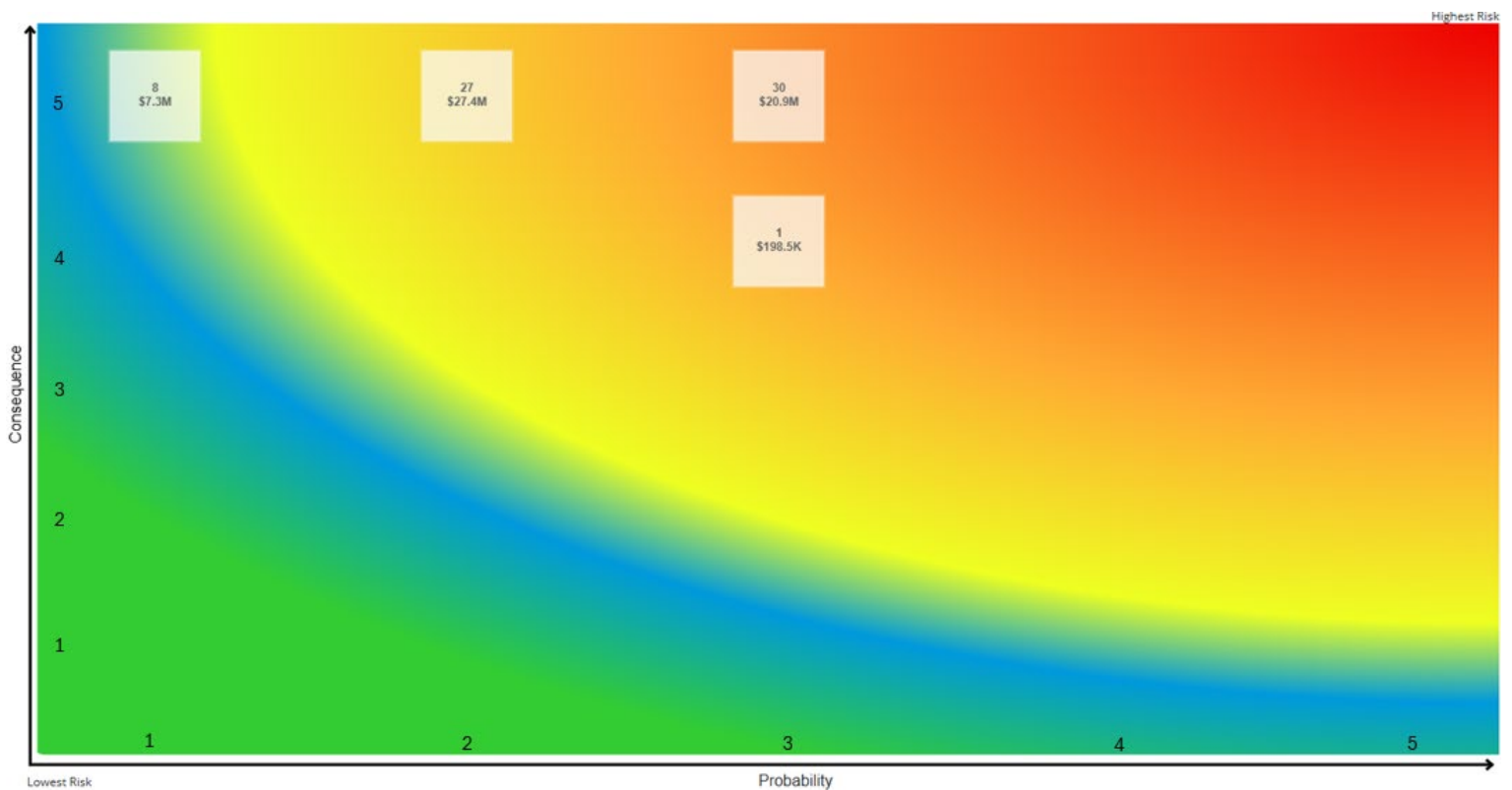
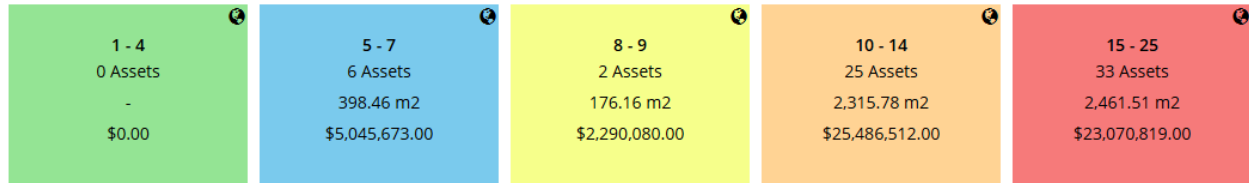
The annual capital requirement estimates the average amount per year the Municipality should allocate funding for rehabilitation and replacement activities to meet future capital needs. The following graph illustrates capital requirements for the next 45 years. This timeline ensures that each asset in the AMP category has gone through at least one full lifecycle. The forecasted requirements have been aggregated into 5-year increments.



4.2.6 Risk & Criticality

Risk Matrix

The following heatmap illustrates the relationship between the probability and consequence of failure for all assets in the Bridges & Culverts AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for the criteria behind this risk rating matrix.



Risks to Current Asset Management Strategies

The following table illustrates key trends, challenges, and risks to service delivery that Leamington is currently facing:

Risk Type		Description
	Asset Data Confidence	Asset data confidence is not considered a risk as the Municipality is completing regular Ontario Structure Inspection Manual (OSIM) inspections on their bridges and culverts.
	Lifecycle Management Strategies	Lifecycle management strategies are not considered a risk as the Municipality is actively following the recommendations provided in the OSIM inspections for maintenance, rehabilitation and replacement of bridges and culverts.
	Organizational Cognizance / Capacity	The Municipality has sufficient staff capacity for maintenance activities; however, all major infrastructure projects are completed by external contractors. In the last year, this has caused a risk as they were not able to complete the OSIM recommendations due to the availability of service within the industry. The contractors required for rehabilitation projects have limited availability, and it is difficult to get contractors qualified to perform these activities.
	Infrastructure Design / Installation	Infrastructure design is not considered a major concern as the Municipality follows industry standards in the design of their bridges and culverts.
	Aging Infrastructure	Many bridges in the Municipality are aging however, staff is mitigating this risk by completing one bridge replacement every year based on OSIM recommendations. OSIM recommends 2-3 Bridges a year but funding available only allows for 1/yr.

Risk Type		Description
	Climate Change & Extreme Weather Events	Rising and lowering of water levels has resulted in the risk of problems associated with erosion of the bridges, however this has not been formally documented and is difficult to measure at this time.
	Growth	Growth is not considered a risk as existing infrastructure is adequate in supporting the current population and expected growth.
	Infrastructure Reinvestment	Infrastructure re-investment is not considered a risk as there is adequate funding, and a plan in place to prioritize re—investment in bridges and culverts. The Municipality utilizes gas tax funding for bridge replacement projects, therefore if this funding changes, the Municipality may have to reconsider the practice of replacing a bridge every year. OSIM recommends 2-3 Bridges a year but funding available only allows for 1/yr.

4.2.7 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Bridges & Culverts AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Bridges & Culverts AMP category.

Bridges & Culverts – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
BC.AC.01	Description of the traffic that is supported by Municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Acceptable Bridges in this category can support motor vehicles, including heavy transport vehicles, and may have limited but functional accommodations for pedestrians and cyclists, such as sidewalks or bike lanes. While emergency vehicles may be able to access the bridge, they may still face some challenges due to narrow lanes, sharp turns, or other factors.	SEE APPENDIX B	In urban areas, bridges typically have a greater volume and diversity of traffic, including passenger vehicles, trucks, buses, bicycles, and pedestrians. This higher traffic volume means that urban bridges must be designed and maintained to accommodate heavy loads and frequent use. In contrast, rural bridges typically have lower traffic volumes and may only serve a small number of vehicles each day. These bridges may also serve primarily agricultural or local traffic, rather than the variety of vehicles found in urban areas. While rural bridges may not require the same level of maintenance as urban bridges, they still need to be regularly inspected and maintained to ensure their structural integrity and safety.	Staff Input (2024)	N/A

Bridges & Culverts – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
BC.AC.01	Description of the traffic that is supported by Municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	O. Reg. 588/17	-Corporate LOS Spreadsheet -OSIM Report	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Bridges & Culverts – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
BC.RP.01	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	Excellent Excellent level of knowledge of bridges and culverts conditions means that the Municipality has an in-depth understanding of the current condition of their bridges and culverts and have a robust system in place for regular monitoring, maintenance, and replacement as needed to ensure the safe and efficient operation of these structures.	N/A	Leamington has robust a robust understanding for the condition and lifecycle requirements for bridges and culverts. OSIM inspections are performed according to guidelines and recommendations from these inspections are utilized.	Staff Input (2024)	N/A

Bridges & Culverts – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
BC.RP.01	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative metrics that determine the technical levels of service provided by the Bridges & Culverts AMP category.

Bridges & Culverts – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
BC.RP.02	% of bridges in the Municipality with loading or dimensional restrictions	Excellent Less than 5%	1.50%	Leamington only has 1 bridge that has loading or dimensional restrictions.	AMP (2025)	N/A
BC.RP.03	Average bridge condition index value for bridges in the Municipality	Acceptable Average bridge condition index score between 60 – 80	60%	Scores from the 2023 OSIM Report with 1 year age-based deterioration.	OSIM 2023 & Citywide (2024)	N/A
BC.RP.04	Average bridge condition index value for structural culverts in the Municipality	Acceptable Between 60 – 80%	70%	Actual scores from the 2023 OSIM Report.	Citywide (2024)	N/A
BC.RP.05	% of bridges in poor or very poor condition	Excellent Less than 10%	6%	Leamington can calculate this in Citywide	Citywide (2024)	N/A
BC.RP.06	% of culverts in poor or very poor condition	Excellent Less than 10%	0%	Leamington can calculate this in Citywide	Citywide (2024)	N/A

Bridges & Culverts – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
BC.RP.02	% of bridges in the Municipality with loading or dimensional restrictions	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
BC.RP.03	Average bridge condition index value for bridges in the Municipality	O. Reg. 588/17	-Citywide AM -OSIM Report	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
BC.RP.04	Average bridge condition index value for structural culverts in the Municipality	O. Reg. 588/17	-Citywide AM -OSIM Report	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
BC.RP.05	% of bridges in poor or very poor condition	Recommendation	-Citywide AM -OSIM Report	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
BC.RP.06	% of culverts in poor or very poor condition	Recommendation	-Citywide AM -OSIM Report	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Bridges & Culverts – Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
BC.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate	Acceptable Greater than 90%	90%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Bridges & Culverts – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
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Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Bridges & Culverts – Levels of Service – Risk Heat Map – Excellent:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of bridges in poor or very poor condition	2.0	1.0	2.0	2.0	2.0
% of bridges in Leamington with loading or dimensional restrictions	1.0	1.0	1.0	1.0	1.0
% of culverts in poor or very poor condition	2.0	1.0	2.0	2.0	2.0
Average bridge condition index value for bridges in Leamington	2.0	1.0	2.0	2.0	2.0
Description or images of the condition of bridges & culverts and how this would affect use of bridges & culverts	2.0	1.0	2.0	2.0	2.0

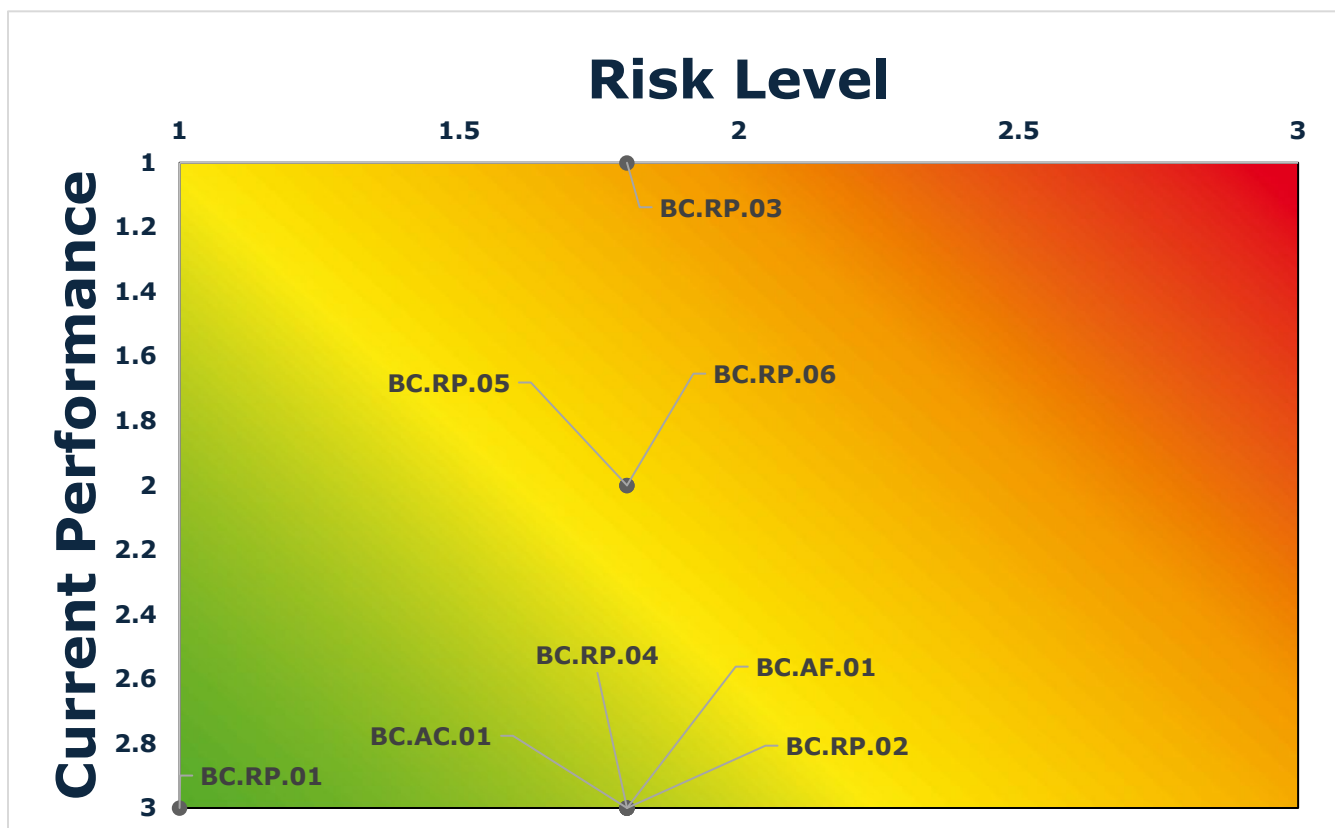
Bridges & Culverts – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Average bridge condition index value for structural culverts in Leamington	2.0	1.0	2.0	2.0	2.0
Description of the traffic that is supported by Municipal bridges (eg. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	2.0	1.0	2.0	2.0	2.0
Annual sustainable capital reinvestment/required capital reinvestment rate	2.0	1.0	2.0	2.0	2.0

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score:1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is illustrated below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for Bridges & Culverts. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

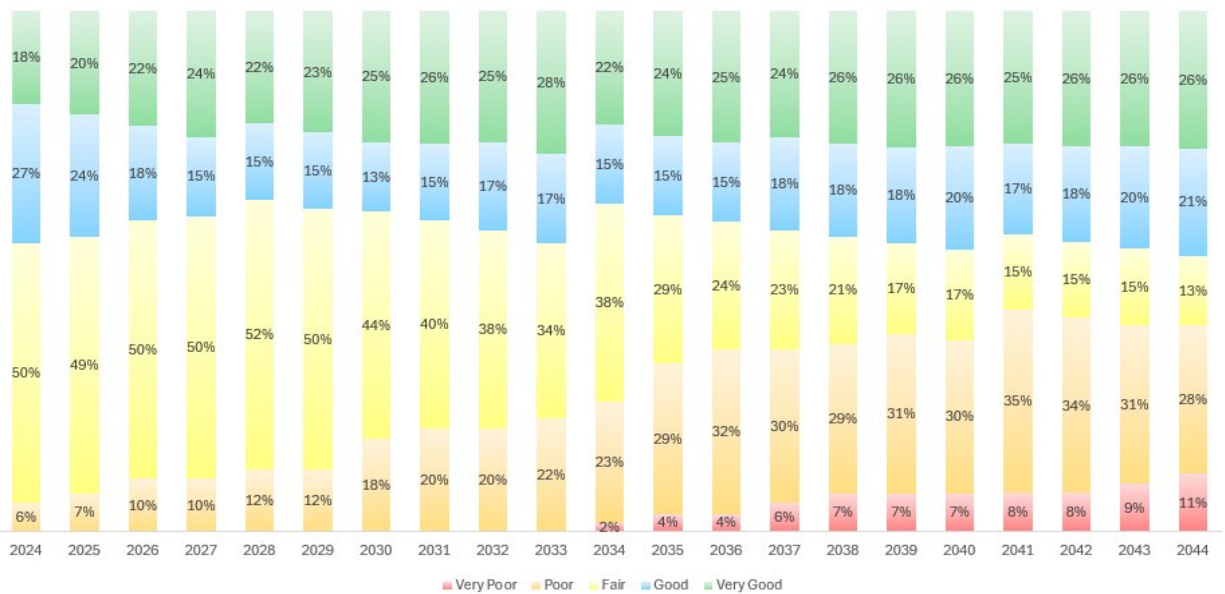
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

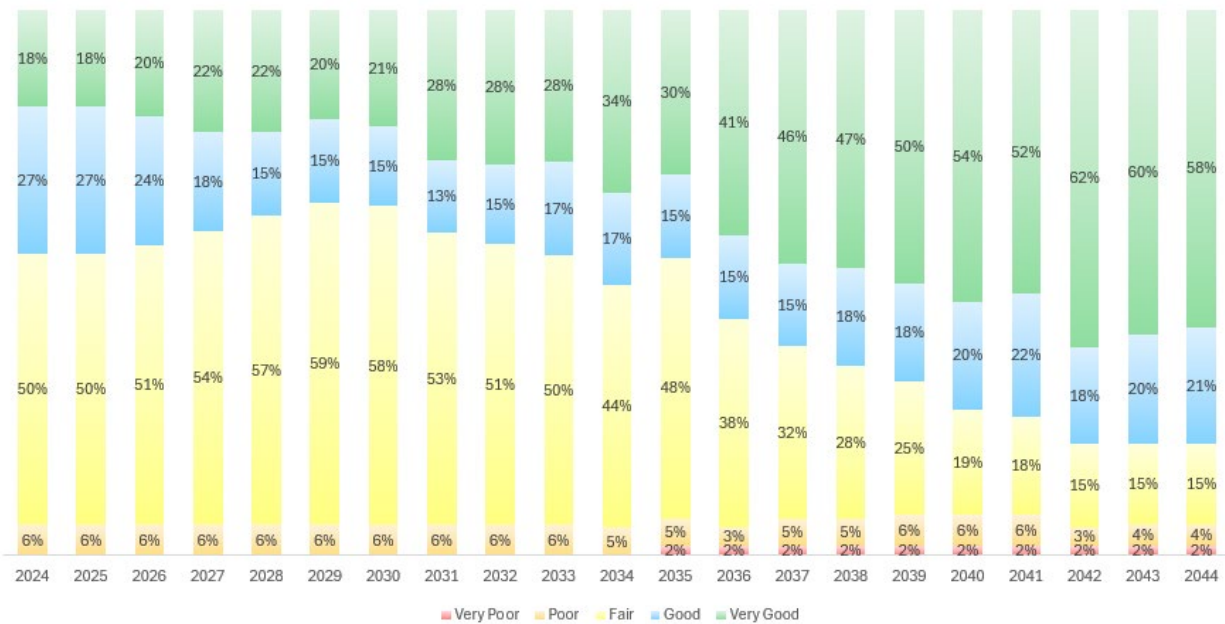
This scenario illustrates asset performance based on current capital and operating funding levels of \$1.3 million over a 20-year forecast and follows the OSIM recommended repair and rehabilitation strategy. The Municipality should expect a decline in overall condition over the 20-year period but assets in Very Good condition increase from 18% to 26% and assets in Very Poor condition increase from 0% to 11%. The majority of assets move from Fair or Better, to Fair, Poor, and Very Poor over the 20-year period.



Scenario 2: Maintain Current Performance

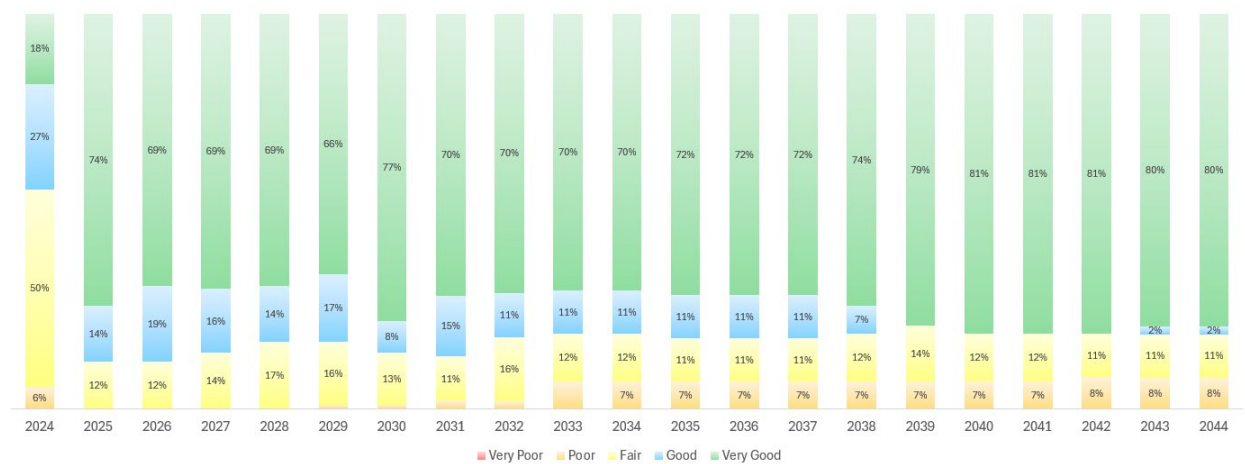
This scenario illustrates asset performance based on the constraint to maintain Bridges & Culverts in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044. The Municipality would have to spend an average of \$2.8 million annually in order to achieve this outcome.

Assets in Very Good condition increase from 18% to 58% as assets in Very Poor condition increase from 0% to 2% over the 20-year period. The majority of assets move from Fair to Very Good condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for Bridges & Culverts over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Bridges & Culverts category, the percentage of assets in Very Good condition increases from 18% to 44% as assets in Very Poor Condition increase from 0% to 16%. This would cost the Municipality on average \$31 million annually as capital and operating activities are carried out. The majority of assets in the Bridges & Culverts category move from Fair condition (50%) to Very Good condition (44%) over the 20-year period.



4.2.8 Recommendations

Lifecycle Management Strategies

Continue to complete regular inspections according to the Ontario Structural Inspection Manual (OSIM). As completed, all condition assessments should be uploaded into the asset inventory to drive forward asset management planning and forecasting activities.

Continue to update current replacement and event costs on a cyclical basis and verify the impact.

Risk Management Strategies

Implement risk-based decision making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning.

Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

4.3 Facilities

The Municipality of Leamington owns and maintains several facilities and a recreation centre that provides key services to the community. These include:

- Administrative offices
- Fire Hall and associated offices and facilities
- Public works garages, Fleet Services, and storage buildings
- 179,000 ft² Recreation Centre which includes a double pad arena, gymnasium, 25m lap pool, weight room, fitness studio, racquetball/squash courts and various meeting spaces
- A marina, library, and arts centre
- OPP/Court Building (7 Clark Street West)

The Facilities state of infrastructure is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$128,074,000	64.34% (Good)	Annual Requirement:	\$3,043,000
		Funding Available:	\$1,318,000
		Annual Deficit:	\$1,725,000

4.3.1 Levels of Service Statement

The Municipality of Leamington is committed to providing exceptional service to all visitors and residents of its Municipal facilities. Our service statement focuses on accessibility, sustainability, reliability, performance, and affordability.

The Municipality believes that all members of the community, including people with disabilities, should be able to fully access and enjoy our facilities. Therefore, steps have been taken to ensure that Municipal buildings are inclusive and accessible to all. This includes providing accessible entrances, parking, washrooms, and assistive technologies.

Leamington is committed to promoting sustainable practices in our municipal facilities to reduce the environmental impact.

To ensure that Municipal buildings are safe, secure, and well-maintained, regular inspections and maintenance are conducted. Emergency plans are in place to ensure that buildings can be used to respond quickly and effectively to any unforeseen events or emergencies.

Leamington's goal is to provide top-quality service to all our visitors and residents. The Municipality monitors and evaluates service delivery regularly to ensure that expectations are met or exceeded. The Municipality also seeks feedback from customers to identify areas for improvement and implement changes as needed.

The Municipality is committed to providing affordable services to residents and visitors.

In summary, the Municipality of Leamington is committed to providing a high level of service to its residents and visitors. The Municipality strives to ensure that all municipal facilities are accessible, sustainable, reliable, and perform well, while also being affordable and accessible to everyone.

4.3.2 Asset Inventory & Costs

The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's Facilities portfolio.

AMP Segment	Quantity (Components)	Replacement Cost	Annual Capital Requirement
General Government	1 (20)	\$16,129,000	\$338,000
Protection Services	4 (26)	\$10,683,000	\$240,000
Recreation & Culture Services	23 (1,140)	\$97,053,000	\$2,367,000
Transportation Services	17 (31)	\$4,209,000	\$98,000
Total	45 (2,630)	\$128,074,000	\$3,043,000

Replacement Cost \$128,074,000



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

Average Annual Capital Requirements \$3,043,000



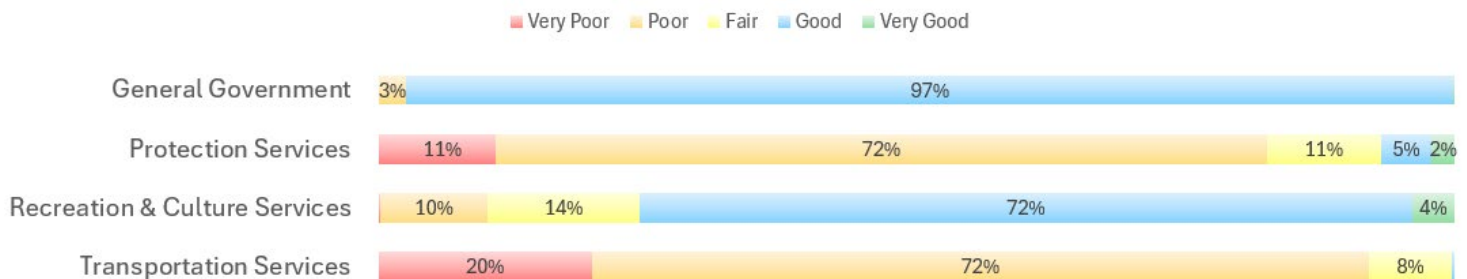
The average annual capital requirements are the amount the Municipality should be allocating annually to each Facilities segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

4.3.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and the estimated useful life for each AMP segment. The Average Condition (%) is a weighted average based on replacement costs.

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
General Government	15 – 50	11.17	72.14% (Good)
Protection Services	10 – 50	16.33	39.80% (Poor)
Recreation & Culture Services	5 – 50	14	67.06% (Good)
Transportation Services	10 – 50	19.75	34.01% (Poor)
Average		14.67	64.34% (Good)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



To ensure that Leamington's Facilities continue to provide an acceptable level of service, the Municipality should monitor the average condition of all assets. If the average condition begins to decline, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation, and replacement activities are required to increase the overall condition of their buildings.

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

Current Approach to Condition Assessment

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- Although there were some older Building Condition Assessments (BCAs) available at the time of this AMP, due to the lack of componentization of buildings in the asset management database, the condition assessments and recommendations from those BCAs were included with age-based deterioration to date. The Municipality is planning to conduct BCAs more frequently as it works towards componentizing buildings using the Building Uniformat Code Classification where applicable to improve capital planning.
- Leamington has a formally defined approach to lifecycle management strategies. The results of the BCAs and recommendations made by contractors who completed preventative maintenance on buildings are used to determine a 5-year forecast of lifecycle activities.
- Availability of funding and licensed inspectors in the area are major constraints to the Municipality completing BCAs on every building in the portfolio.

The following table illustrates the rating criteria used to determine the current condition of facilities and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

4.3.4 Lifecycle Management Strategy

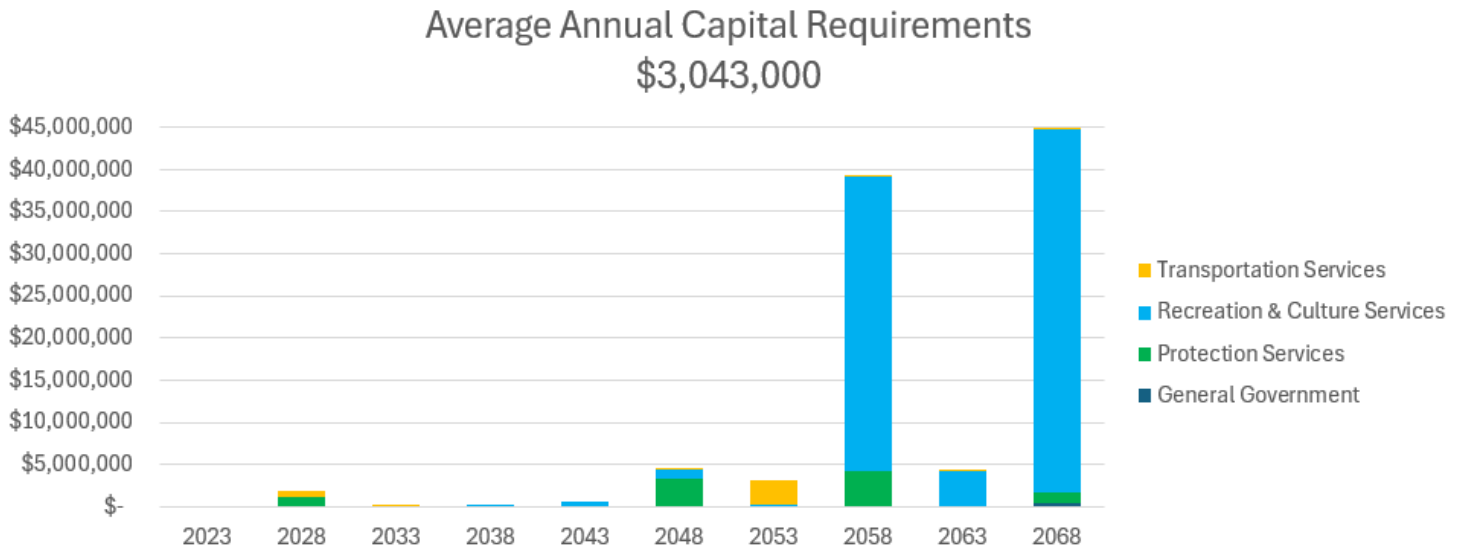
The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance / Rehabilitation	The Municipality's operations and maintenance program is focused on the following components: AHUs, Exhaust Fans, Chillers, Blower Fans, Gas Fired Boilers, Cooling Tower/Evaporative Condensers, A/C Systems, Air Compressors, Air Cleaners, Packaged HVAC Units, Circ. Pumps, Cooling Fans, Domestic Water Heaters, Electric Motors, Make up Air Units, Duct Heaters, Dehumidification Unit, Ice Plant Operations, and Elevators.
	Municipal buildings are subject to internal inspections on an as-needed basis.
	Maintenance activities are undertaken as a result of internal inspections, prioritizing activities related to health and safety and regulatory compliance.
	HVAC inspections are completed by an external contractor semi-annually, and recommended repairs are documented.
	Roof inspections are completed annually which results in a report containing recommended repairs.
	Overall, there are 2 processes: Firstly, the condition assessment identifies forecasted replacement over the immediate, short term (1 to 3 years), and long term (5 +). Secondly, correlate this information with our preventative maintenance program to confirm these forecasted priorities and identify other targets if necessary.
Replacement	Assessments are completed strategically as buildings approach their end-of-life to determine whether replacement or rehabilitation is a more appropriate treatment option.

4.3.5 Forecasted Capital Requirements

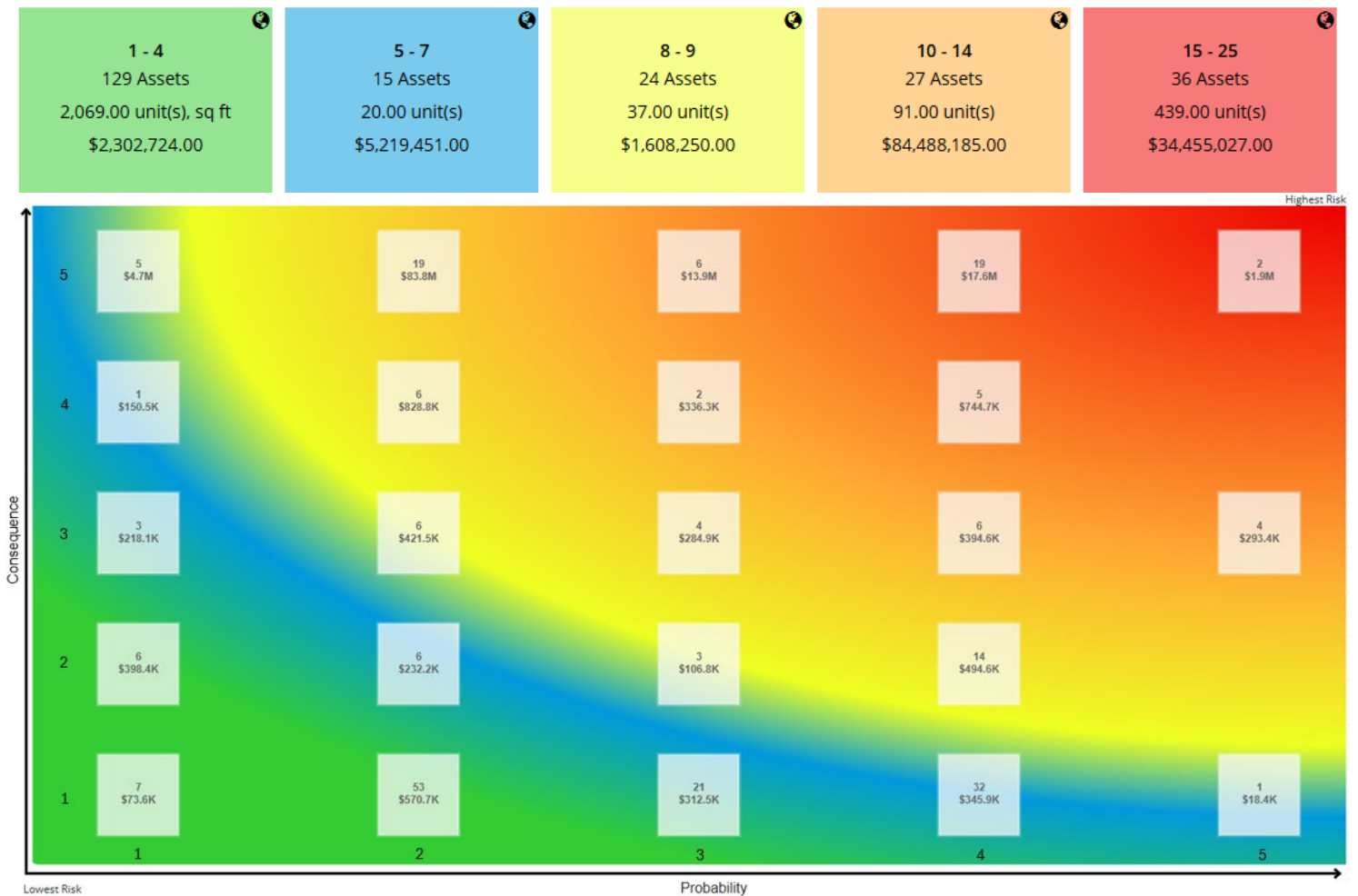
The following graph illustrates long-term capital requirements. The annual capital requirement represents the average amount per year that Leamington should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 50 years. This forecast ensures that every asset has gone through at least one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments.



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

4.3.6 Risk & Criticality

The following matrix illustrates the relationship between the probability and consequence of failure for all assets in the Road Network AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for the criteria behind this risk rating matrix.



4.3.7 Risk to Current Asset Management Strategies

The following table illustrates key trends, challenges, and risks to service delivery that Leamington is currently facing:

Risk Type		Description
	Asset Data Confidence	The asset data confidence is at a good level. Condition assessments are completed on most of the buildings, keeping asset data up-to-date.
	Lifecycle Management Strategies	The Municipality has a formally defined approach to lifecycle management strategies. Results of the building condition assessments, along with recommendations made by the contractors who completed regular preventative maintenance on the buildings, are used to determine a 5-year forecast of lifecycle activities for the buildings.
	Organizational Cognizance/Capacity	Staff capacity is adequate overall; however, the Municipality is using external contractors to complete preventative maintenance activities on the buildings due to staff capacity limitations and specialized qualifications such as class B tickets.
	Infrastructure Design/Installation	Facilities such as the Fire/OPP/Courthouse, Marina, Recreation Centre (original building), Art Gallery, Library, and a Public Works Garage were constructed in the 1970's and 1980's and are assumed to contain asbestos. The ice ammonia plant is considered to be a hazard.
	Aging Infrastructure	A significant portion of Municipal buildings are reaching the end of their useful lives and are having to be rehabilitated due to their age.
	Climate Change & Extreme Weather Events	Each facility has an emergency and evacuation plan in the event of severe weather. The Recreation Centre is also the evacuation centre in the Municipality.

Risk Type		Description
	Growth	The Municipality's buildings are well equipped to handle any projected growth and community expectations. While staff do recognize there is some area for improvement, such as a lack of in-door soccer and baseball facilities, overall Municipal buildings are adequate to satisfy community needs.
	Infrastructure Reinvestment	Most building projects are completed through lifecycle funding, reserves, or tax revenue; however, the Municipality is always looking for grant opportunities.
	Other	Accessibility of municipal buildings has been identified as a regulatory requirement. The Municipality is phasing in accessibility requirements by using capital budgets to transform spaces into accessible facilities to meet provincial deadlines.

4.3.8 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Buildings AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Buildings AMP category.

Facilities – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
B.AC.01	Description of the availability of the recreational and cultural services supported by Municipal facilities to residents.	Acceptable In a community where both availability and accessibility of services are acceptable, there are a reasonable number of facilities available, with a good range of services and resources, and they are located reasonably close to residential areas. Transportation options are available, and services are affordable for most residents.	N/A	Leamington is providing an acceptable level of service. Urban areas have a higher service level compared to rural areas.	Staff Input (2024)	N/A
B.AC.02	Description of any initiatives and plans to make buildings more accessible	Acceptable In a municipality where initiatives and plans to improve accessibility are acceptable, there is a formal policy or plan in place that addresses accessibility in municipal buildings. Building codes and standards are followed, and accessibility features, such as ramps, elevators, and accessible washrooms, are incorporated into building design and construction. Additionally, there may be partnerships with community organizations or accessibility experts to identify and address accessibility barriers.	N/A	The Municipality is in the process of installing door operators. The Municipality also strives to meet provincial accessibility standards. An accessibility audit has been initiated by the human resources department recently	Staff Input (2024)	In Ontario, municipal buildings are required to comply with the Accessibility for Ontarians with Disabilities Act (AODA) and the Ontario Building Code (OBC) to ensure accessibility for all individuals, including those with disabilities. Here are some key accessibility requirements for municipal buildings in Ontario: Barrier-Free Path of Travel: Municipal buildings must provide barrier-free paths of travel to all public spaces, including entrances, lobbies, corridors, and elevators. This includes providing ramps, elevators, or other means of access for individuals with mobility impairments. Accessible Washrooms: Municipal buildings must provide accessible washrooms that are located on barrier-free paths of travel and comply with the AODA and OBC standards. This includes providing sufficient space for maneuvering, grab bars, accessible sinks, and toilet stalls. Signage: Municipal buildings must provide signage that is easily visible and legible for all individuals, including those with visual impairments. This includes using large fonts, high contrast colors, Braille, and tactile symbols. Assistive Technologies: Municipal buildings must provide assistive technologies, such as hearing loops, closed captioning, and assistive listening devices, to ensure that individuals with hearing or visual impairments can access information and communicate effectively. Emergency Egress: Municipal buildings must provide emergency egress systems that are accessible to all individuals, including those with disabilities. This includes providing accessible exit routes, audible alarms, and emergency lighting.

Facilities – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
B.AC.01	Description of the availability of the recreational and cultural services supported by Municipal facilities to residents.	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
B.AC.02	Description of any initiatives and plans to make buildings more accessible	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Facilities – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
B.RP.01	Description of lifecycle management strategies and assessment programs applied to Municipal buildings	Acceptable In a Municipality where lifecycle management strategies and assessment programs are acceptable, there is a formal plan or policy in place that outlines the maintenance and management of municipal buildings throughout their lifecycle. Building systems are regularly assessed for performance and condition, and maintenance is carried out on a regular schedule. Additionally, there may be a system in place for tracking and analyzing data on building performance, which can inform decision-making around maintenance and upgrades.	N/A	The Municipality is providing an acceptable level of service and is leaning towards an excellent level. Building condition assessments are usually performed on major buildings and the Municipality maintains all the buildings through a general maintenance contract with an external party.	Staff Input (2024)	N/A

Facilities – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
B.RP.01	Description of lifecycle management strategies and assessment programs applied to municipal buildings	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Facilities – Sustainability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
B.S.01	Description of any initiatives and plans to make municipal buildings more energy efficient	Acceptable In a municipality where initiatives and plans to improve energy efficiency are acceptable, there is a formal strategy in place that includes regular energy audits, retrofits, and monitoring and reporting on energy use. Retrofits may target a variety of energy efficiency measures, such as lighting upgrades, HVAC upgrades, and insulation improvements. Additionally, there may be partnerships with other organizations or levels of government to leverage resources and expertise.	N/A	The Municipality reports on energy consumption and green house gas emissions as part of an engagement with the association of municipalities in Ontario. An energy report is also updated every five years	Staff Input (2024)	N/A

Facilities – Sustainability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
B.S.01	Description of any initiatives and plans to make municipal buildings more energy efficient	Recommendation	-Corporate LOS Spreadsheet -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Facilities AMP category.

Facilities – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
B.RP.02	Average condition for Municipal buildings	Acceptable Greater than 50	64.34%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A
B.RP.03	% of buildings in poor or very poor condition	Acceptable Between 10% - 25%	17%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A

Facilities – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
B.RP.01	Average condition for Municipal buildings	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
B.RP.03	% of buildings in poor or very poor condition	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Facilities – Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
B.AF.01	Annual sustainable capital reinvestment / required capital reinvestment rate	Needs Improvement Less than 70%	43%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Facilities – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
B.AF.01	Annual sustainable capital reinvestment / required capital reinvestment rate	Recommendation	-Citywide AM -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Facilities – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of buildings in poor or very poor condition	3.0	3.0	3.0	3.0	3.0
Description of any initiatives and plans to make Municipal buildings more energy efficient	2.0	2.0	2.0	2.0	2.0
Average condition for Municipal buildings	3.0	3.0	3.0	3.0	3.0
Description of any initiatives and plans to make buildings more accessible	3.0	1.0	2.0	2.0	2.0
Description of lifecycle management strategies and assessment programs applied to Municipal buildings	3.0	2.5	2.5	3.0	2.0
Description of the availability of the recreational and cultural services supported by municipal facilities to residents	2.0	2.0	3.0	3.0	2.0

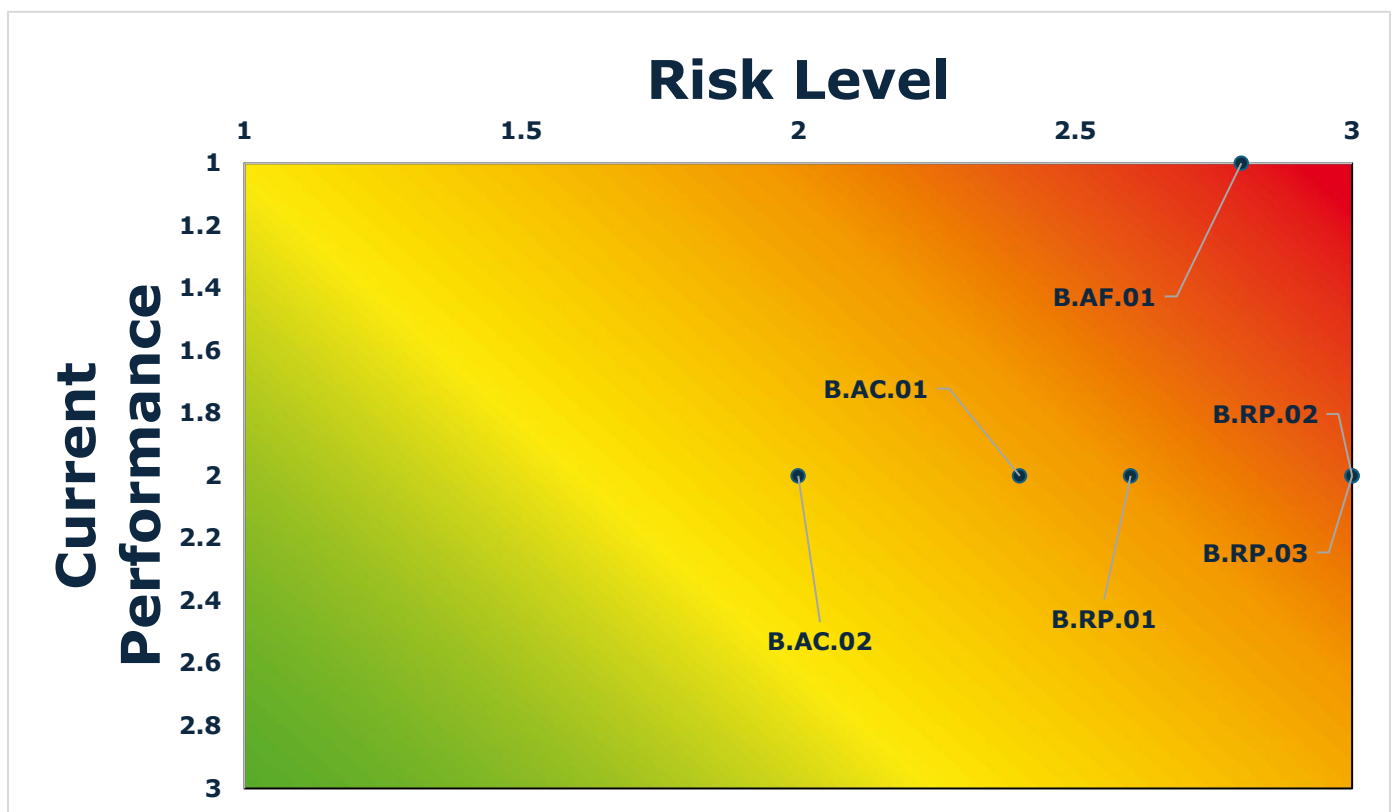
Facilities – Levels of Service – Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Annual sustainable capital reinvestment rate/required rate	3.0	2.0	3.0	3.0	3.0

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is illustrated below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for Facilities. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

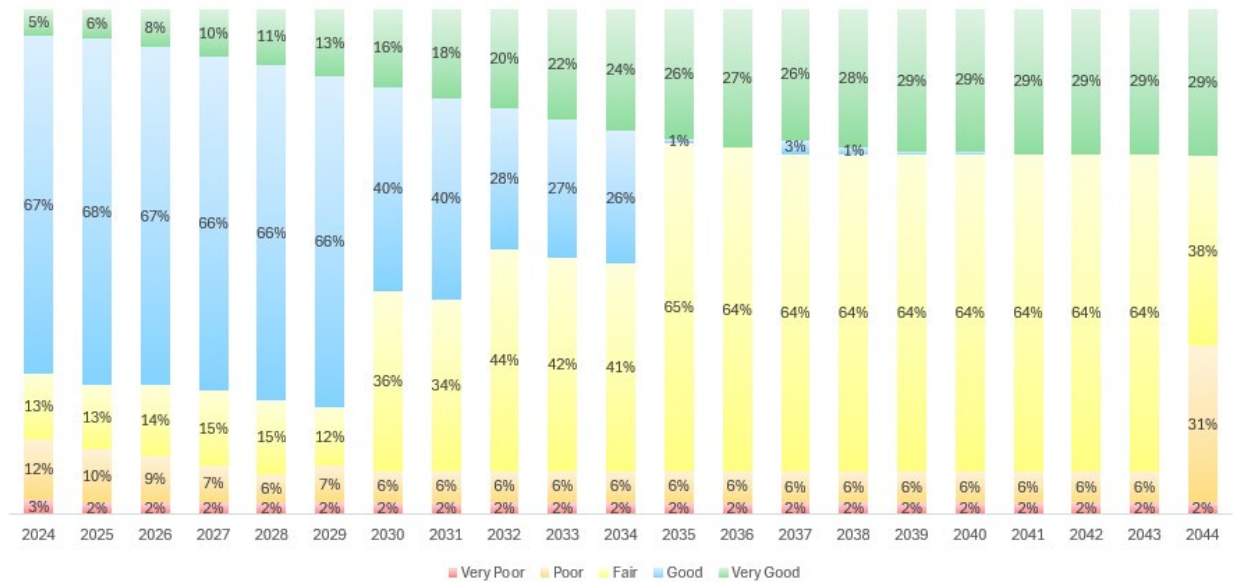
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

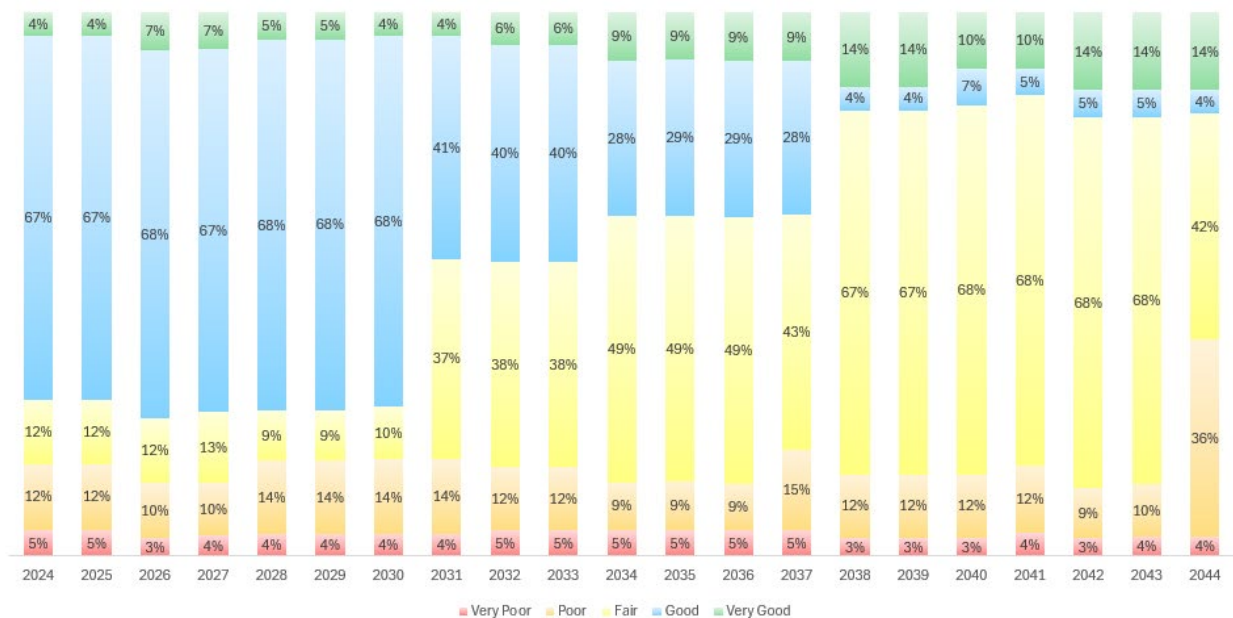
This scenario illustrates asset performance based on current capital and operating funding levels of \$4 million over a 20-year forecast and any funding that is not spent is carried forward to the next year. The Municipality should expect a decline in overall condition over the 20-year period but assets in Very Good condition increase from 5% to 29% and assets in Very Poor condition decreases slightly from 3% to 2%. The majority of assets move from Good to Fair condition over the 20-year period.



Scenario 2: Maintain Current Performance

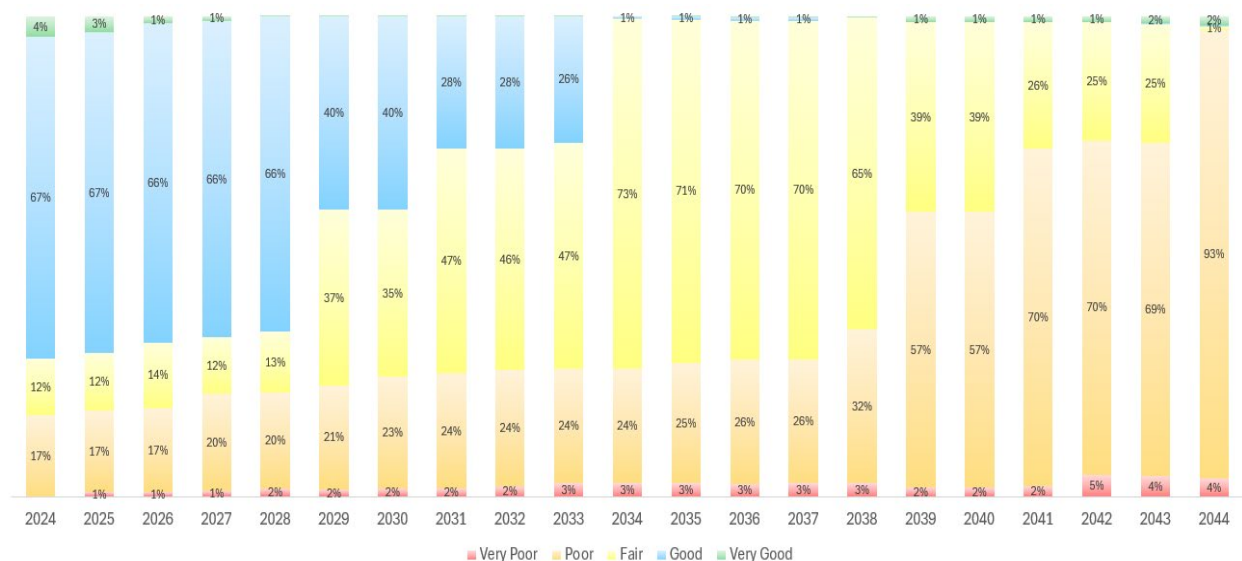
This scenario illustrates asset performance based on the constraint to maintain Facilities in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality \$2.2 million annually on average.

Assets in Very Good condition increase from 4% to 14% as assets in Very Poor condition decrease from 5% to 4% over the 20-year period. The majority of assets move from Good to Fair condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for Facilities over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Facilities category, the percentage of assets in Very Good condition decreases from 4% to 2% as assets in Very Poor Condition increase from 0% to 4%. This would cost the Municipality on average \$3.8 million annually. The majority of assets in the Facilities category move from Good condition (67%) to Poor condition (93%) over the 20-year period.



4.3.9 Recommendations

Replacement Costs

Most replacement costs used in this AMP for Buildings were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement Costs should be updated according to the best available information on the cost to replace the assets in today's value. This data gap has been flagged, and up-to-date BCA's have been requested by staff.

Lifecycle Management Strategies

Leamington should consider further refinement of facility assets into major components to optimize lifecycle strategy frameworks and provide better database structure to support all aspects of sound asset management.

Completion of internal building inspections on a regular cycle and documenting all deficiencies will allow the Municipality to develop a 5-10 year proactive facilities replacement / rehabilitation plan. Updating replacement and event costing through inspections on a cyclical basis is also recommended on a 5-year cycle.

Risk Management Strategies

Implement risk-based decision making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning.

Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

4.4 Machinery & Equipment

To maintain the high quality of public infrastructure and support the delivery of core services, Leamington owns and employs various types of machinery and equipment. This includes:

- Heavy construction equipment for the maintenance of the Municipal right of ways and infrastructure
- Landscaping equipment to maintain public parks, trails and outdoor sport and recreation facilities
- Machinery to maintain indoor recreational facilities
- Equipment for public use within recreation centers
- Administrative computers and other hardware
- Fire equipment to support the delivery of emergency services

The Machinery & Equipment's state of infrastructure is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$22,351,000	39.78% (Poor)	Annual Requirement:	\$1,694,000
		Funding Available:	\$1,084,000
		Annual Deficit:	\$610,000

4.1.1 Levels of Service Statement

The Municipality of Leamington is committed to providing reliable and efficient service through a portfolio of municipal machinery and equipment. The service statement focuses on reliability, performance, and affordability.

The Municipality believes that residents should be able to rely on Municipal machinery and equipment to provide high-quality services, including road maintenance, information technology, and operations. The Municipality ensures that machinery and equipment are regularly serviced and maintained to minimize the risk of breakdowns and delays.

The Municipality also focuses on performance to ensure that machinery and equipment are operating at peak efficiency.

Affordability is also a crucial consideration regarding machinery and equipment.

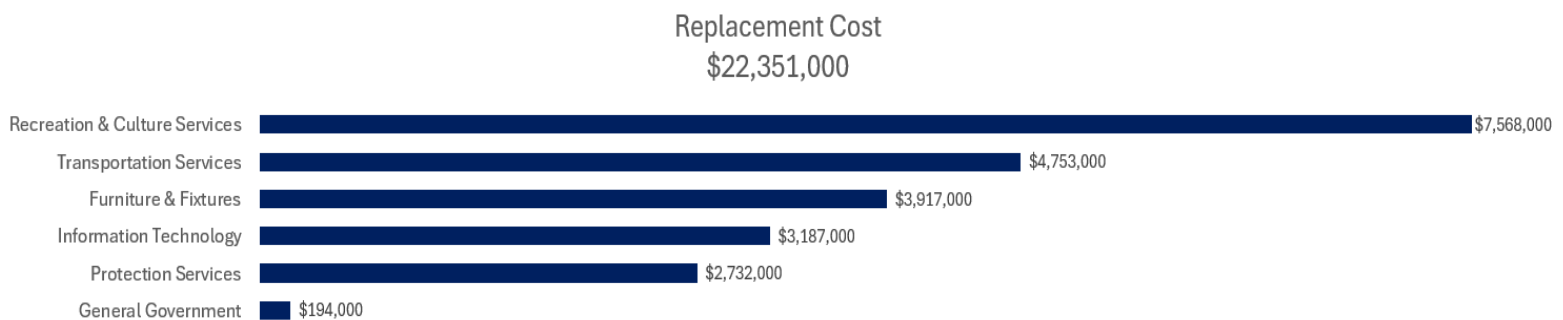
In summary, the Municipality of Leamington is committed to providing a high level of service through an extensive portfolio of municipal machinery and equipment. The Municipality ensures that machinery and equipment are reliable, efficient, and

accessible to provide the services our residents need. Reliability, performance, and affordability are key considerations in the machinery and equipment management strategy.

4.4.2 Asset Inventory & Costs

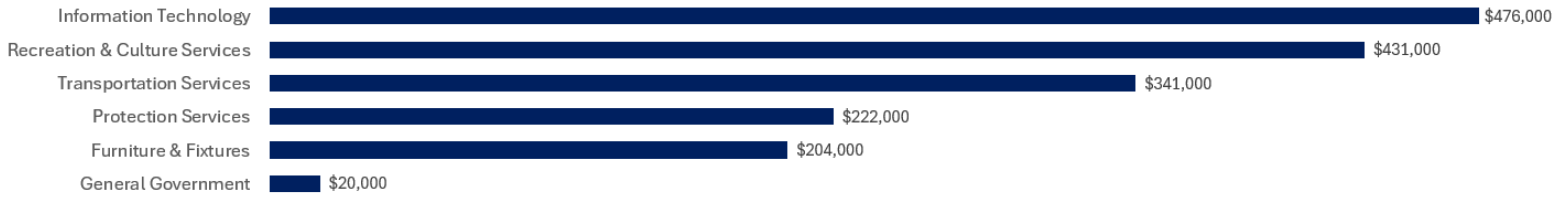
The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's Machinery & Equipment AMP category.

AMP Segment	Quantity	Replacement Cost	Annual Capital Requirement
Furniture & Fixtures	2,469	\$3,917,000	\$204,000
General Government	23	\$194,000	\$20,000
Information Technology	837	\$3,187,000	\$476,000
Protection Services	917	\$2,732,000	\$222,000
Recreation & Cultural Services	418	\$7,568,000	\$431,000
Transportation Services	774	\$4,753,000	\$341,000
Total	5,438	\$22,351,000	\$1,694,000



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

Average Annual Capital Requirements \$1,694,000



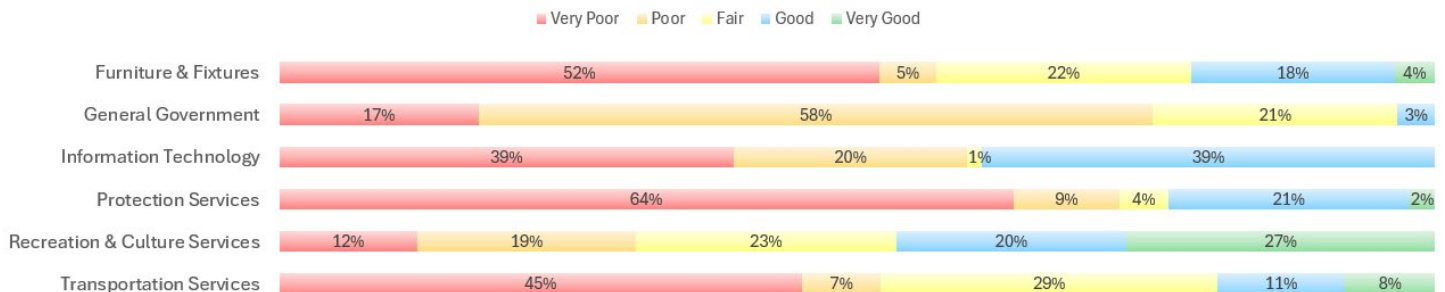
The average annual capital requirements are the amount the Municipality should be allocating annually to each Machinery & Equipment segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

4.4.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and the estimated useful life for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age	Average Condition
Furniture & Fixtures	5 – 50	12.67	31.29% (Poor)
General Government	5 – 25	7.42	32.59% (Poor)
Information Technology	3 – 25	7.17	38.04% (Poor)
Protection Services	5 – 20	16.50	23.14% (Poor)
Recreation & Culture Services	5 – 50	9.08	56.55% (Fair)
Transportation Services	5 – 40	12.17	31.39% (Poor)
Average		12.50	39.78% (Poor)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



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

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

Current Approach to Condition Assessments

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- The Municipality does not currently have a formal condition assessment program for its machinery and equipment. Instead, preventative maintenance work is and schedules are managed via a Computerized Maintenance Management program (CMMS).
- Most assets do not deviate from their defined EUL and are inspected internally near the end of their useful life. Components are replaced as needed and mechanics follow factory recommended maintenance activities and safety checks are performed before use.

The following table illustrates the rating criteria used to determine the current condition of Leamington's Machinery & Equipment and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

4.4.4 Lifecycle Management Strategy

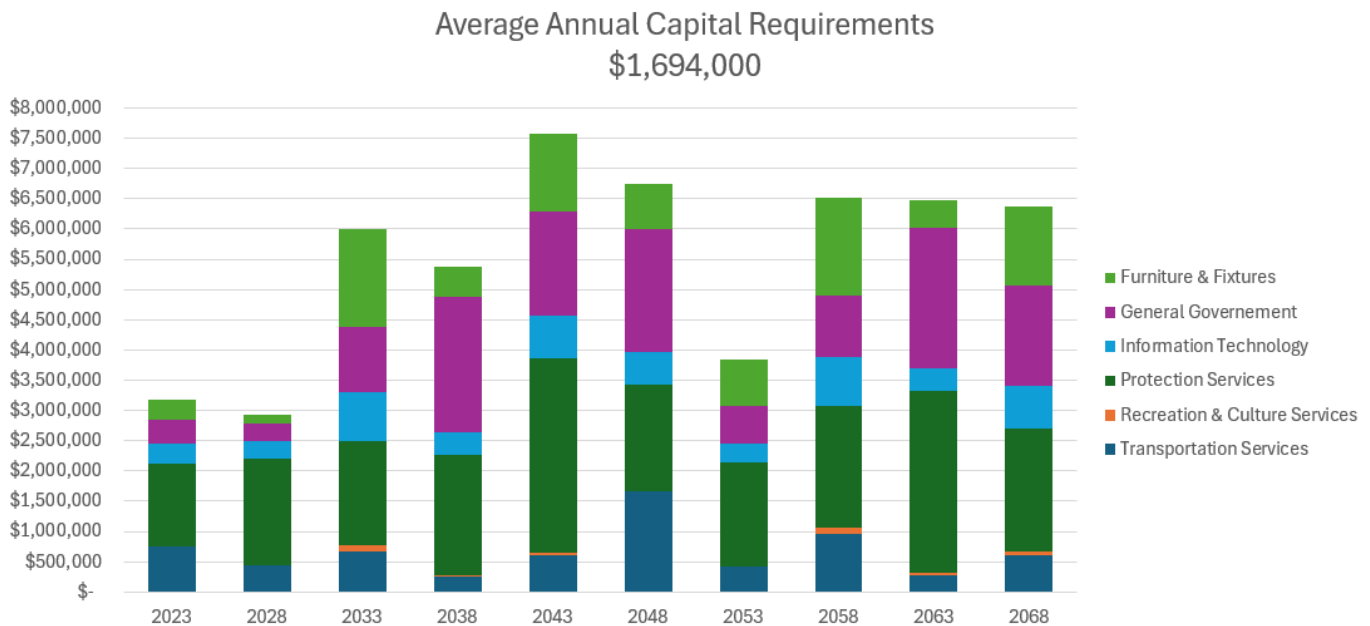
The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance / Rehabilitation	Most repair and maintenance of the Municipal machinery and equipment is done by two certified mechanics, part of the Public Works department.
	Preventative maintenance work and schedules are managed via a Computerized Maintenance Management program (CMMS).
	The CMMS is also used to track repairs, work completed, parts, etc.
	Some work is contracted out if the Municipality does not have the appropriate technology, tools and/or training to complete the repairs or for assets that are under warranty.
	Regular maintenance is completed on ice resurfacers by an external contractor, who identifies if maintenance or early replacement is required.
Replacement	Asset age is an indicator for replacement, however formal inspections are completed on equipment nearing the end of its useful life to determine if replacement or rehabilitation is required.
	Typically, assets are replaced based on their established end of useful life.

4.4.5 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that Leamington should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 40 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year intervals.

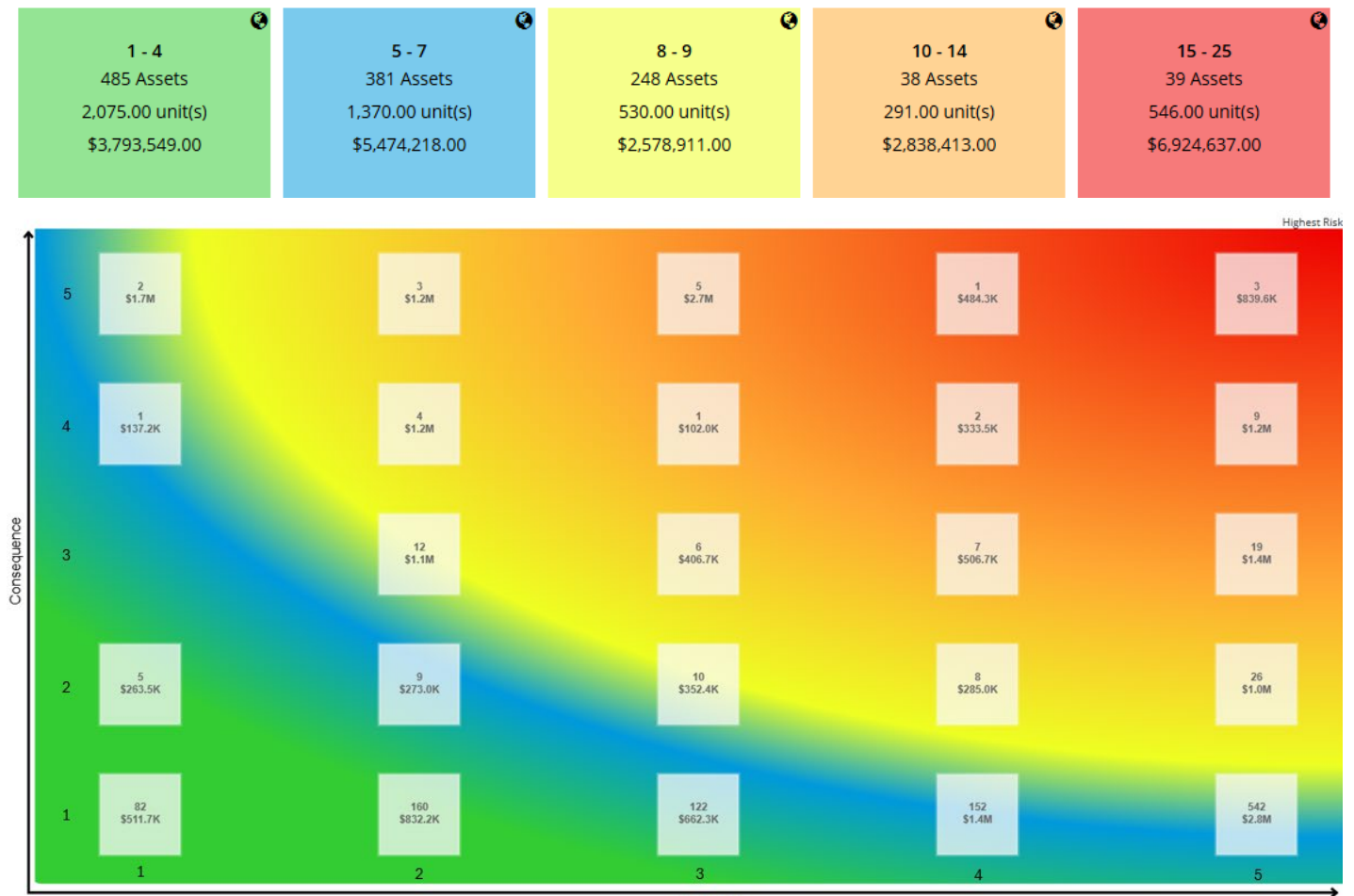


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain levels of service can be found in Appendix A.

4.4.7 Risk & Criticality

Risk Matrix

The following matrix illustrates the relationship between the probability and consequence of failure for all assets in the Machinery & Equipment AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for the criteria behind this risk rating matrix.



Risk to Current Asset Management Strategies

The following table illustrates key trends, challenges, and risks to service delivery that Leamington is currently facing:

Risk Type		Description
	Asset Data Confidence	There is a high level of confidence in the available data. Asset data confidence is not currently considered a risk.
	Lifecycle Management Strategies	The Municipal fleet is maintained by two mechanics, who utilize a work order system to identify when maintenance is required. IT equipment is also replaced based on a defined cycle. This is not considered a risk at this time.
	Organizational Cognizance / Capacity	More machinery and equipment have been purchased by the Municipality as more operators are hired. This will result in a need for more mechanics to maintain these assets.
	Infrastructure Design / Installation	Not considered a risk.
	Aging Infrastructure	Not considered a risk.
	Climate Change & Extreme Weather Events	Municipal Machinery & Equipment is presently well equipped to handle the weather experienced.
	Growth	Growth in the Municipality has resulted in a need for new roads and sidewalks, which require more equipment to maintain. More staff is also required due to growth with two more operators hired recently to operate the additional equipment and maintain additional Municipal assets.

Risk Type		Description
	Infrastructure Reinvestment	Infrastructure reinvestment is not considered a significant risk. Annual contributions are made to machinery and equipment reserve for lifecycle replacement.
	Other	Lead times for equipment and the availability of the equipment required is a large risk. The Municipality is being forced to use old equipment for longer until the new assets can arrive.

4.4.8 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Machinery & Equipment AMP category. These metrics include the technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Machinery & Equipment AMP category.

Machinery & Equipment – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
ME.RP.01	Description of lifecycle management strategies and assessment programs applied to municipal machinery and equipment assets.	Acceptable In a municipality where the lifecycle management strategies and assessment programs for municipal machinery and equipment assets are acceptable, there are formal policies or plans in place for machinery and equipment asset lifecycle management, and resources are allocated for this purpose. Machinery and equipment are regularly inspected and maintained to ensure their safe and efficient operation, and there may be a system in place for monitoring machinery and equipment utilization and performance. Additionally, there may be a program in place for rehabilitation or replacement of machinery and equipment based on predefined criteria.	N/A	The level of service provided is acceptable. However, there is no formal policy currently in place. Estimated useful lives are the main driver along with usage and the MMS system.	Citywide (2024)	N/A
ME.RP.02	Average condition for municipal machinery & equipment.	Needs Improvement Less than 60%	39.78%	Leamington can calculate this in Citywide.	Citywide (2024)	N/A
ME.RP.03	% of machinery & equipment in poor or very poor condition.	Needs Improvement More than 25%	33.68%	Leamington can calculate this in Citywide.	Citywide (2024)	N/A
ME.RP.04	Description of the initiatives employed to maintain the services provided by information technology assets	Acceptable In a municipality where the initiatives employed to maintain the services provided by IT assets are acceptable, there are dedicated IT staff or resources allocated to maintenance and support of IT systems. Regular updates and maintenance are performed on IT infrastructure, including hardware and software, to ensure optimal performance and minimize downtime. Policies and procedures are in place for IT asset management, including the tracking of software and hardware inventory.	N/A	The level of service provided is acceptable. There are some cyber security programs in place that utilize multiple software. Training mechanisms shall be formalized through policies and procedures. Staff are planning to develop an IT Service Delivery Master Plan.	Staff Input (2024)	N/A

Machinery & Equipment – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
ME.RP.01	Description of lifecycle management strategies and assessment programs applied to municipal machinery and equipment assets.	Recommendation	-CMMS -Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
ME.RP.02	Average condition for Municipal machinery & equipment.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
ME.RP.03	% of machinery & equipment in poor or very poor condition.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
ME.RP.04	Description of the initiatives employed to maintain the services provided by information technology assets	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Machinery & Equipment - Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
ME.AF.01	Annual sustainable capital reinvestment / required capital reinvestment rate.	Acceptable Between 60% - 80%	64%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Machinery & Equipment – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
ME.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate	Recommendation	-Citywide AM -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Machinery & Equipment – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Description of lifecycle management strategies and assessment programs applied to municipal machinery and equipment assets	2.5	2.0	2.8	2.3	2.0
Annual sustainable capital reinvestment rate/required rate	2.5	1.8	2.5	2.8	1.8
description of the initiatives employed to maintain the services provided by information technology assets	2.5	1.8	2.8	2.5	2.0

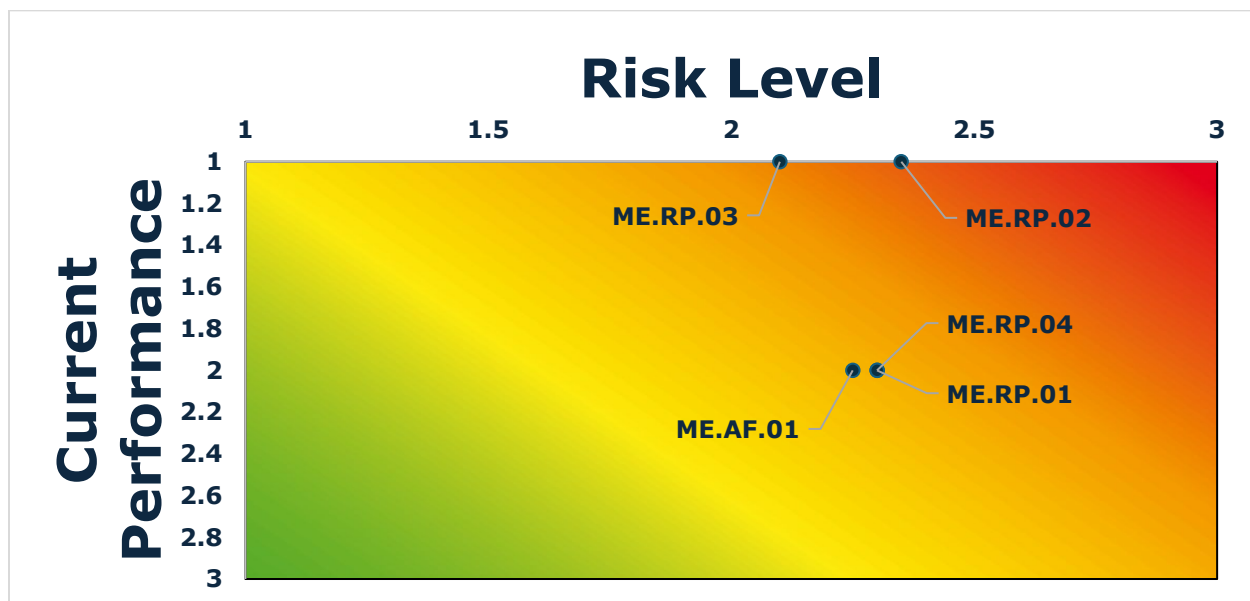
Machinery & Equipment – Levels of Service – Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of machinery and equipment in poor or very poor condition	2.3	1.5	2.3	2.5	2.0
Average condition for municipal machinery and equipment	2.5	2.0	2.5	2.5	2.3

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is illustrated below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for Machinery & Equipment. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

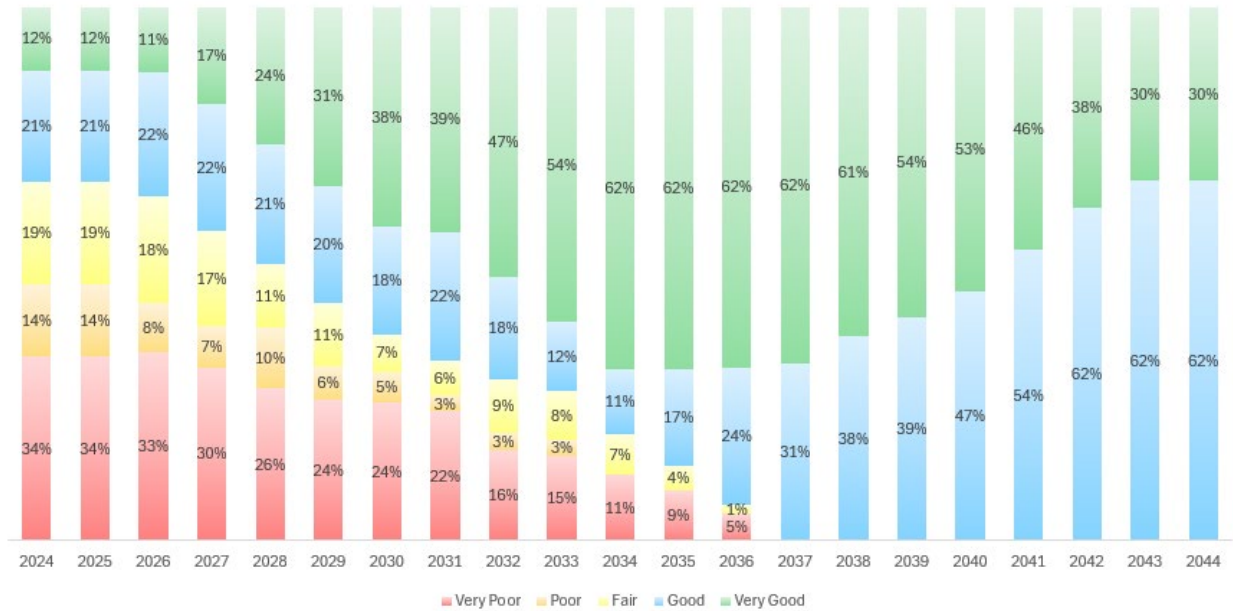
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

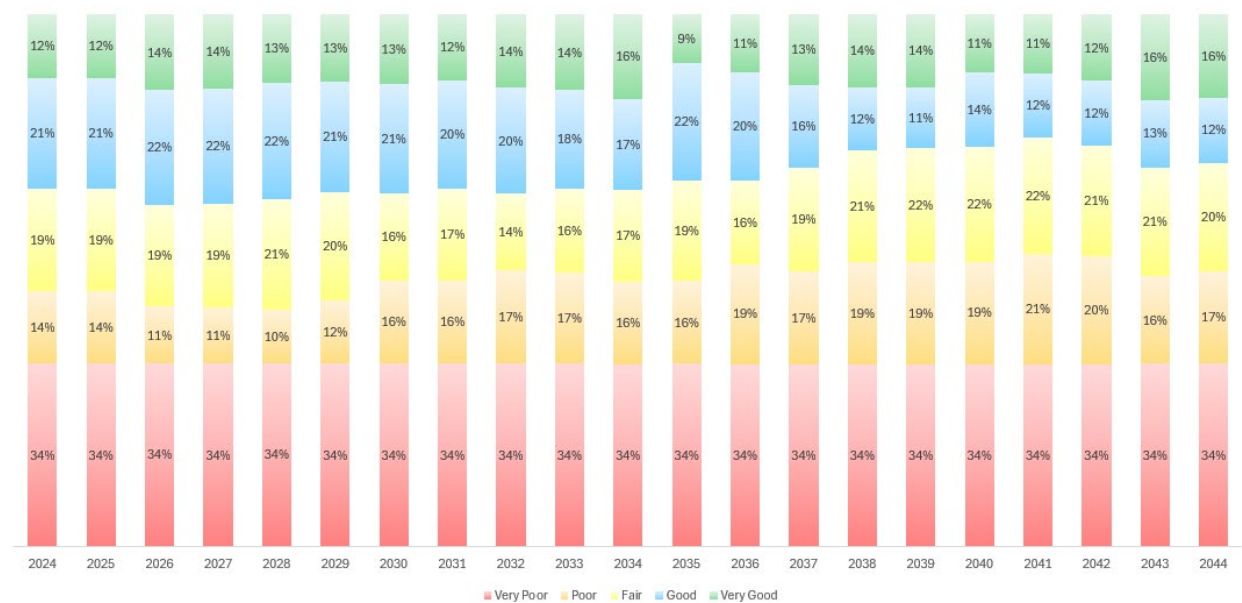
This scenario illustrates asset performance based on current capital and operating funding levels of \$2.4 million over a 20-year forecast. And any funding not spent is carried forward to the next year. The Municipality should expect an increase in condition over the 20-year period as assets in Very Good condition increase from 12% to 30% and assets in Very Poor condition decrease from 34% to 0% over the 20-year period.



Scenario 2: Maintain Current Performance

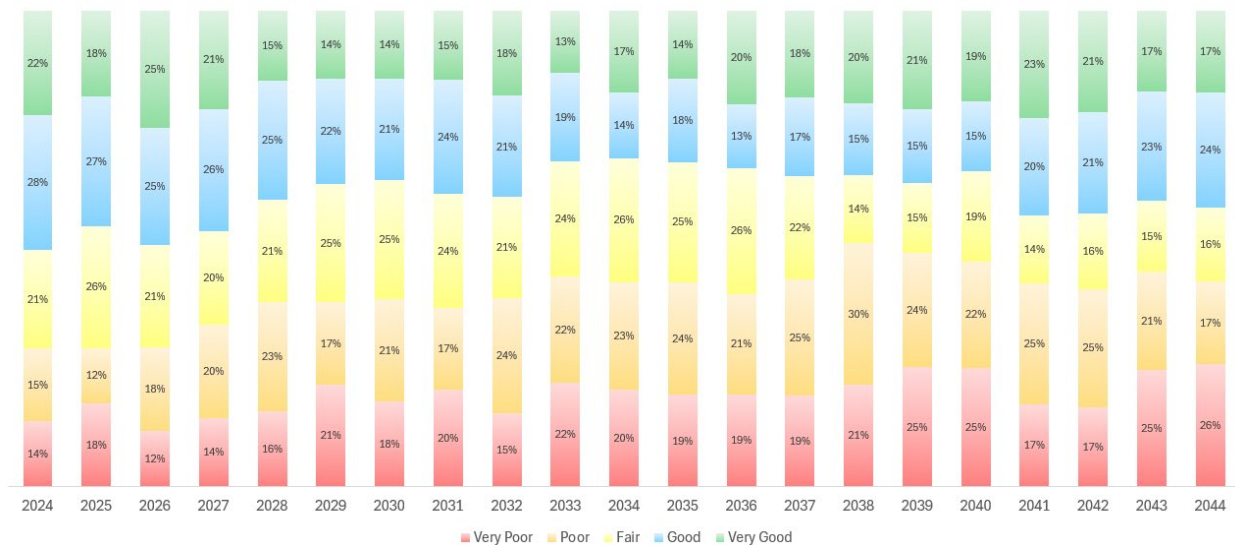
This scenario illustrates asset performance based on the constraint to maintain Machinery & Equipment in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality \$480K on average annually.

Assets in Very Good condition decrease from 12% to 16% as assets in Very Poor condition remain constant at 34% over the 20-year period. The majority of assets are in Poor condition.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for Machinery & Equipment over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Machinery & Equipment category, the percentage of assets in Very Good condition decreases from 22% to 17% as assets in Very Poor Condition increase from 14% to 26%. This would cost the Municipality on average \$1.1 million annually. The majority of assets in the Machinery & Equipment category move from Very Good and Good condition (50%) to a relatively even distribution across Very Good to Very Poor over the 20-year period.



4.4.9 Recommendations

Replacement Cost

Most of the replacement costs used in this AMP for Machinery & Equipment were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated on a cyclical basis (recommended cycle is 5 years). Acquisition costs have gone up considerably since the pandemic, which contributes to the constraints on available funding.

Lifecycle Management Strategies

Preventative maintenance work and schedules are managed via a CMMS. This CMMS is also used to track repairs, work completed, parts, etc. Leamington should continue to identify assets that are higher value and high risk and assess condition as they approach the end of their useful lives. If assets have surpassed their useful life, an assessment is completed and determined if the asset needs to be replaced or rehabilitated. Adjusting the service life and/or condition ratings according to actual asset performance.

Risk Management Strategies

More machinery and equipment have been purchased by the Municipality as more operators are hired. This will result in a need for more mechanics to maintain the assets. Growth in the Municipality has resulted in a need for new roads and sidewalks, which require more equipment to maintain. Lead times for equipment is a large risk and the availability of the equipment required. The Municipality is being forced to use old equipment for longer until the new assets arrive.

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning.

Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

4.5 Fleet

Fleet allows staff to efficiently deliver Municipal services and personnel. Municipal vehicles are used to support several service areas, and include:

- Various sized dump trucks and pick-up trucks to support the maintenance of the transportation network and address service requests for parks, recreation, by-law services, building services, etc.
- Fire rescue vehicles to provide emergency services.
- Transportation vehicles to support local transit systems.

The Fleet's state of infrastructure is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$15,390,000	34.26% (Poor)	Annual Requirement:	\$1,539,000
		Funding Available:	\$919,000
		Annual Deficit:	\$620,000

4.5.1 Levels of Service Statement

The Municipality of Leamington is committed to providing reliable, safe, and efficient service through the fleet of municipal vehicles. The service statement focuses on reliability, performance, and affordability.

The Municipality believes that residents should be able to rely on municipal vehicles to provide reliable transportation for various services, including emergency/protective services, road maintenance, and public transit. The Municipality ensures that vehicles are regularly serviced and maintained to minimize the risk of breakdowns and delays.

The Municipality also focuses on performance to ensure that vehicles are operating at peak efficiency.

Affordability is also a crucial consideration regarding the Municipal fleet.

In summary, the Municipality of Leamington is committed to providing a high level of service through the fleet of municipal vehicles. The Municipality ensures that vehicles are reliable, safe, and efficient to provide the services residents need. Performance and affordability are key considerations in the fleet management strategy.

4.5.2 Asset Inventory & Costs

The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in the Municipality's Fleet.

AMP Segment	Quantity	Replacement Cost	Annual Capital Requirement
Planning & Development Services	3	\$180,000	\$18,000
Protection Services	20	\$8,182,000	\$818,000
Recreation & Culture Services	2	\$240,000	\$24,000
Transportation Services	41	\$6,788,000	\$679,000
Total	66	\$15,390,000	\$1,539,000

Replacement Cost
\$15,390,000



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

Average Annual Capital Requirements
\$1,539,000



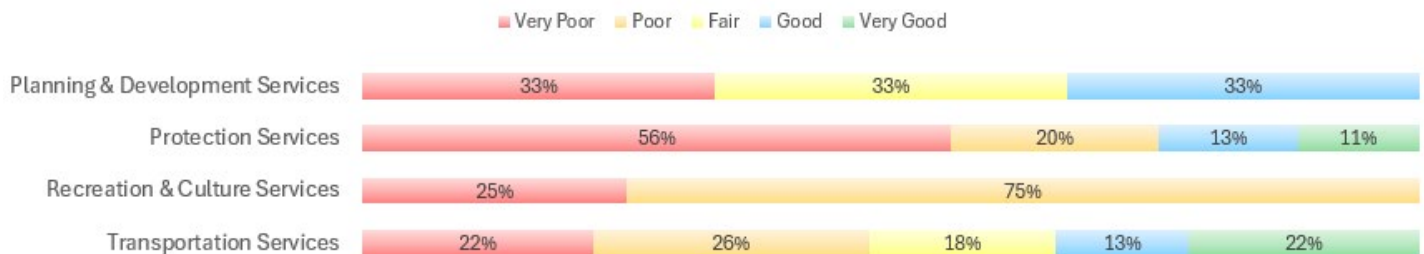
The average annual capital requirements are the amount the Municipality should be allocating annually to each Fleet segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

4.5.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and the estimated useful life for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
Planning & Development Services	7	5.50	38.10% (Poor)
Protection Services	7 – 20	9.08	28.95% (Poor)
Recreation & Culture Services	10	10	12.50% (Very Poor)
Transportation Services	7 – 25	8.33	37.61% (Poor)
Average		8.50	34.26% (Poor)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



To ensure that Leamington's Fleet continues to provide an acceptable level of service, the Municipality 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 are required to increase the overall condition of the Fleet.

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

Current Approach to Condition Assessments

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- The Municipality does not currently have a formal condition assessment program for its fleet. Instead, preventative maintenance work and schedules are managed via a Computerized Maintenance Management program (CMMS).
- Most assets do not deviate from their defined EUL and are inspected internally near the end of their useful life. Components are replaced as needed and mechanics follow factory recommended maintenance activities (oil change, brakes, wipers, etc.) and safety checks are performed carried out before use.

The following table illustrates the rating criteria used to determine the current condition of Leamington's Fleet and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

4.5.4 Lifecycle Management Strategy

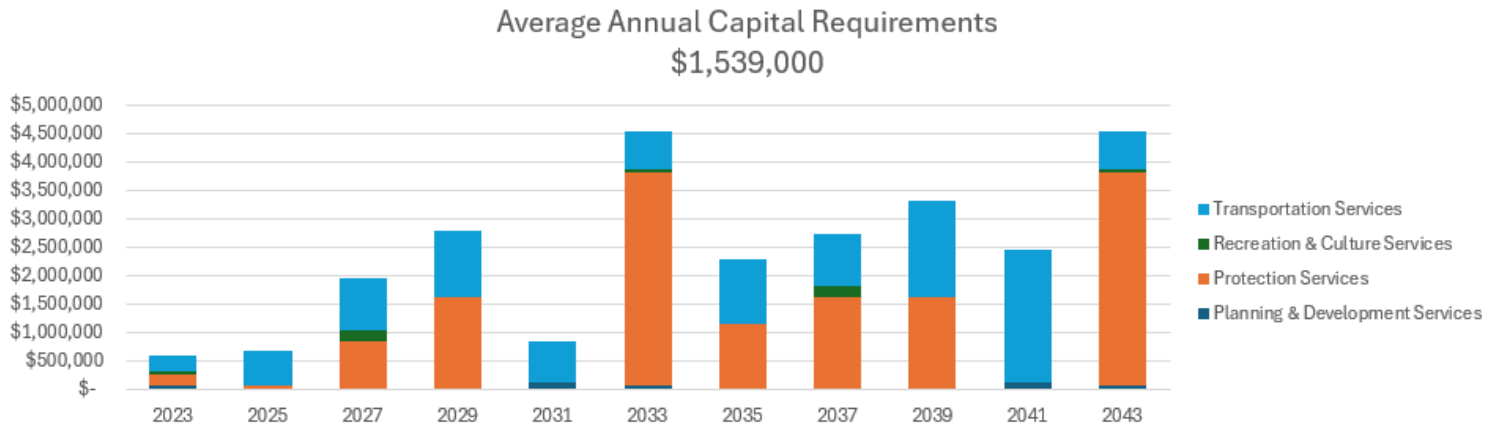
The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance / Rehabilitation	Most repair and maintenance of the Municipal Fleet is done by two certified mechanics, part of the Public Works department.
	Preventative Maintenance work and schedules are managed via a Computerized Maintenance Management program (CMMS).
	The CMMS is also used to track repairs, work completed, parts, etc.
	Some work is contracted out if the Municipality does not have the appropriate technology, tools and/or training to complete the repairs or for warranty work.
Replacement	Asset age is an indicator for replacement, however formal inspections are completed on vehicles nearing the end of its useful life to determine if replacement or rehabilitation is required.
	Typically, assets are replaced based on their estimated useful life.

4.5.5 Forecasted Capital Requirements

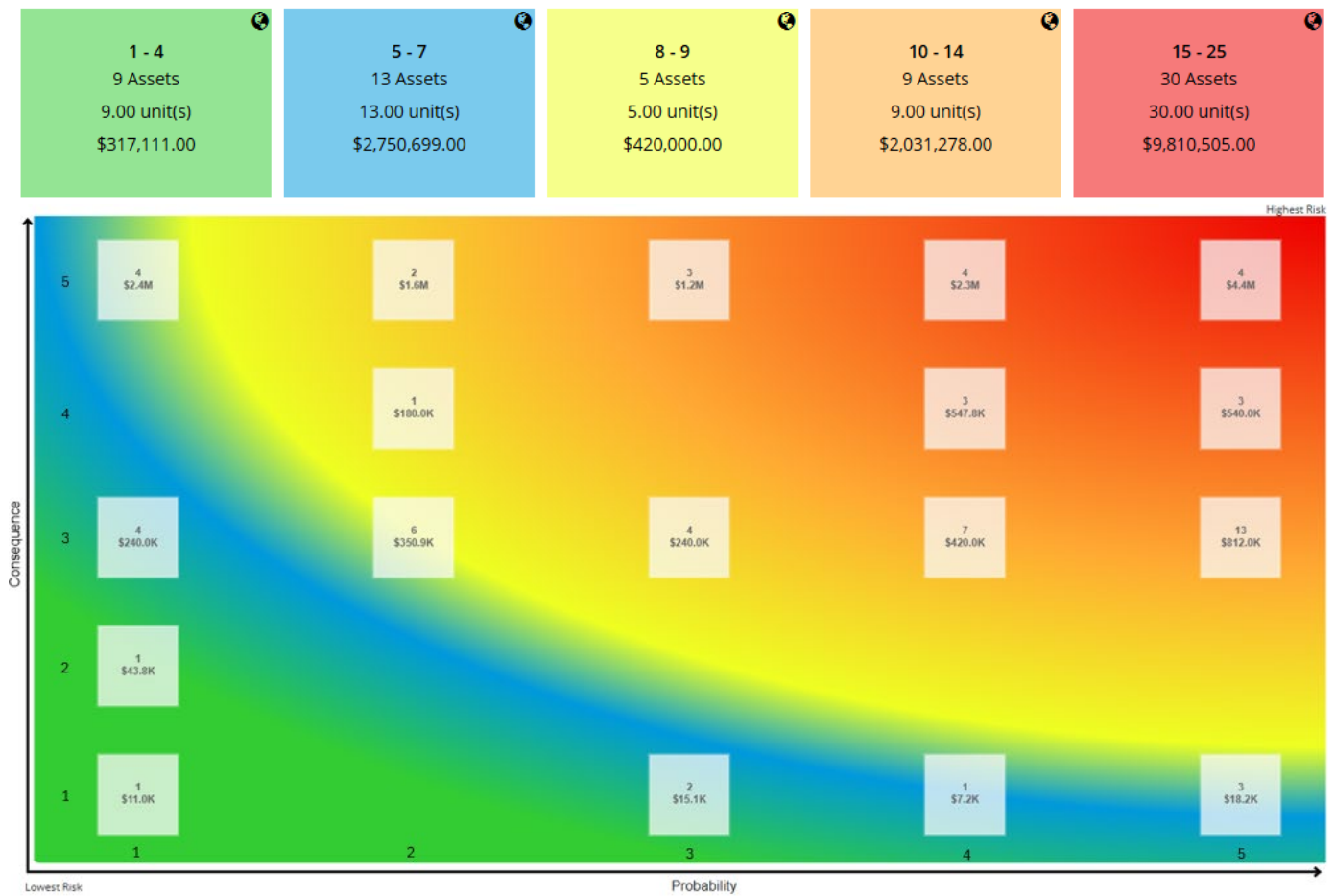
The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that Leamington should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 25 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 2-year increments.



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

4.5.6 Risk & Criticality

The following matrix illustrates the relationship between the probability and consequence of failure for all assets in the Fleet AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for the criteria behind this risk rating matrix.



Risk to Current Asset Management Strategies

The following table illustrates key trends, challenges, and risks to service delivery that Leamington is currently facing:

Risk Type		Description
	Asset Data Confidence	There is a high level of confidence in the available data. Asset data confidence is not currently considered a risk.
	Lifecycle Management Strategies	The Municipal fleet is maintained by two mechanics, who utilize a work order system to identify when maintenance is required. This is not considered a risk at this time.
	Organizational Cognizance / Capacity	More vehicles are being purchased by the Municipality as more operators are hired. This will result in a need for more mechanics to maintain the vehicles.
	Infrastructure Design / Installation	Not considered a risk at this time.
	Aging Infrastructure	Aging Infrastructure is not currently a risk.
	Climate Change & Extreme Weather Events	The Municipal fleet is well equipped to handle the weather experienced.
	Growth	Growth in the Municipality has resulted in a need for new roads and sidewalks, which require more equipment and vehicles to maintain. More staff is also required due to growth, with two more operators hired recently to operate the additional equipment and vehicles.
	Infrastructure Reinvestment	Infrastructure re-investment is not considered a significant risk. Annual contributions are made to the Fleet and Equipment reserve for equipment and fleet replacement.
	Other	Advancing technology and computers in the fleet are causing a risk as mechanics will require specialized training and/or very costly diagnostic equipment to assess certain vehicles. The Municipality will have to consider which service and maintenance to keep in-house versus contracting out.

4.5.7 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Fleet AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Fleet AMP category.

Fleet – Reliability and Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
V.RP.01	Description of lifecycle management strategies and assessment programs applied to municipal vehicles.	Acceptable In a Municipality where lifecycle management strategies and assessment programs are acceptable, there is a formal plan or policy in place that outlines the maintenance and management of municipal Vehicles throughout their lifecycle. Building systems are regularly assessed for performance and condition, and maintenance is carried out on a regular schedule. Additionally, there may be a system in place for tracking and analyzing data on building performance, which can inform decision-making around maintenance and upgrades.	N/A	The level of service provided is acceptable. However, there is no formal policy currently in place. Estimated useful lives are the main driver along with KMs and the MMS system.	Staff Input (2024)	N/A

Fleet – Reliability and Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
V.RP.01	Description of lifecycle management strategies and assessment programs applied to municipal vehicles.	Recommendation	-CMMS -Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Fleet AMP category.

Fleet – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
V.RP.02	Average condition for municipal vehicles.	Needs Improvement Less than 60%	34.26%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A
V.RP.03	% of vehicles in poor or very poor condition.	Needs Improvement More than 25%	37.43%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A

Fleet – Reliability and Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
V.RP.02	Average condition for municipal vehicles.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
V.RP.03	% of vehicles in poor or very poor condition.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Fleet – Safety & Regulatory Compliance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
V.SR.01	Description of the municipal vehicle management and safety program	Acceptable In a municipality where the vehicle management and safety program are acceptable, there is a formal policy or plan in place that addresses vehicle safety and maintenance. Drivers are trained and provided with resources to operate vehicles safely, and vehicles are regularly inspected and maintained to ensure their safe and efficient operation. Additionally, there may be a system in place for reporting and investigating vehicle-related incidents, with appropriate corrective actions taken as needed.	N/A	The level of service provided is acceptable. The MMS generates flags based on maintenance and vehicle metrics and automatically creates work orders to mechanics to meet safety requirements and guidelines. There are also some robust training mechanisms in place.	Staff Input (2024)	N/A

Fleet – Safety & Regulatory Compliance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
V.RP.02	Description of the municipal vehicle management and safety program	Recommendation	-CMMS -Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Fleet – Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
V.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate.	Needs Improvement Less than 70%	60%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Fleet – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
V.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Fleet – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Annual sustainable capital reinvestment rate/required rate.	2.7	1.7	2.7	2.3	2.3
Description of lifecycle management strategies and assessment programs applied to municipal vehicles.	2.3	2.0	2.7	2.7	2.3
Description of the municipal vehicle management and safety program.	2.0	1.3	2.3	2.3	2.0

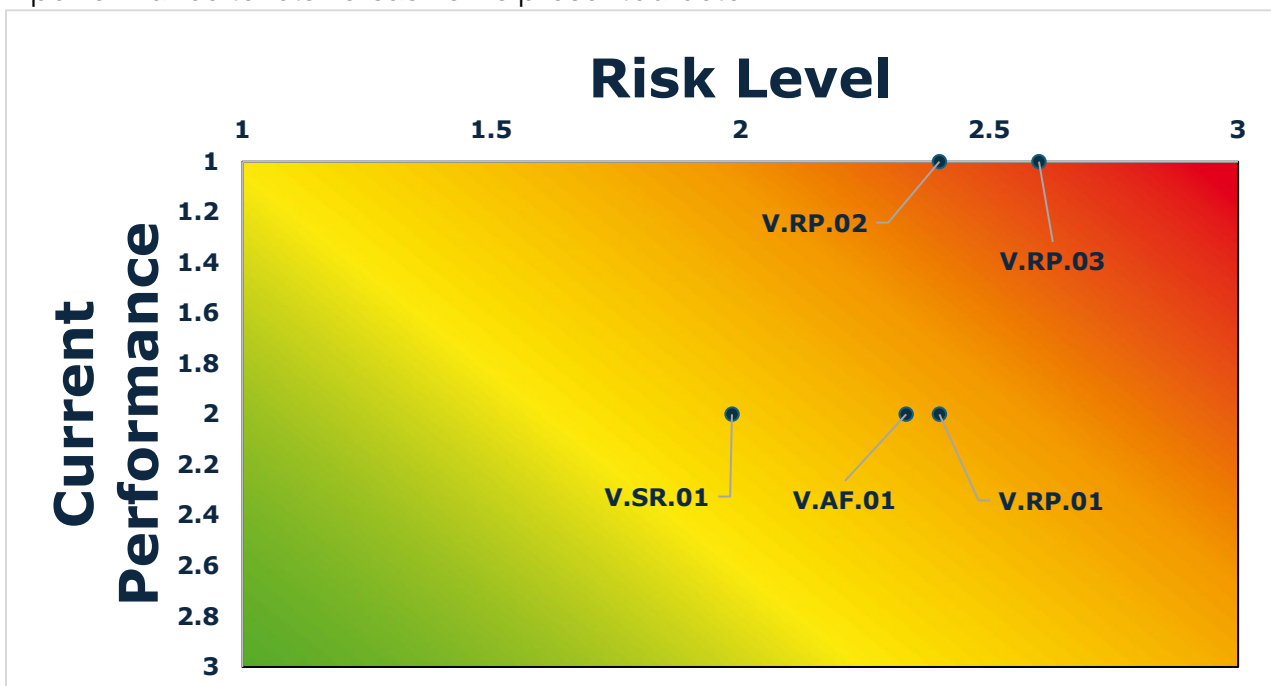
Fleet – Levels of Service – Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of vehicles in poor or very poor condition.	3.0	2.0	3.0	2.7	2.3
Average condition for municipal vehicles.	2.7	2.0	2.7	2.3	2.3

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is presented below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for Fleet. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

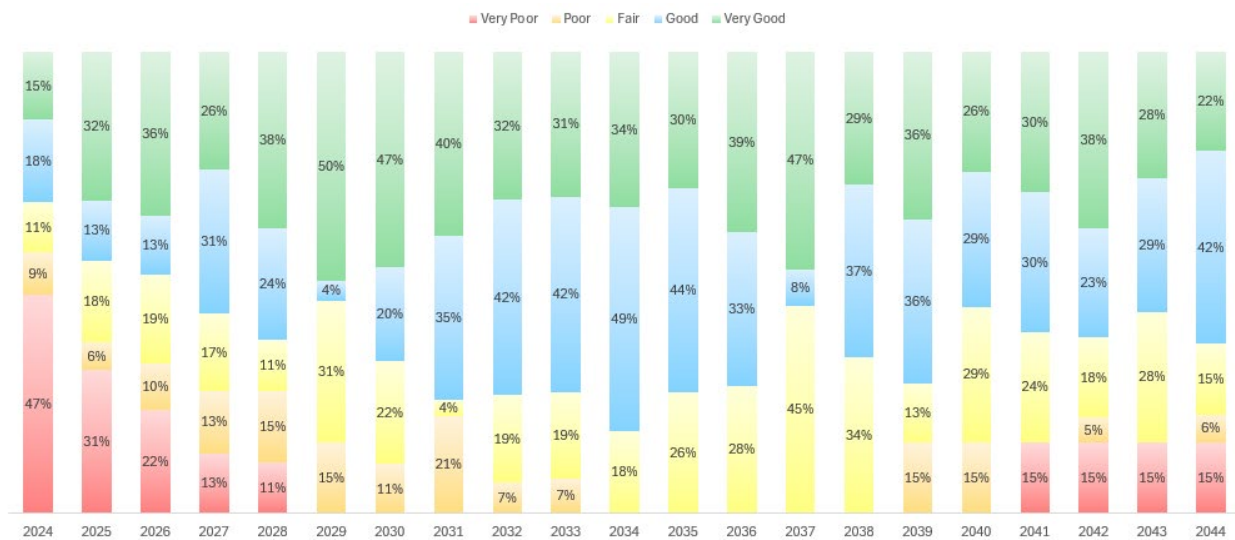
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

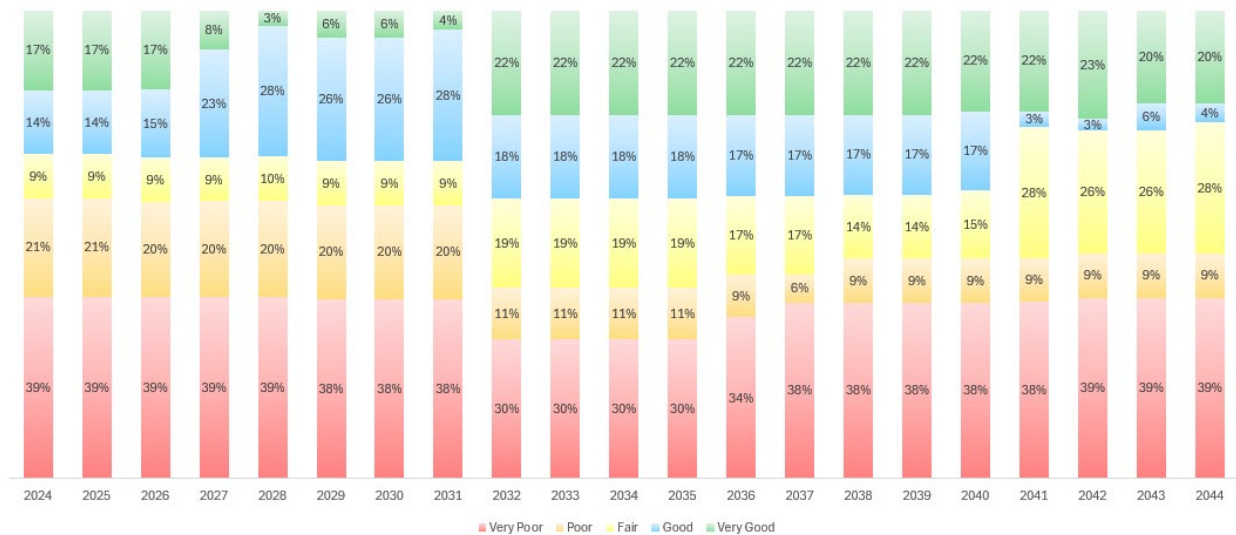
This scenario illustrates asset performance based on current capital and operating funding levels of \$2.2 million over a 20-year forecast and any funding not spent is carried forward into the next year. There is also an additional constraint for the Fleet category due to the major expense associated with the Fire Departments Fleet. There is a reserve in place to account for the purchase of new fire truck in 2026 for \$2.5 million. The Municipality should expect an increase in condition over the 20-year period as assets in Very Good condition increase from 15% to 22% and assets in Very Poor condition decrease from 47% to 15% over the 20-year period. The majority of assets move from Very Poor and Poor to Fair or better condition over the 20-year period.



Scenario 2: Maintain Current Performance

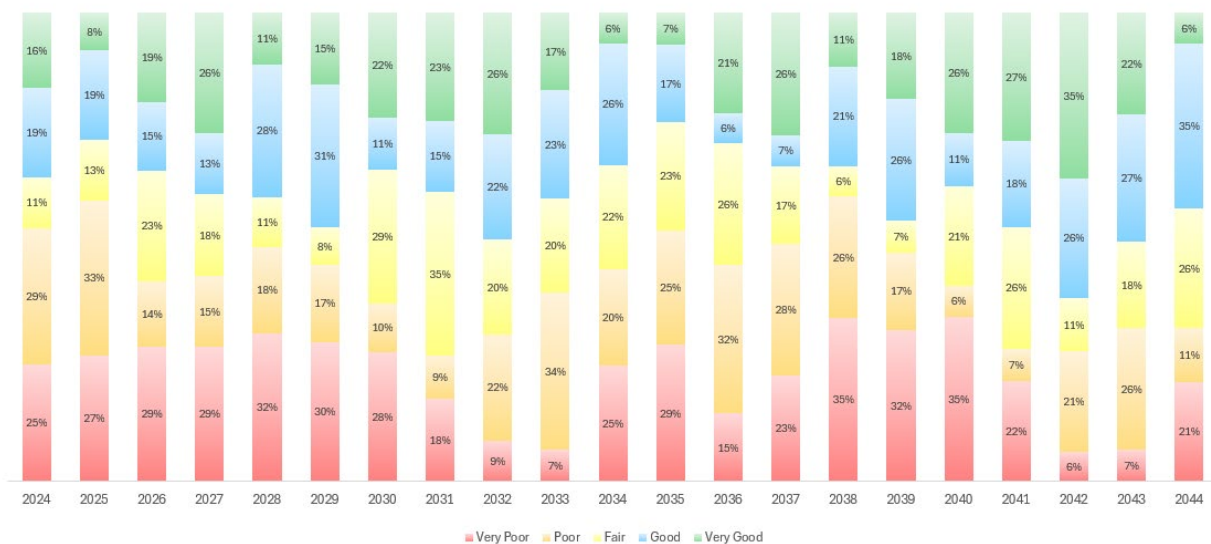
This scenario illustrates asset performance based on the constraint to maintain Fleet in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and will cost the Municipality an average of \$1.1 million annually.

Assets in Very Good condition increase from 17% to 20% as assets in Very Poor condition remain at 39% from start to finish of the 20-year period. The majority of assets move from Poor and Very Poor to Fair or better condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for Fleet over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Fleet category, the percentage of assets in Very Good condition decreases from 16% to 6% as assets in Very Poor Condition decrease from 25% to 21%. This would cost the Municipality on average \$1 million annually. The majority of assets in the Fleet category move from Very Poor and Poor condition (54%) to Good and Fair condition (61%) over the 20-year period.



4.5.8 Recommendations

Lifecycle Management Strategies

There is not currently a formalized strategy for condition assessment of Municipal Fleet. Most of the repair and maintenance of the Municipal Fleet is completed by two certified mechanics, part of the Public Works department. These Preventative Maintenance activities and schedules are managed via a Computerized Maintenance Management program (CMMS). The CMMS is also used to track repairs, work completed, parts, etc. These schedules follow the factory recommended maintenance and rehabilitation activities.

Leamington should review assets that have surpassed their EUL to determine if immediate replacement is required or whether these assets are expected to remain in service. The service lives of all assets should be adjusted if necessary.

Risk Management Strategy

More vehicles are being purchased by the Municipality as more operators are hired. This will result in a need for more mechanics to maintain the Municipal fleet. Advancing technology and computers in the fleet are causing a risk as mechanics will require specialized training and/or very costly diagnostic equipment to assess certain vehicles. The Municipality will have to consider which service and maintenance to keep in-house versus contracting out.

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

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning. Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

4.6 Land Improvements

The Municipality of Leamington owns a number of assets that are considered Land Improvements. This category includes:

- Parking lots for Municipal facilities
- Fencing and gates
- Trailways, playgrounds, miscellaneous landscaping and other assets

Leamington's Land Improvements state of infrastructure is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$32,909,000	55.86% (Fair)	Annual Requirement:	\$886,000
		Funding Available:	\$557,000
		Annual Deficit:	\$329,000

4.6.1 Levels of Service Statement

The Municipality of Leamington is committed to providing high-quality services through its municipal land improvements. Its service statement focuses on accessibility, reliability, performance, and affordability.

The Municipality believes that all members of the community should have access to well-maintained and accessible public spaces. Therefore, it invests in municipal land improvements, including parks, recreational facilities, and public spaces. The Municipality ensures that these spaces are accessible to everyone, including people with disabilities.

Reliability is also a key consideration in the Municipality's land improvements. The Municipality ensures that its facilities and public spaces are well-maintained and free of hazards to minimize the risk of accidents and injuries. Regular inspections and maintenance are conducted to ensure that facilities are safe for public use.

The Municipality also focuses on performance to ensure that its land improvements are meeting the needs of residents. The Municipality monitors the usage of facilities and public spaces to identify areas where performance can be improved, and usage can be increased.

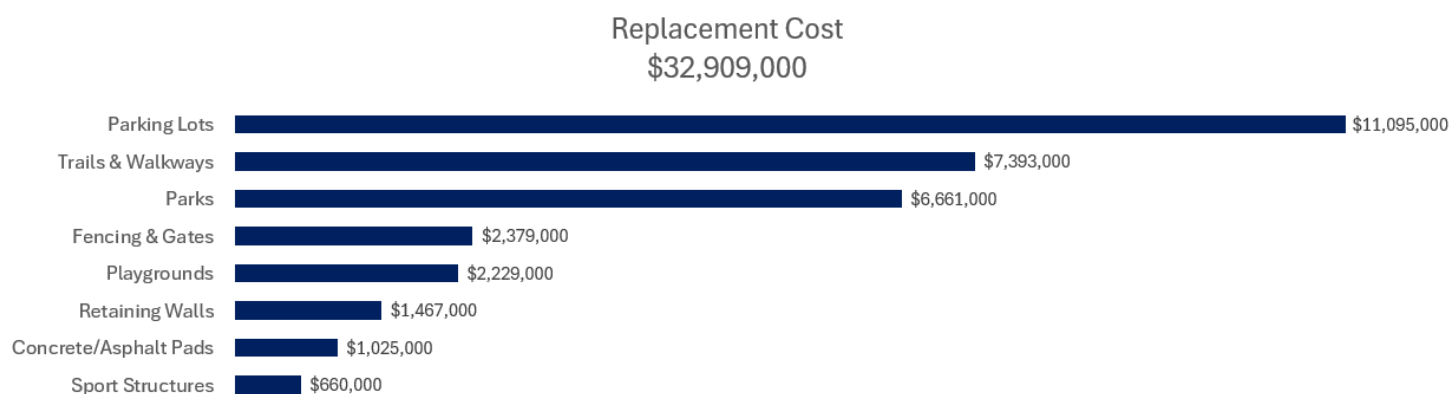
Affordability is also a crucial consideration in the Municipality's land improvements.

In summary, the Municipality of Leamington is committed to providing a high level of service through municipal land improvements. The Municipality ensures that facilities and public spaces are accessible, reliable, and perform well to meet the needs of residents. Accessibility, reliability, performance, and affordability are key considerations in the land improvement management strategy.

4.6.2 Asset Inventory & Costs

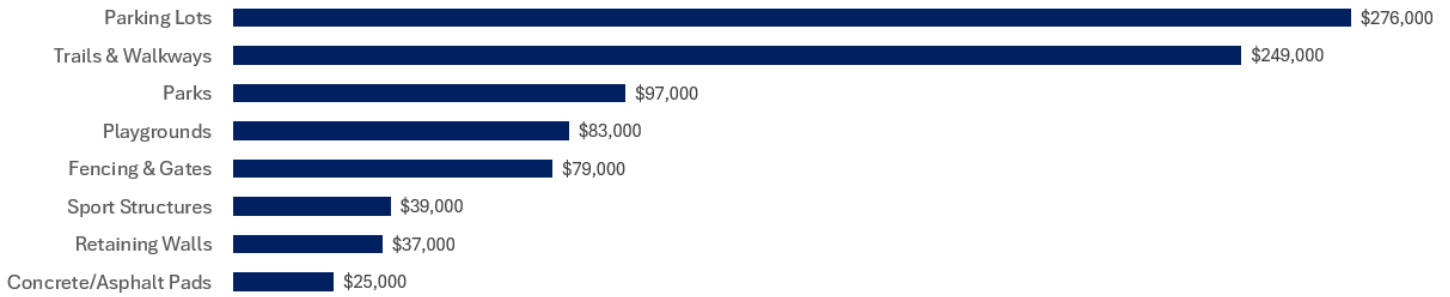
The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's Lan Improvements category.

AMP Segment	Quantity	Replacement Cost	Annual Capital Requirement
Concrete / asphalt Pads	20	\$1,025,000	\$25,000
Fencing & Gates	46	\$2,379,000	\$79,000
Parking Lots	80,891 m ²	\$11,095,000	\$276,000
Park Improvements	48	\$6,661,000	\$97,000
Playgrounds	65	\$2,229,000	\$83,000
Retaining Walls	12	\$1,467,000	\$37,000
Sport Structures	46	\$660,000	\$39,000
Trails & Walkways	55	\$7,393,000	\$249,000
Total	292 - 80,891 m²	\$32,909,000	\$886,000



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

Average Annual Capital Requirements \$886,000



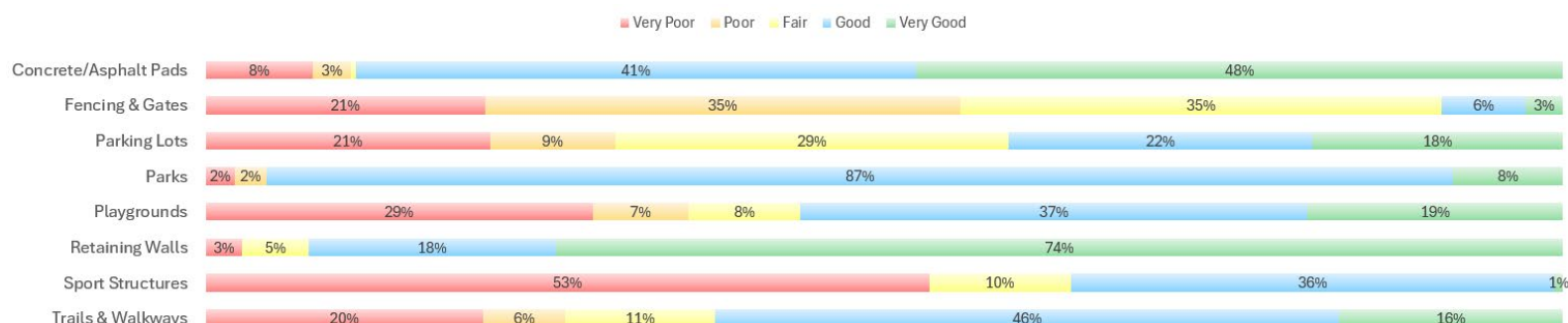
The average annual capital requirements are the amount the Municipality should be allocating annually to each Land Improvements segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

4.6.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and the EUL for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
Concrete / Asphalt Pads	40 – 50	10.67	73.24% (Good)
Fencing & Gates	15 – 30	21.67	35.10% (Poor)
Parking Lots	30 – 60	17.25	49.98% (Fair)
Park Improvements	5 – 100	11.92	69.38% (Good)
Playgrounds	5 – 40	13.17	49.78% (Fair)
Retaining Walls	20 – 50	9.50	81.77% (Very Good)
Sport Structures	5 – 60	18.17	29.61% (Poor)
Trails & Walkways	10 – 45	14.67	55.62% (Fair)
Average		15.42	55.86% (Fair)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



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

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 Assessments

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- The Public Works department is responsible for the maintenance of municipal lands, including parking lots, parks, sports fields, trails, and general landscaping.
- No formal condition assessment program currently in place for land improvement assets but regular visual and informal assessments are completed.

The following table illustrates the rating criteria used to determine the current condition of Leamington's Land Improvements and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

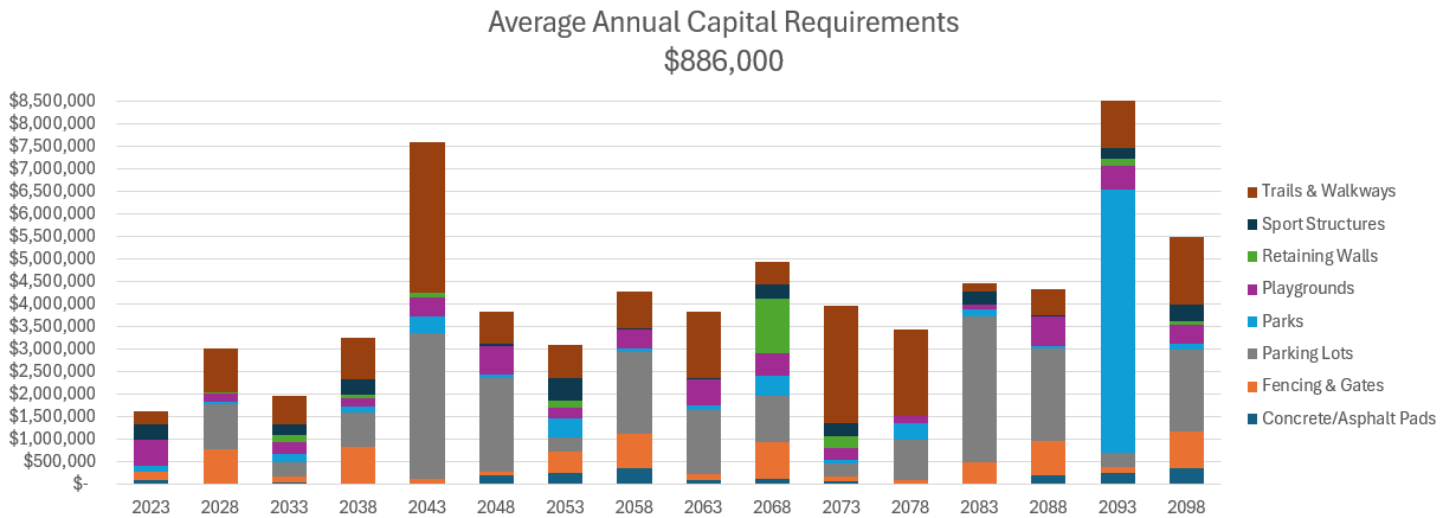
4.6.4 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration. The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance / Rehabilitation	Parking lot maintenance includes patching, hot asphalt, curb work and repainting lines and markings.
	Turf maintenance is completed both internally and by contractors.
	Granular trail surfaces are groomed, graded, and compacted typically twice per year.
	Playgrounds are inspected monthly by internal certified inspectors. Repairs are made as needed based on observation and/or inspections.
	Miscellaneous landscaping is maintained by full-time staff and seasonal horticultural staff.
Replacement	The Engineering Department is responsible for parking lot replacements.
	Engineering and Public Works are responsible for other Land Improvement replacements, depending on the scope and area of the project.
	Renewal of these assets is determined by either observation, inspection, changes in the needs of the customers and/or end users.

4.6.5 Forecasted Capital Requirements

The following graph illustrates long-term capital requirements. The annual capital requirement represents the average amount per year the Municipality should allocate towards funding rehabilitation and replacement activities. The following graph identifies capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments.

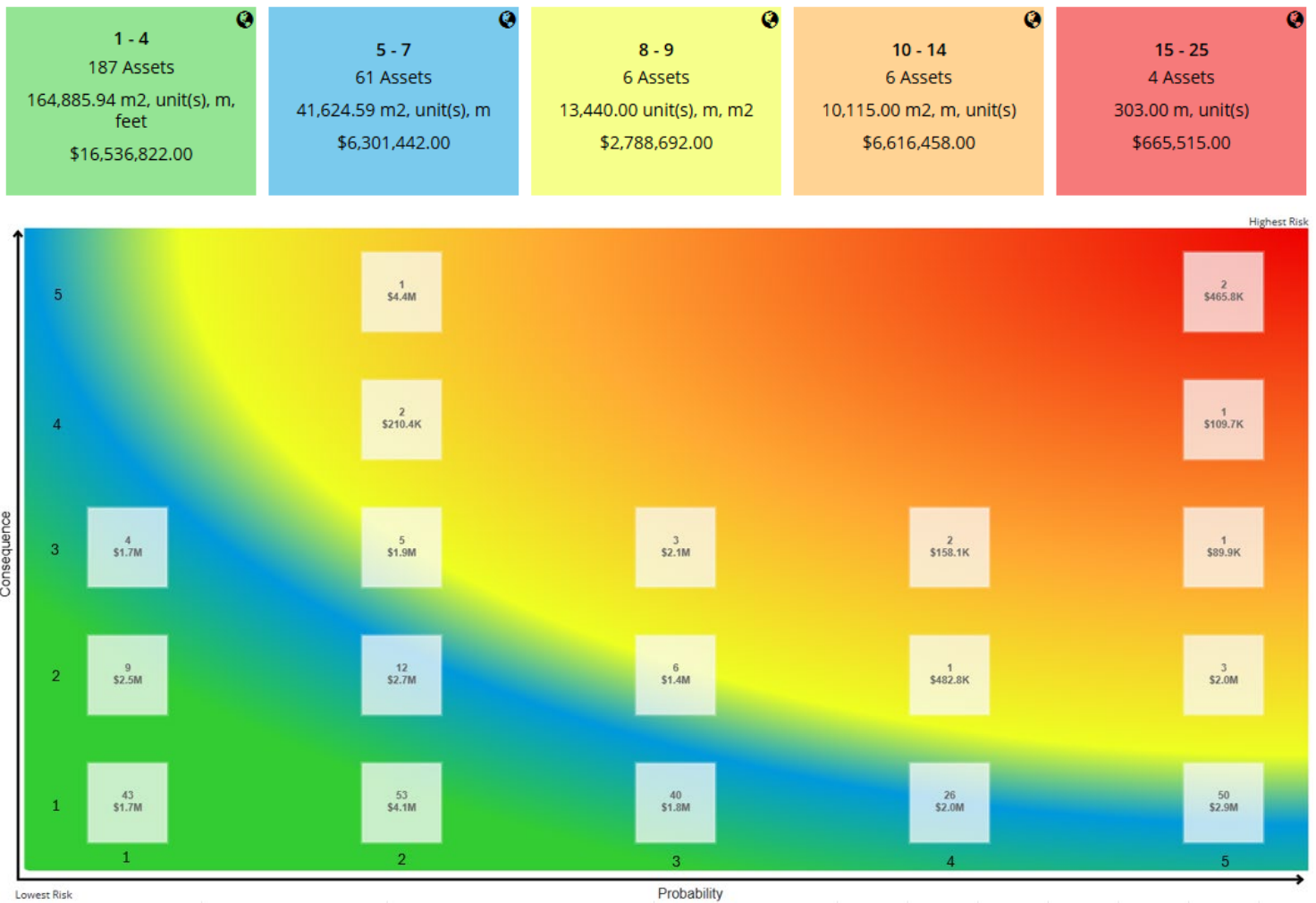


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain acceptable levels of service can be found in Appendix A.

4.6.6 Risk & Criticality

Risk Matrix

The following matrix illustrates the relationship between the probability and consequence of failure for all assets in the Fleet AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for the criteria behind this risk rating matrix.



4.6.7 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Land Improvements AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Fleet AMP category.

Land Improvements – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
LI.AC.01	Description of the availability of the recreational services supported by municipal parks and trails to residents in urban area	Acceptable If the availability of recreational services supported by municipal parks and trails is considered acceptable, this would mean that the services are accessible to most residents and that there is a decent variety of recreational services offered. For example, there may be a sufficient number of parks and trails in the area, and the services offered may include amenities such as playgrounds, picnic areas, and sports fields.	N/A	The Municipality is providing an acceptable level of service.	Staff Input (2024)	N/A

Land Improvements – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
LI.AC.01	Description of the availability of the recreational services supported by municipal parks and trails to residents in urban area	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Land Improvements – Safety & Regulatory Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
LI.SR.01	Description of the inspection process applied to park equipment and playgrounds.	Acceptable An "acceptable" inspection process would meet the minimum standards for safety inspections in Ontario. This would typically involve: Frequency of inspections: Playgrounds and park equipment should be inspected at least once per year. However, high-use equipment and structures may need to be inspected more frequently. Inspection team: Inspections should be conducted by certified playground safety inspectors who are trained to identify and assess potential safety hazards. Inspection process: The inspection process should involve a thorough examination of all equipment and structures, including checking for signs of wear and tear, rust or corrosion, loose or missing bolts, and other potential hazards. Inspectors will also check to ensure that all surfaces are safe and level, and that there are no sharp edges or other dangerous features. Inspection report: After completing an inspection, the playground safety inspector should provide a written report detailing any safety hazards or concerns that were identified, along with recommendations for addressing these issues. The report should also include recommendations for ongoing maintenance and inspections. Corrective actions: It is the responsibility of the Municipality or park operator to address any safety hazards or concerns identified during an inspection. This may involve repairing or replacing equipment or structures, adding safety features or signage, or taking other steps to mitigate potential hazards.	N/A	The Municipality is providing an acceptable level of service.	Staff Input (2024)	N/A

Land Improvements – Safety & Regulatory Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
LI.SR.01	Description of the inspection process applied to park equipment and playgrounds.	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Land Improvements AMP category.

Land Improvements – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
LI.AC.02	Acres of parkland per 1,000 people.	Acceptable The Municipality is on par or greater than others in the area.	5.4	The Municipality is providing an acceptable level of service.	Development Charges Background Study (2022)	Windsor – 5.29 Amherstburg – 5.1
LI.AC.03	Linear meters of trails per capita.	Acceptable The Municipality is on par or greater than others in the area.	0.53	The Municipality is providing an acceptable level of service.	Development Charges Background Study (2022)	Amherstburg – 0.2

Land Improvements – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
LI.AC.02	Acres of parkland per 1,000 people.	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
LI.AC.03	Linear meters of trails per capita.	Recommendation	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Land Improvements – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
LI.RP.02	Average condition for municipal land Improvements.	Acceptable Greater than 50%	55.86%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A
LI.RP.03	% of land Improvements in poor or very poor condition.	Acceptable Between 10% - 25%	17.05%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A

Land Improvements – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
LI.RP.02	Average condition for municipal land Improvements.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
LI.RP.03	% of land Improvements in poor or very poor condition.	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Land Improvements – Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
LI.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate.	Acceptable Between 60% – 80%	63%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Land Improvements – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
LI.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate.	Recommendation	-Citywide AM -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance levels of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: excellent, acceptable, needs improvement, and needs data. The risk analysis will consider a range of factors, including environmental, financial, operational, health and safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

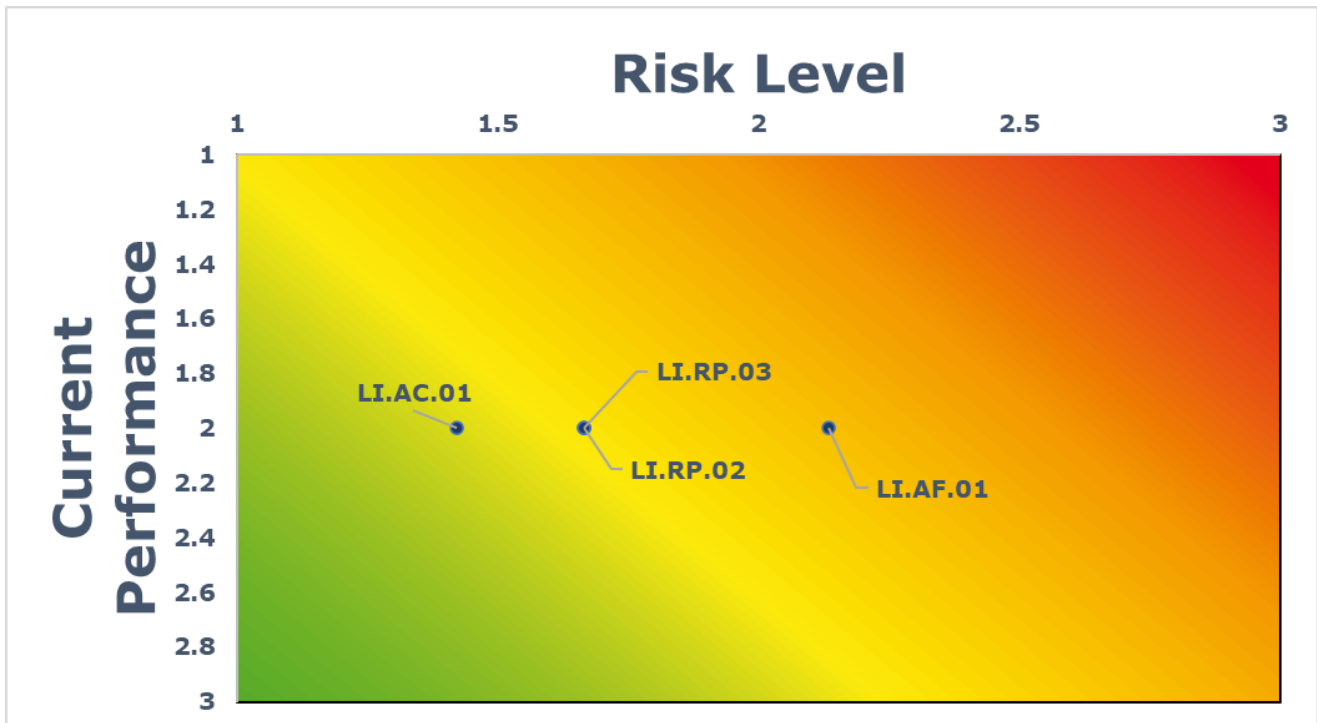
Land Improvements – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of Municipal land improvements in poor or very poor condition.	1.7	1.0	2.0	2.0	1.7
Acres of parkland per 1,000 people.	1.3	1.0	1.3	2.3	1.3
Average condition for municipal land improvements.	1.7	1.0	2.0	1.7	2.0
Annual sustainable capital reinvestment rate/required rate.	2.3	1.7	2.7	2.0	2.0
Description of the availability of the recreational services supported by municipal parks and trails to residents in urban area.	1.3	1.0	1.3	2.3	1.3
Description of the inspection process applied to park equipment and playgrounds.	2.3	1.0	2.0	2.0	2.3
Linear meters of trails per capita.	1.3	1.0	1.3	1.7	1.3

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is presented below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for Land Improvements. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

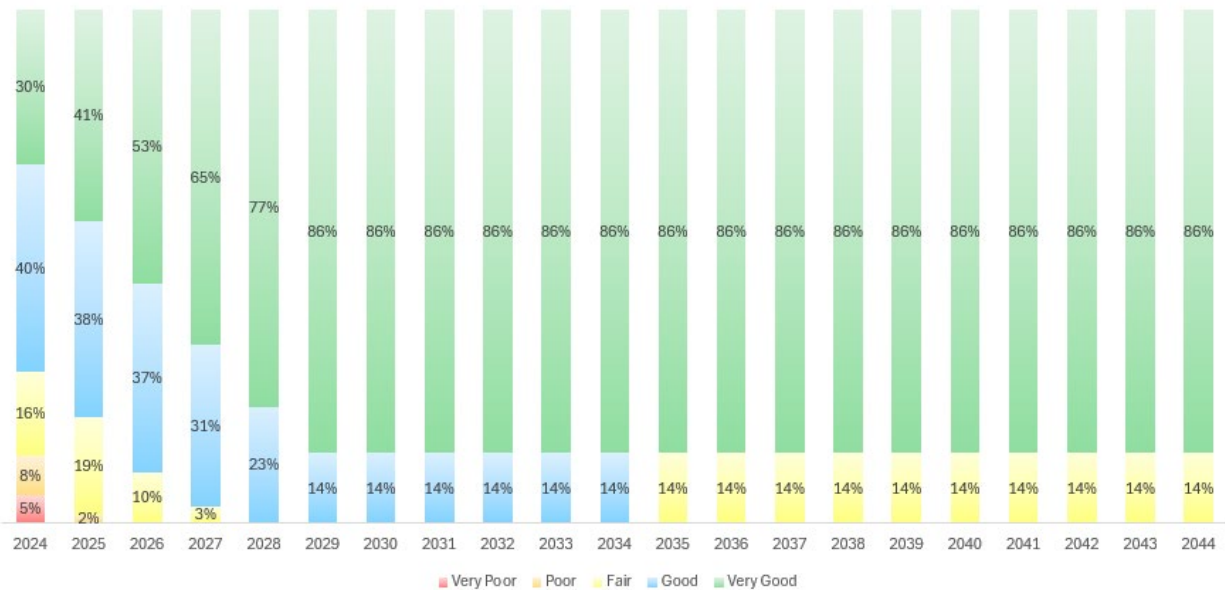
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

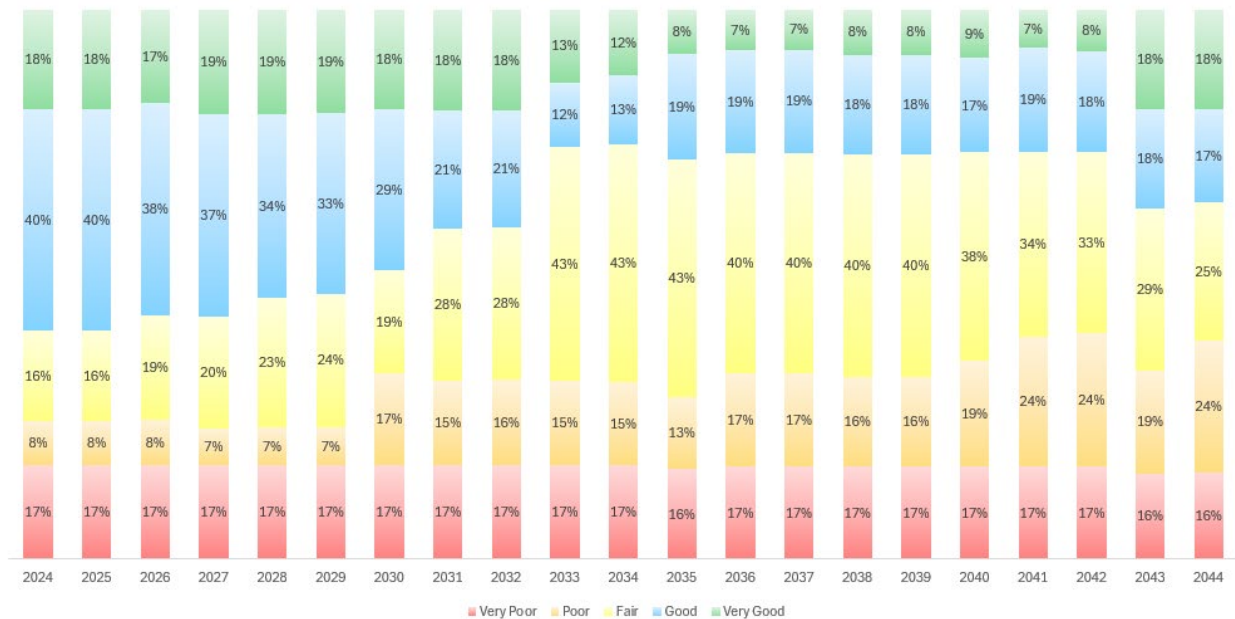
This scenario illustrates asset performance based on current capital and operating funding levels of \$5 million over a 20-year forecast and any funding not spent is carried forward to the next year. The Municipality should expect an increase in condition over the 20-year period as assets in Very Good condition increases from 30% to 86% and assets in Very Poor condition decrease from 5% to 0%. The majority of assets move from Very Good and Good to Very Good condition over the 20-year period.



Scenario 2: Maintain Current Performance

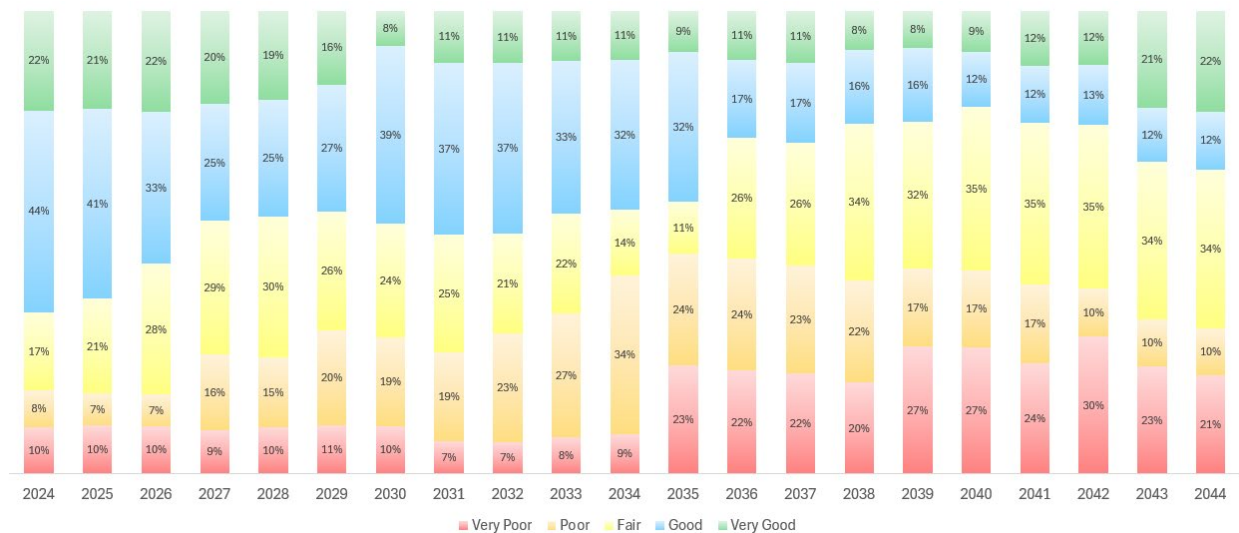
This scenario illustrates asset performance based on the constraint to maintain Land Improvements in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality an average of \$1.4 million annually.

Assets in Very Good condition fluctuate but start and finish at 18% as assets in Very Poor condition remain relatively constant around 17% over the 20-year period. The majority of assets move from Good to Fair condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for Land Improvements over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Land Improvements category, the percentage of assets in Very Good condition remains consistent at 22% as assets in Very Poor Condition increases from 10% to 21%. This would cost the Municipality on average \$1.7 million annually. The majority of assets in the Land Improvements category move from Very Good and Good condition (66%) to Very Good, Good, and Fair condition (68%) over the 20-year period.



4.6.8 Recommendations

Lifecycle Management Strategies

There is not currently a formalized strategy for condition assessment of Leamington's Land Improvements. Parking lots are patched and maintained as complaints arise as well as seasonal maintenance activities such as line painting and curb work. Granular trails and walkways are groomed, graded, and compacted twice a year while asphalt trails are crack sealed and patched as needed.

Leamington should review assets that have surpassed their EUL to determine if immediate replacement is required or whether these assets are expected to remain in service. Adjust the services lives of all assets if necessary.

Risk Management Strategy

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

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning.

Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcome

5 Analysis of Rate-funded Assets

Key Insights

- Rate-funded assets are valued at approximately \$732 million.
- 78% of rate-funded assets are in fair or better condition.
- The average annual capital requirement to sustain the current level of service for rate-funded assets is roughly \$13.8 million.
- Critical assets should be evaluated to determine appropriate risk mitigation activities and treatment options.

5.1 Water Network

The water services provided by the Municipality are overseen by the Environmental Services department. The Water Network includes underground water mains and above ground assets, pick-up trucks, dump trucks, and other vehicles and heavy machinery utilized by staff to maintain the water network, and the Water Building.

The Union Water Supply System (UWSS) supplies water to the majority of Leamington customers, with a small portion serviced by Chatham-Kent. UWSS is a Corporation with four (4) local municipalities as shareholders. The shareholders include the Towns of Kingsville and Essex and the Municipalities of Lakeshore and Leamington. UWSS is managed by the Union Water Supply Systems Inc. Board of Directors and is operated by the Ontario Clean Water Agency. This AMP does not give consideration for the assets owned by UWSS.

Leamington's Water Network state of infrastructure is illustrated in the following table.

Replacement Cost	Condition	Financial Capacity	
\$347,064,000	73.21% (Good)	Annual Requirement:	\$5,842,000
		Funding Available:	\$3,699,000
		Annual Deficit:	\$2,143,000

5.1.1 Levels of Service Statement

The Municipality of Leamington is committed to providing a high level of service for the water network, ensuring that citizens and visitors to the area have access to clean, safe, and reliable drinking water. The Municipality is dedicated to maintaining the network to ensure that the water is conveniently accessible to the community in sufficient capacity, meeting the demands of the population.

The Municipality also recognizes the importance of providing a reliable fire flow system for the community, ensuring that it is accessible in sufficient capacity to address fire hazards in the Municipality.

The water network in the Municipality is maintained to a very high standard, with minimal unplanned service interruptions due to main breaks and boil water advisories.

Furthermore, the Municipality is committed to providing these services in an affordable manner, recognizing the necessary expense of maintaining and upgrading the water network. The Municipality is dedicated to ensuring that the cost of this service is kept as low as possible, while still providing the necessary level of maintenance and repairs.

In summary, the Municipality of Leamington is committed to providing a high level of service for the water network, including the provision of clean and safe drinking water, a reliable fire flow system, and affordable service. The Municipality recognizes the importance of maintaining these critical assets to ensure the safety and well-being of its customers.

5.1.2 Asset Inventory & Cost

The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's Water Network AMP category.

AMP Segment	Quantity (Components)	Replacement Cost	Annual Capital Requirements
Hydrants	1,036	\$11,624,000	\$169,000
Water Buildings	1 (6)	\$4,320,000	\$64,000
Water Equipment	92	\$401,000	\$27,000
Water Services	8,928	\$34,742,000	\$697,000
Water Valves & Meters	22,336	\$15,541,000	\$474,000
Water Vehicles	19	\$1,776,000	\$130,000
Water Mains	354,786.934 m	\$278,660,00	\$4,282,000
Total		\$347,064,000	\$5,842,000

Replacement Cost
\$347,064,000



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

Average Annual Capital Requirements
\$5,842,000



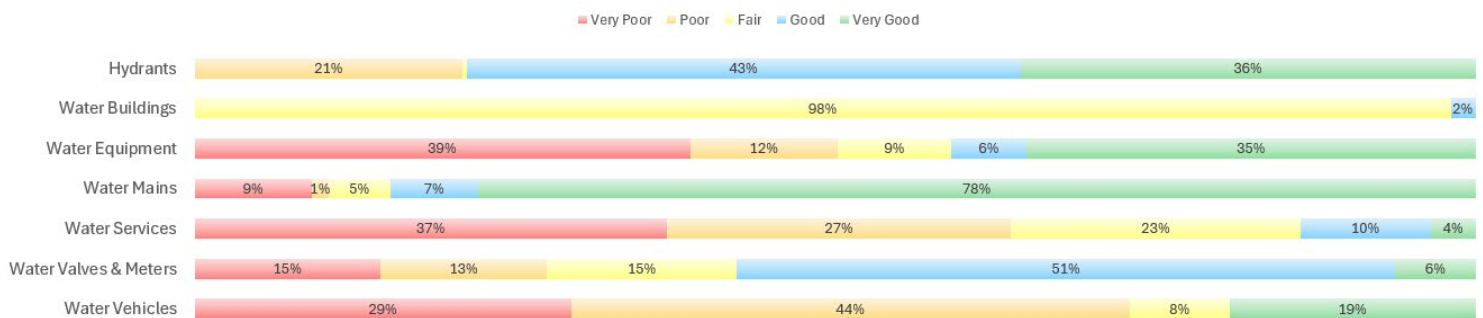
The average annual capital requirements are the amount the Municipality should be allocating annually to each Water Network segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

5.1.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and the estimated useful life for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
Hydrants	35 – 50	30.75	69.40% (Good)
Water Buildings	7 – 50	14.67	43.40% (Fair)
Water Equipment	3 – 50	11.67	45.38% (Fair)
Water Services	35 – 50	32.75	80.33% (Very Good)
Water valves & Meters	5 – 50	37.17	31.32% (Poor)
Water Vehicles	10 – 20	31.92	55.63% (Fair)
Water Mains	35 – 75	11.75	35.99% (Poor)
Average		34.58	73.21% (Good)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



To ensure that Leamington's Water Network continues to provide an acceptable level of service, the Municipality 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 are required to increase the overall condition of the water Network.

Each asset's EUL 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 Assessments

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- Staff primarily rely on age, pipe material, and the number of breaks to determine the projected condition of water mains. Staff also rely on soil testing to detect unstable asset foundations. Leamington has recently completed hydraulic modeling to record water flow and capacity.
- Hydrants, valves, and other point assets are visually inspected on a regular basis and repaired / replaced as needed.
- Water buildings are inspected monthly in accordance with Health & Safety standards. Annual roofing inspections are conducted to ensure structural integrity, and bi-annual HVAC inspections are conducted.
- Water vehicles are inspected and serviced in accordance with Commercial Vehicle Operations Registrations (CVOR) requirements.

The following table illustrates the rating criteria used to determine the current condition of Leamington's Water Network and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

5.1.4 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

The following scenario demonstrates the lifecycle management activities applied to water mains:

Event Name	Event Class	Event Range / Trigger	Impact	Cost
Flushing	Maintenance	Quarterly	No Impact	\$6,500/quarter (costs may vary based on internal labour)
Reconstruction	Replacement	At 0% Condition	Result 100% Condition	\$332 - \$4,173 /m ⁴

⁴ Refer to Appendix A for detailed pricing

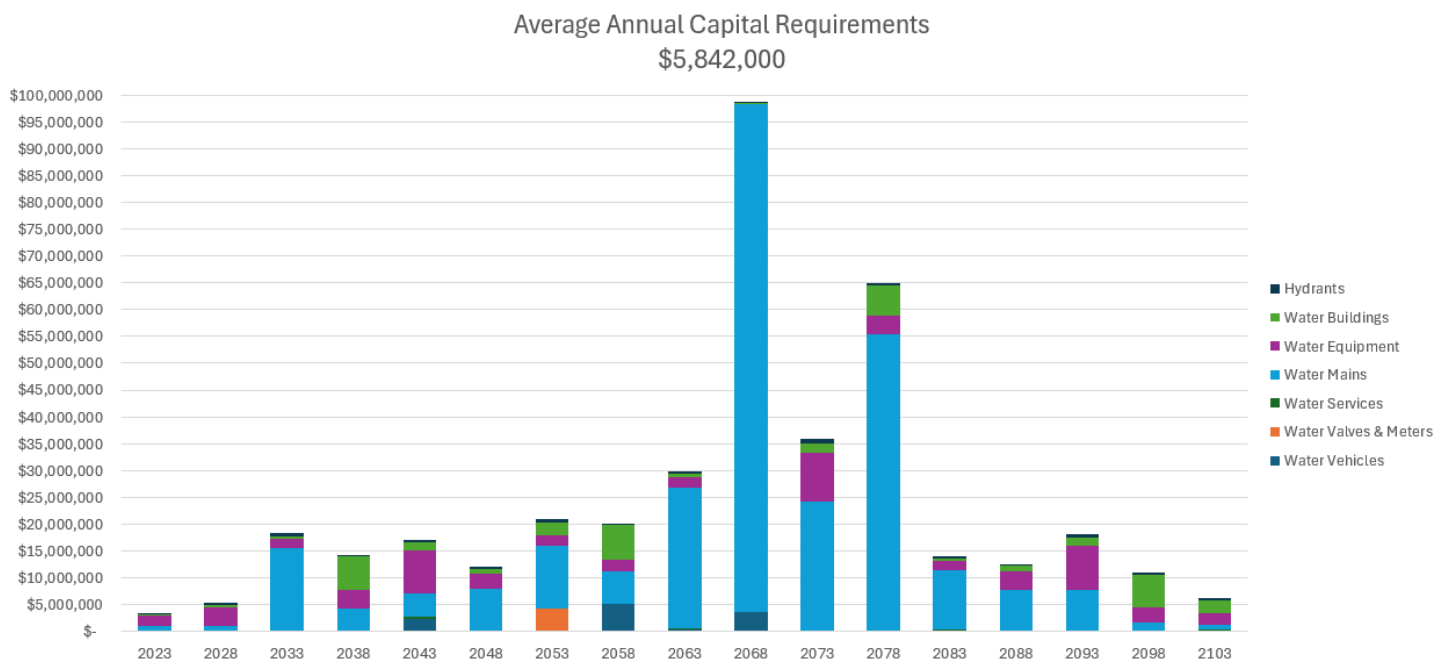
The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance	Main flushing is completed on 100% of the network on a quarterly basis utilizing in-house resources.
	Periodic pressure testing is completed to identify deficiencies and potential leaks. Leamington staff have access to hydrant pressure monitoring data through UWSS Inc. for those hydrants in which a monitor has been installed.
	Hydrant maintenance is completed on an ongoing basis and includes inspections, flushing, painting, and rehabilitating hydrants as needed. Internal staff complete hydrant maintenance.
	Water valve and meter maintenance is completed on an ongoing basis. Water meters are monitored through a smart meter network.
	The water building is inspected monthly and includes building lighting components.
	Daily vehicle checks occur on water vehicles prior to use. Regular oil changes are performed through the public works department.
Rehabilitation	Trenchless re-lining of water mains presents significant challenges and is not typically a viable option that the Municipality has employed.
	A main break or service leak may result in a temporary repair to the line until a full replacement can be completed.

Replacement	Water valves and service boxes are repaired as required.
	Water vehicles are typically replaced after 10-15 years and will be considered for repurposing depending on their condition.
	In the absence of mid-lifecycle rehabilitative events, most mains are simply maintained with the goal of full replacement once it reaches its end-of-life.
	Replacement activities are identified based on an analysis of the main break rate, any issues identified during regular maintenance activities, and in coordination with other right-of-way projects. Linear infrastructure with cement asbestos material is also prioritized for replacement.

5.1.5 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirements represent the average amount per year that Leamington should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 80 years. This forecast ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments.

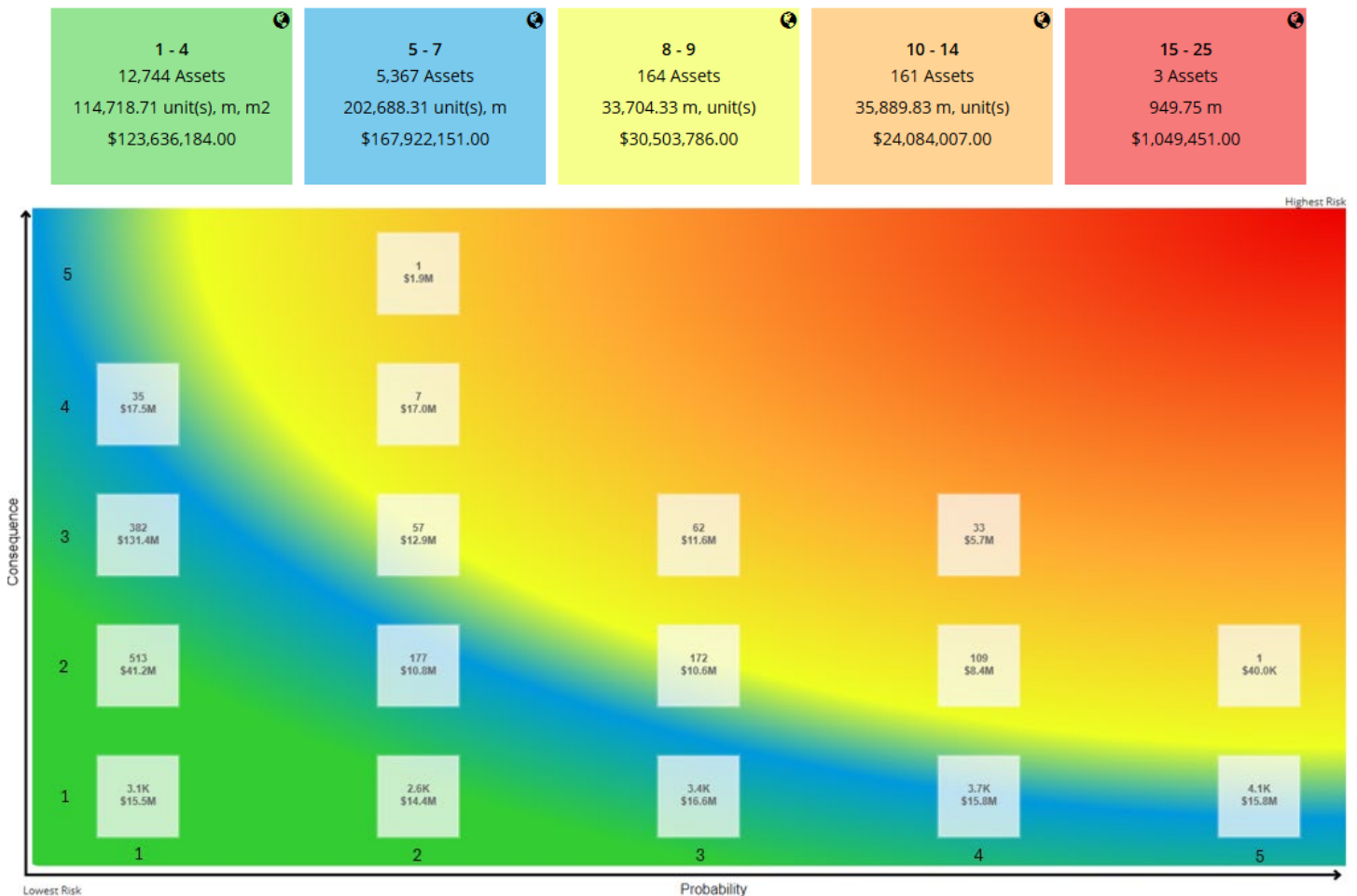


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain an acceptable level of service can be found in Appendix A.

5.1.6 Risk & Criticality

Risk Matrix

The following risk matrix illustrates the relationship between the probability of failure and the consequence of failure for assets within the Water Network AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. Refer to Appendix C for criteria used to determine the risk rating of each asset.



Risk to Current Asset Management Strategies

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

Risk Type		Description
	Asset Data Confidence	Staff have sufficient confidence in asset age, material types and locations. There are presently no formal condition assessments being completed on underground watermain infrastructure.
	Lifecycle Management Strategies	A 5-year and 10-year capital plan has been developed that identifies the replacement plan for the water network. Replacement is primarily based on condition and project coordination with other linear infrastructure. Material type is also taken into consideration for asset replacement, as some materials have a higher priority than others.
	Organizational Cognizance / Capacity	The Municipality currently employs 9 water operators, 1 water system analyst, 1 water system inspector, 1 supervisor and 1 manager to oversee the water network. This is sufficient staff to maintain the water network, and staff have all the necessary knowledge of the system.
	Infrastructure Design / Installation	Infrastructure design/installation is not a concern.
	Aging Infrastructure	Aging infrastructure is not considered a major risk currently, as roughly 75% of watermains have over 10 years of service life remaining.
	Climate Change & Extreme Weather Events	Elevated levels and storm events have been impacting water mains and other infrastructure that are located very close to the shoreline. In the past, erosion of the shoreline has resulted in infrastructure being underwater. Recent work in Southeast Leamington has eliminated the immediate concern but the risk in general still exists. Climate change has also resulted in higher raw water temperatures year-round and an increased risk for algae blooms.
	Growth	There is presently a moratorium on Greenhouse industry growth as the water treatment plant cannot support any more growth in that sector. The treatment plant has capacity for residential and commercial growth but cannot withstand any more growth in the Greenhouse industry without undergoing significant upgrades. Greenhouses are continuing to grow with alternate water sources.
	Infrastructure Reinvestment	Leamington currently has sufficient funds to maintain the present water network with the current staff complement. As growth continues and if there was an increase in re-investment, an increase in staff and funding would be required to oversee the additional capital projects and cover operational costs. The Municipality continues to seek opportunities to apply for grant funding where available and applicable to capital projects.

5.1.7 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Water Network AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Water Network AMP category.

Water Network – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.AC.01	Description, which may include maps, of the user groups or areas of the Municipality that are connected to the Municipal water system	Acceptable The municipal water system is generally available to most user groups and areas, with occasional disruptions due to maintenance or infrastructure issues. Water pressure and volume may be adequate for most users, although some may experience occasional low pressure or volume during peak usage times. There may be some disparities in water availability between different user groups or areas, but they are not severe and are usually temporary.	SEE APPENDIX B	The level of service provided is acceptable, overall, with some areas that are meeting an excellent service level.	Staff Input (2024)	N/A

Water Network – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.AC.01	Description, which may include maps, of the user groups or areas of the Municipality that are connected to the Municipal water system	O. Reg. 588/17	-Corporate LOS Spreadsheet -Maps / Drawings	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Water Network – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.RP.01	Description of boil-water advisories and service interruptions	Acceptable The Municipality's response to boil-water advisories and service interruptions is generally effective, with clear communication to affected residents or businesses and a prompt response to the issue. The Municipality may have contingency plans in place to respond to emergencies and may provide regular updates or information to affected users. However, there may be some areas for improvement, such as better coordination with other agencies or more comprehensive testing and monitoring of the water system.	N/A	In accordance with regulatory requirements, the Municipality is notified of Adverse Test results and Boil Water Advisories by the provider of water to our system (either UWSS or Chatham-Kent) and/or the Ministry of Health (MOH). The Municipality communicates information to the public and staff assist with flushing and/or sample collection as required. The current service level is considered acceptable with some attributes that are considered excellent.	AMP (2025)	N/A

Water Network – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.RP.01	Description of boil-water advisories and service interruptions.	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Water Network – Safety & Regulatory Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.SR.01	Description, which may include maps, of the user groups or areas of the Municipality that have fire flow.	Acceptable The municipal fire flow availability is generally sufficient to meet the needs of firefighters, with adequate water pressure and volume in most areas. However, there may be occasional limitations or challenges due to infrastructure issues or maintenance needs, and some areas may have lower fire flow availability than others due to distance from the water supply or distribution network. There may be some disparities in fire flow availability between different user groups or areas, but they are not severe and are usually temporary.	SEE APPENDIX B	Some areas are underserved due to the lack of supporting infrastructure. The Municipality will be initiating a masterplan that will address this issue.	Staff Input (2024)	N/A

Water Network – Safety & Regulatory Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.SR.01	Description, which may include maps, of the user groups or areas of the Municipality that have fire flow.	O. Reg. 588/17	-Corporate LOS Spreadsheet -GIS System -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Water Network AMP category.

Water Network – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.AC.02	Percent of properties connected to the Municipal water system	Excellent Greater than 90%	99%	Only 31 properties are not connected to the water system.	AMP (2025)	According to data from the Ontario Ministry of the Environment, Conservation and Parks from 2019, approximately 87% of Ontarians receive their drinking water from municipal residential drinking water systems. It's worth noting that this figure may vary depending on the specific location and population density of each municipality within Ontario.

Water Network – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.AC.02	Percent of properties connected to the Municipal water system	O. Reg. 588/17	-GIS System -Maps / Drawings -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Water Network – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.RP.02	Number 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	Acceptable Less than the previous average.	0.07	There was one BWA in 2024 that was issued on May 13 and rescinded on May 16, 2024. A total of 185 properties were impacted.	AMP (2025)	N/A
WN.RP.03	Number of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the Municipal water system	Excellent 0	0	Main breaks are usually addressed within a few hours (6-10 hours).	AMP (2025)	N/A
WN.RP.04	Average condition of water network assets	Acceptable Between 60% - 80%	73.21%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A
WN.RP.05	% of water network assets in poor or worst condition	Acceptable Between 10% - 25%	17.20%	The Municipality can calculate this in Citywide.	Citywide (2024)	N/A

Water Network – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.RP.02	Number 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	O. Reg. 588/17	-CMMS -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
WN.RP.03	Number of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the Municipal water system	O. Reg. 588/17	-CMMS -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
WN.RP.04	Average condition of water network assets	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
WN.RP.05	% of water network assets in poor or worst condition	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Water Network – Safety & Regulatory Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.SR.02	Percent of properties where fire flow is available	Needs Improvement Less than 100%	97%	Some areas are underserved due to the lack of supporting infrastructure. The Municipality will be initiating a masterplan that will address this issue.	Staff Input (2024)	In Ontario, the Ontario Fire Code (OFC) sets out the minimum requirements for fire flow availability for municipal water supply systems. Specifically, the OFC requires that municipal water supply systems have a minimum capacity to supply a continuous flow of 500 gallons per minute (gpm) for a minimum duration of two hours at a residual pressure of 20 pounds per square inch (psi) at the fire department connection, as well as a total capacity to supply a peak flow of 1500 gpm for a minimum duration of two hours. The OFC also requires that fire hydrants be located and spaced to provide fire protection coverage for all areas within the Municipality, and that the spacing and location of hydrants meet certain requirements based on the occupancy classification and street design. The exact requirements for fire flow availability may vary depending on the specific location and infrastructure of each municipality within Ontario.

Water Network – Safety & Regulatory Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.SR.02	Percent of properties where fire flow is available	Recommendation	-GIS System -Corporate LOS Spreadsheet -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Water Network – Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
WN.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate	Needs Improvement Less than 70%	63%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Water Network – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
WN.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate	Recommendation	-Citywide AM -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance levels of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: excellent, acceptable, needs improvement, and needs data. The risk analysis will consider a range of factors, including environmental, financial, operational, health and safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Water Network – Levels of Service – Risk Heat Map – Excellent:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of properties connected to the Municipal water system	1.0	1.0	2.0	3.0	3.0
Number of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the Municipal water system	2.0	2.0	2.0	3.0	3.0

Water Network – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of water network assets in poor or worst condition	2.0	1.0	2.0	2.0	2.0
Average condition of water network assets	2.0	1.0	2.0	2.0	2.0
Description of boil-water advisories and service interruptions	1.0	1.0	2.0	3.0	3.0
Description, which may include maps, of the user groups or areas of the Municipality that are connected to the Municipal water system	2.0	1.0	2.0	3.0	2.0
Description, which may include maps, of the user groups or areas of the Municipality that have fire flow	1.0	2.0	2.0	3.0	3.0
Number 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	1.0	1.0	2.0	3.0	3.0

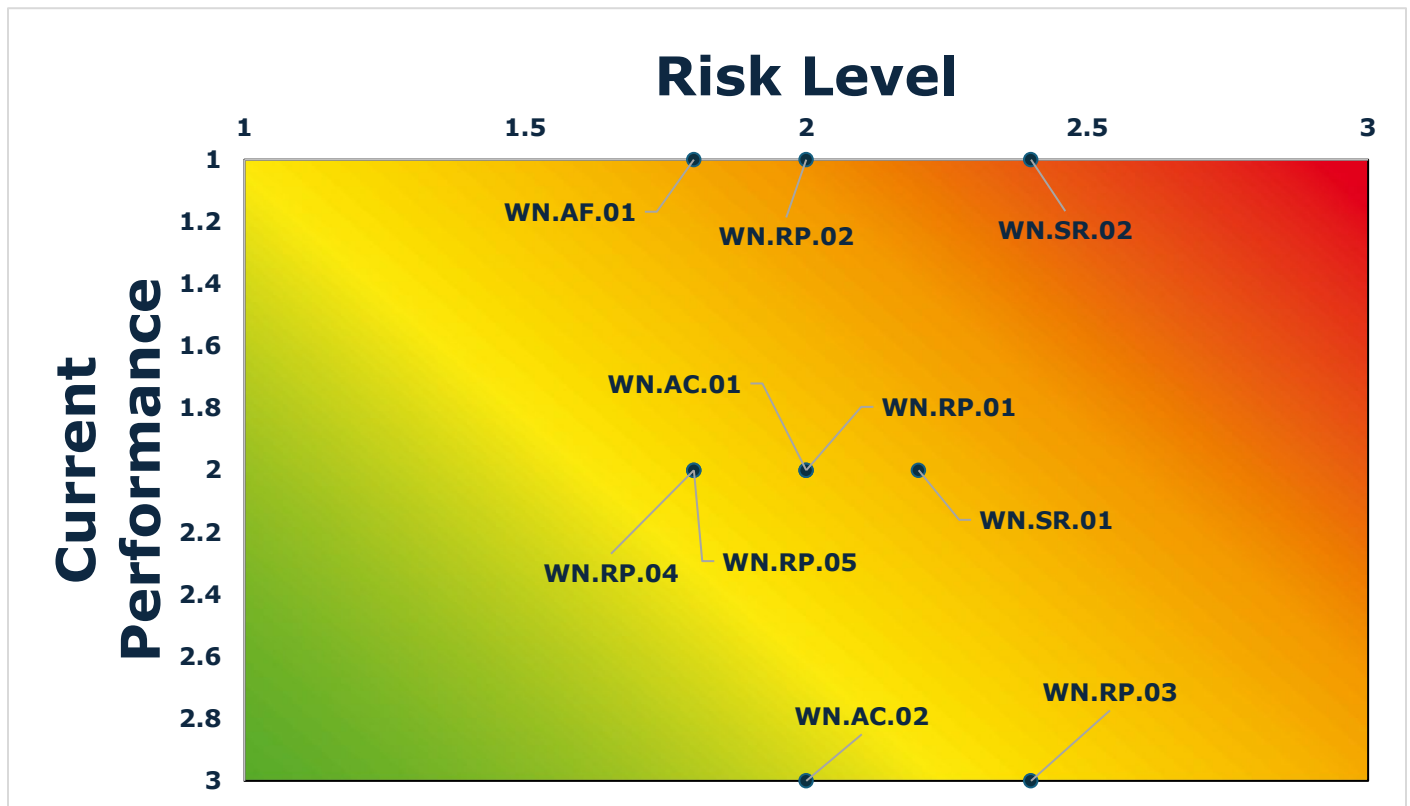
Water Network – Levels of Service - Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of properties where fire flow is available	1.0	2.0	3.0	3.0	3.0
Annual sustainable capital reinvestment rate/required rate	2.0	1.0	2.0	2.0	2.0

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is presented below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for the Water Network. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

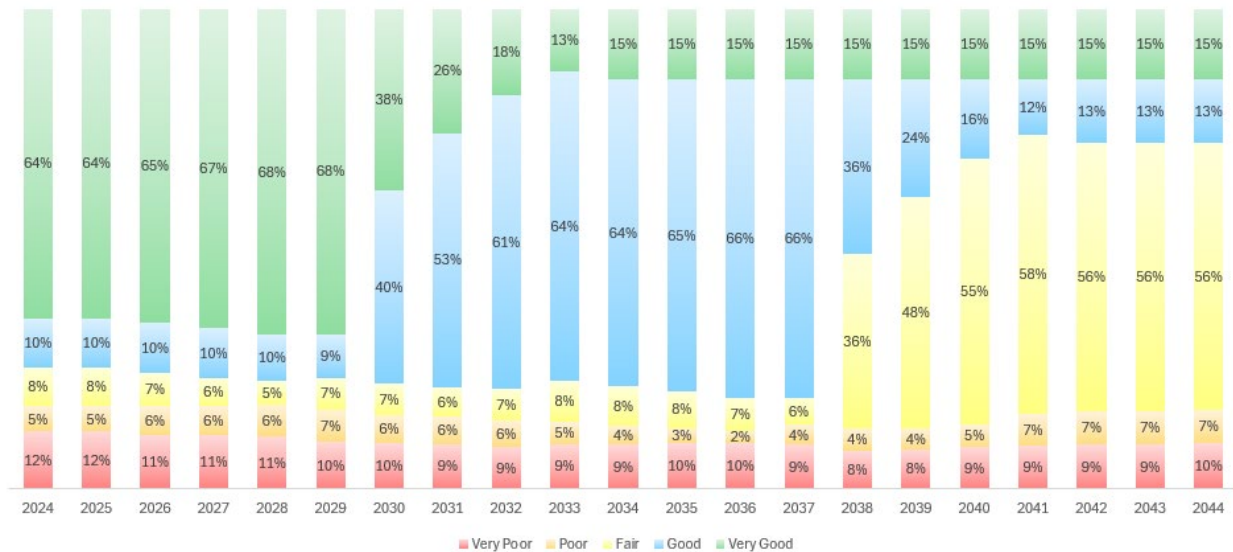
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

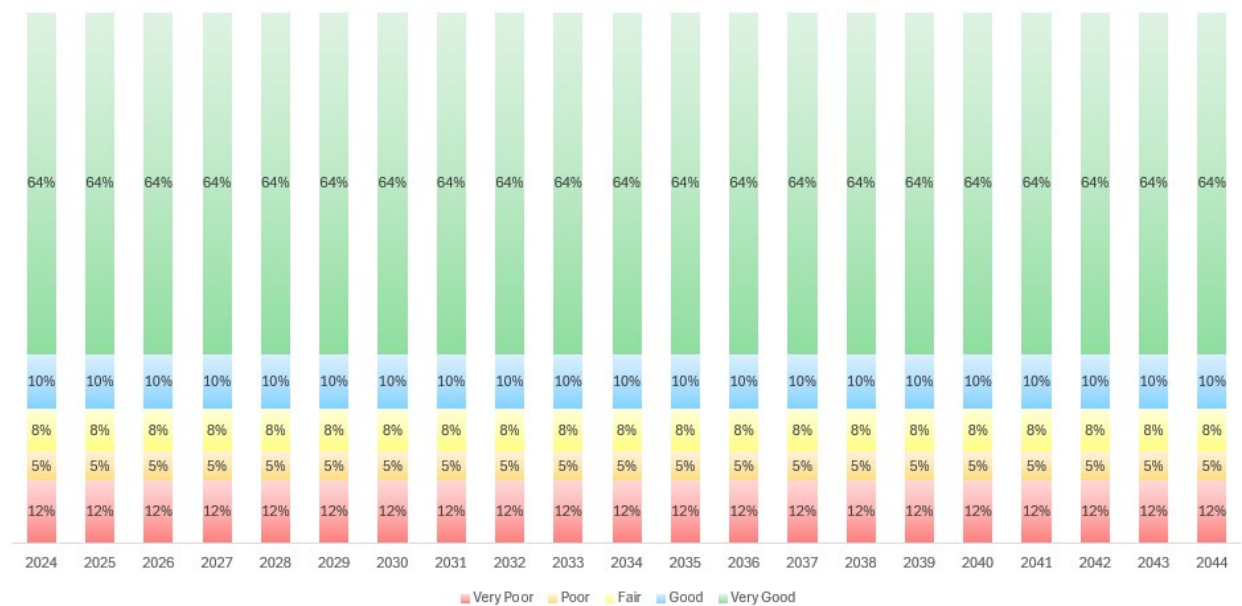
This scenario illustrates asset performance based on current capital and operating funding levels of \$6.1 million over a 20-year forecast and any funding not spent is carried forward to the next year. The Municipality should expect a decline in overall condition over the 20-year period as assets in Very Good condition decrease from 64% to 15% and assets in Very Poor condition decrease from 12% to 10% over the 20-year period. The majority of assets move from Very Good to Fair over the 20-year period.



Scenario 2: Maintain Current Performance

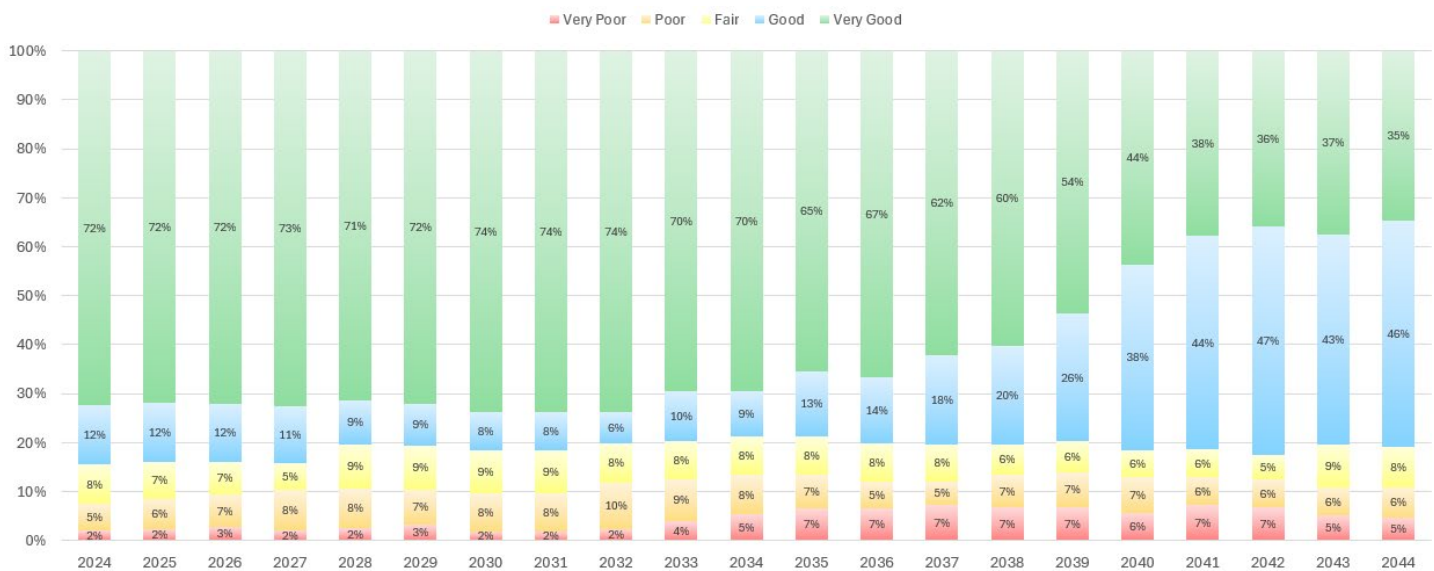
This scenario illustrates asset performance based on the constraint to maintain the Water Network in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality an average of \$6.8 million annually.

Assets in Very Good condition remain constant at 64% as assets in Very Poor condition remains constant at 12% over the 20-year period. The majority of assets remain in Very Good condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for the Water Network over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Water Network category, the percentage of assets in Very Good condition decreases from 72% to 35% as assets in Very Poor Condition increases from 2% to 5%. This would cost the Municipality on average \$5.2 million annually. The majority of assets in the Water Network category move from Very Good condition (72%) to Very Good and Good condition (81%) over the 20-year period.



5.1.8 Recommendations

Lifecycle Management Strategies

Leamington should continue to update asset replacement and event costs, and EULs of assets on a cyclical basis. Current industry best practices recommend a 5-year cycle. The Municipality should assess the suitability of corrosion protection for metallic mains such as cathodic protection systems, zinc galvanization, and plastic coating. The suitability of structural relining for larger diameter mains should also be taken into consideration where applicable. The Municipality should consider conducting watermain condition assessments through video camera technology.

Risk Management Strategies

Leamington should implement risk-based decision-making as part of their asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

The Municipality should also review risk models on a regular basis and adjust accordingly to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning.

Continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

5.2 Sewer Network

The sewer services provided by the Municipality are overseen by the Engineering department. The Municipality has a large system of sanitary and storm assets as well as a sizeable, combined sewer asset. The Sewer Network includes underground mains, catch basins, below grade chambers, and above-ground assets such as manholes, stormwater ponds, and outfalls.

The state of infrastructure for the Sewer Network is summarized in the following table:

Replacement Cost	Condition	Financial Capacity	
\$244,164,000	55.68% (Fair)	Annual Requirement:	\$4,201,000
		Funding Available:	\$2,023,000
		Annual Deficit:	\$2,178,000

5.2.1 Levels of Service Statement

The Municipality of Leamington is dedicated to providing a high level of service for its sewer network, ensuring that citizens have access to reliable and efficient wastewater management. The Municipality is committed to maintaining the sewer network to ensure that the Municipal sanitary system and the Municipal stormwater system are accessible to the community in sufficient capacity, meeting the demands of the population.

The sewer network in the Municipality includes several redundancies to manage overflows and sanitary and stormwater treatment, resulting in very few service failures. The Municipality understands the importance of maintaining these assets to ensure the safety and well-being of citizens and visitors to the area.

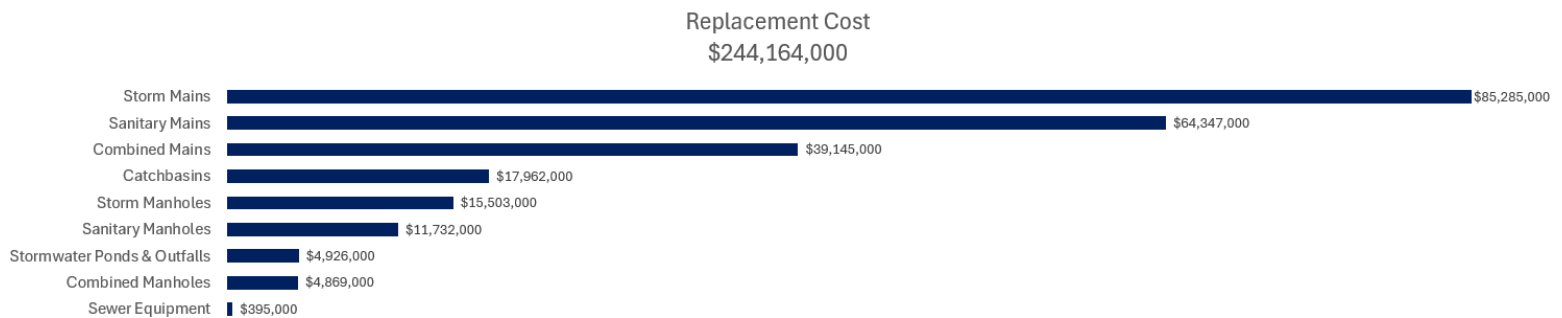
Furthermore, the Municipality is committed to providing these services in an affordable manner, recognizing the necessary expense of maintaining and upgrading the sewer network. The Municipality is dedicated to ensuring that the cost of this service is kept as low as possible, while still providing the necessary level of maintenance and repairs.

In summary, the Municipality of Leamington is committed to providing a high level of service for its sewer network, including the provision of reliable and efficient wastewater management, a well-maintained pollution control centre, and affordable service. The Municipality recognizes the importance of maintaining these critical assets to ensure the safety and well-being of citizens and visitors.

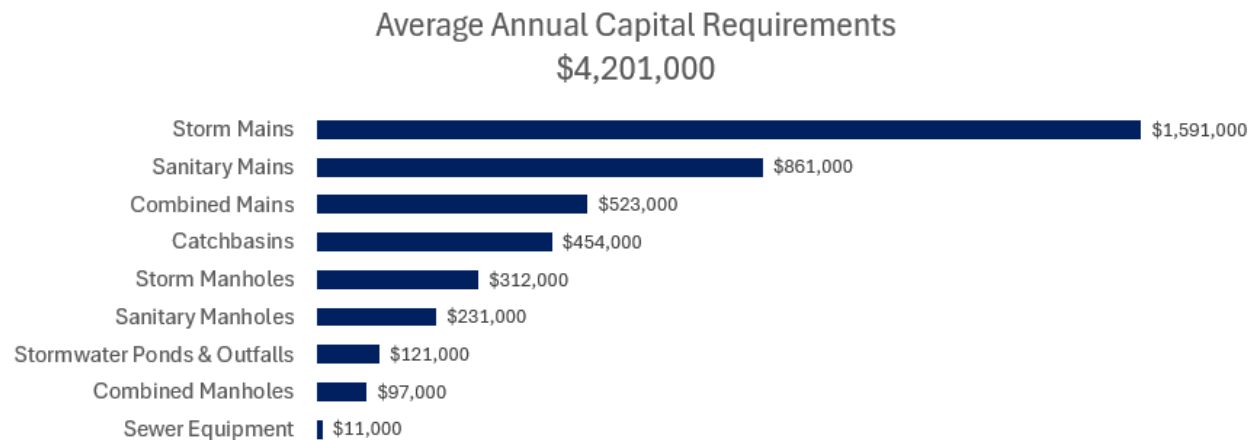
5.2.2 Asset Inventory & Costs

The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's Sewer Network AMP category.

AMP Segment	Quantity	Replacement Cost	Annual Capital Requirement
Catchbasins	2,536	\$17,962,000	\$454,000
Combined Mains	40,643.180 m	\$39,145,000	\$523,000
Combined Manholes	398	\$4,869,000	\$97,000
Sanitary Mains	75,797.14 m	\$64,347,000	\$861,000
Sanitary Manholes	1,028	\$11,732,000	\$231,000
Sewer Equipment	29	\$395,000	\$11,000
Storm Mains	74,0870.87 m	\$85,285,000	\$1,591,000
Storm Manholes	1,008	\$15,503,000	\$312,000
Stormwater Ponds & Outfalls	21	\$4,926,000	\$121,000
Total		\$244,164,000	\$4,201,000



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



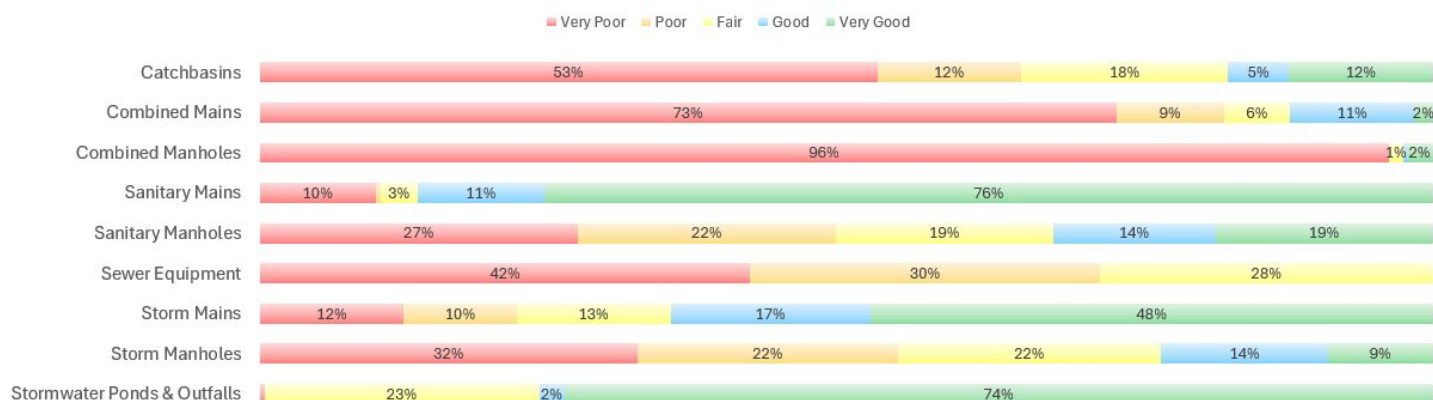
The average annual capital requirements are the amount the Municipality should be allocating annually to each AMP category to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph below does not include associated operations and maintenance costs.

5.2.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and EUL for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age	Average Condition
Catchbasins	5 – 50	38.92	28.02% (Poor)
Combined Mains	30 – 90	80.58	16.15% (Very Poor)
Combined Manholes	50 – 100	77.42	2.86% (Very Poor)
Sanitary Mains	40 – 75	28.75	80.56% (Very Good)
Sanitary Manholes	32 – 55	28.83	44.24% (Fair)
Sewer Equipment	30 – 40	28.58	23.29% (Poor)
Storm Mains	20 – 75	30.58	66.22% (Good)
Storm Manholes	11 – 50	30.42	37.88% (Poor)
Stormwater Ponds & Outfalls	19 – 100	15.42	86.60% (Very Good)
Average		38.25	55.68 (Fair)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



To ensure Leamington's Sewer Network continues to provide an acceptable level of service, the Municipality 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 are required to increase the overall condition of the Sewer Network.

Each assets EUL should also be reviewed periodically to determine whether adjustments are needed to better align with the observed length of service for each asset type.

Current Approach to Condition Assessment

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- CCTV inspections are conducted as needed or in coordination with road construction.
- Staff rely on a variety of metrics including age, pipe material and diameter, location, and available CCTV assessments to determine the projected condition of mains.
- Other sewer assets are inspected by staff on a regular basis.

The following table illustrates the rating criteria used to determine the current condition of Leamington's Land Improvements and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

5.2.4 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

The following scenario demonstrates the lifecycle management activities applied to sanitary mains:

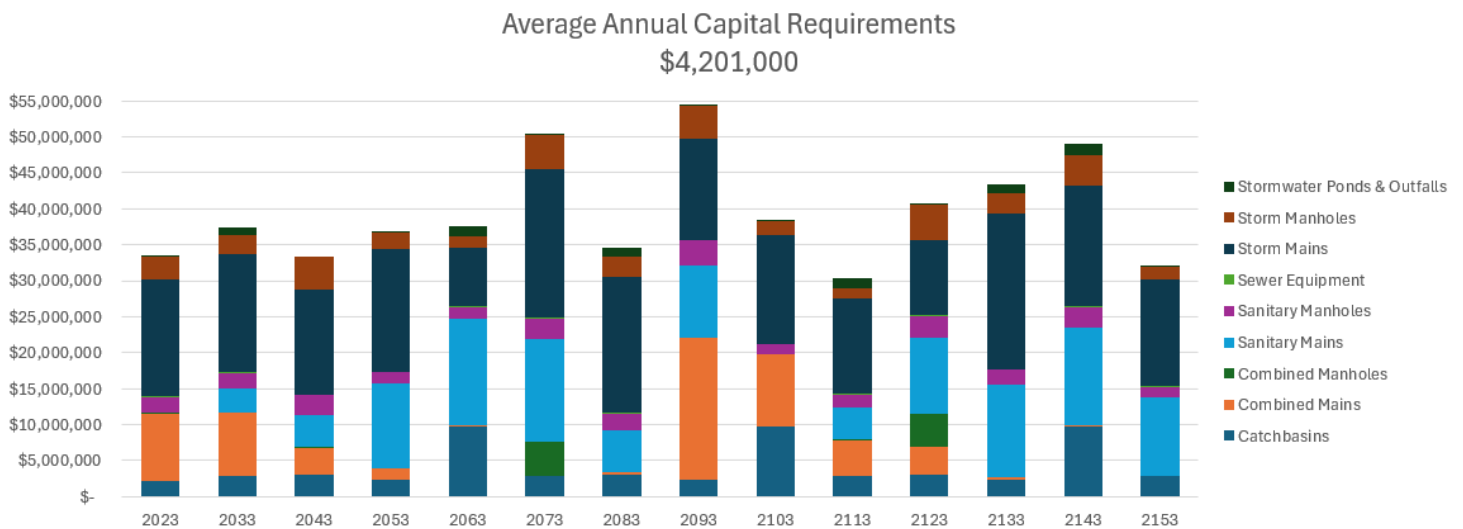
Event Name	Event Class	Event Range / Trigger	Impact	Cost
Flushing	Maintenance	Annually, Semi-Annually, Quarterly	No Impact	\$0.80 - \$3.15/m
Reconstruction	Replacement	At 0% Condition	Result 100% Condition	\$570 - \$3,050 /m

The following table illustrates Leamington's current lifecycle management strategy:

Event Class	Description
Maintenance	Main flushing is completed on 20% of the network annually by a third-party contractor.
	Cleaning of catch basins, stormwater ponds, and outfalls is ad hoc and as needed. Informal visual inspections guide cleaning activities.
Rehabilitation	Trenchless re-lining is not always a practical and viably efficient option for a largely combined sewer system.
Replacement	In the absence of mid-lifecycle rehabilitative events, most mains are simply maintained with the goal of full replacement once it reaches its end-of-life.
	Project prioritization is based on CCTV inspections, asset age, material, environmental risks, health and safety risks, and social impact. The Municipality continues to add new linear assets through combined sewer separation.

5.2.5 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year the Municipality should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 130 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 10-year increments.

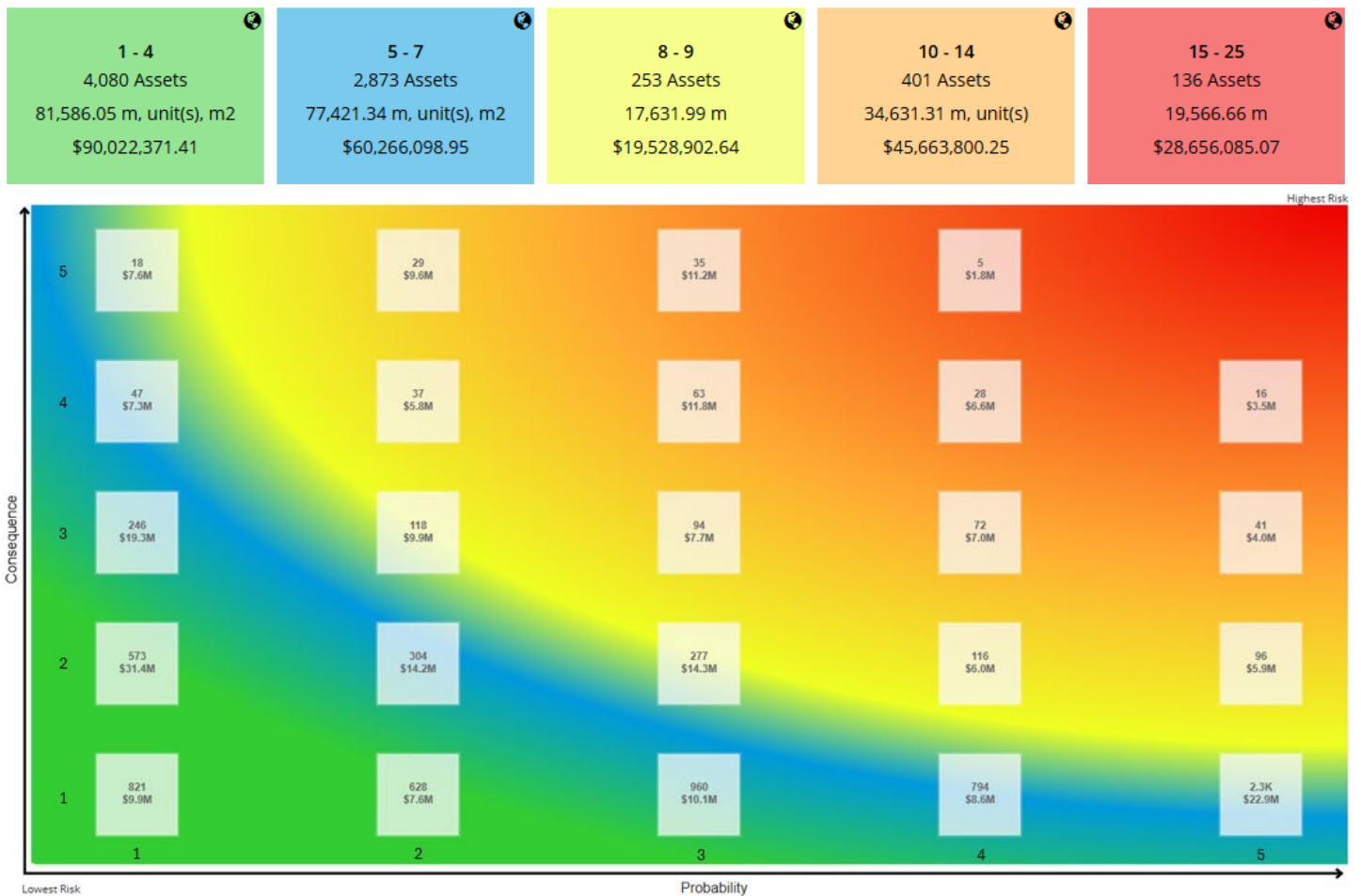


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain an acceptable level of service can be found in Appendix A.

5.2.6 Risk & Criticality

Risk Matrix

The following risk matrix illustrates the relationship between the probability of failure and the consequence of failure for the assets within this AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for criteria used to determine the risk rating of each asset.



Risks to Current Asset Management Strategies

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

Risk Type		Description
	Asset Data Confidence	Asset data confidence is not considered a risk. The asset inventory in Citywide is comprehensive, and staff have confidence in the accuracy of this data.
	Lifecycle Management Strategies	No formal lifecycle strategies have been adapted for the sewer network. Staff have had discussions around implementing an annual condition rating program, to better maintain the sewer network. There is a formal sewer separation program in place to separate combined sewers, including a master plan completed in 2005. Staff are performing annual flushing and have performed re-lining on the sewers; however, they are not following a program, but more of an informal strategy. A formal lifecycle management program, including a sewer condition rating exercise, has been discussed and staff believes this would be beneficial to manage the storm network more effectively.
	Organizational Cognizance / Capacity	The current staff capacity is sufficient for completion of scheduled maintenance activities however, there is not enough staff capacity to complete on-going updates of asset inventory or a condition rating program.
	Infrastructure Design / Installation	The design of combined sewers in the Municipality poses a significant risk. Combined sewers are more prone to failure as they are more likely to exceed their operational capacity than separated sewers. Staff are actively working to mitigate this risk through their sewer separation program. Much of the storm network has been constructed with concrete sewers consistent with industry standards. However, the storm network in the area known as "Old Leamington" consists of concrete sewers which are not in line with industry standards. Additionally, corrugated pipe is used for some of the larger storm sewers, which is corroding at an accelerated rate of roughly 35-40 years due to salt on the roads ending up in the storm sewers. This is significantly less than the concrete sewers, which have been in use for over 80 years and are still functioning.

Risk Type		Description
	Aging Infrastructure	A high number of assets in the sewer network have exceeded their useful life. Particularly, combined sewers are much older than the rest of the sewer network. Storm network assets in "Old Leamington" have far surpassed the end of their useful life, by roughly 40 years. Many corrugated steel pipes have also surpassed their useful life, due to the accelerated corrosion rate.
	Climate Change & Extreme Weather Events	Climate change and extreme weather events pose a large risk to the combined sewers in the Municipality. During extreme rainfall events, combined sewers must handle the storm load, along with the sanitary sewer load. This load is then directed to the Pollution Control Plant during extreme weather events, putting a strain on the plant's capacity. It also poses a potential for overflow events to the natural environment. With the increased storm frequency and intensity, the system does not have the capacity to be able to accommodate for the extreme weather events.
	Growth	The current network capacity is sufficient to sustain immediate growth projections, however it will likely not be sufficient if the Municipality plans to expand.
	Infrastructure Reinvestment	Financial constraints pose a risk to the separation of combined sewers in the Municipality. The Master Plan completed in 2005 anticipated that all combined sewers would be separated in 25 years however, it will likely take over 100 years due to financial constraints. Additionally, some of the infrastructure re-investment in the sewer network is dependent on infrastructure stimulus programs. Leamington currently has sufficient funds to maintain the present storm network. However, if a more formal lifecycle strategy is identified, they will require more funds to complete all required lifecycle events. Additionally, if the storm network expands to the North, Leamington will also require more funds to facilitate this expansion. While infrastructure re-investment is not considered a risk at this time, the Municipality does anticipate that the current level of funding will not be sufficient in the future.

5.2.7 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the Sewer Network AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the Sewer Network AMP category.

Sewer Network – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.AC.01	Description, which may include maps, of the user groups or areas of the Municipality that are connected to the Municipal wastewater system	Acceptable An acceptable wastewater system would generally be one that has sufficient capacity and coverage to connect all users in the community that require service. There may be some areas where the cost or feasibility of connection is prohibitive, but these would be the exception rather than the rule. Additionally, the system would be well-maintained and reliable, minimizing the risk of backups or overflows.	N/A	The Municipality's sewer system is comprised of separated sanitary sewers and combined sewers that may contain stormwater during rainfall/snowmelt events. The service area is focused on the urban area. The rural area with greenhouses is not serviced.	Staff Input (2024)	N/A
SN.AC.02	Description, which may include maps, of the user groups or areas of the Municipality that are protected from flooding, including the extent of the protection provided by the Municipal stormwater management system	Acceptable In a Municipality with an acceptable level of flood protection, the user groups, or areas at greatest risk of flooding are well-defined, and there is a comprehensive stormwater management system in place to protect them. The system is designed to handle the most extreme weather events, and there are contingency plans in place to address any unexpected incidents. Maps are available to the public, showing the areas protected by the system, as well as any potential flood zones or high-risk areas that may require additional protection or attention.	N/A	The existing stormwater and combined sewer systems were designed and constructed at various points in history as the Municipality expanded. The earliest designed systems used small theoretical storm events (1:2 year) to size piping to convey water. Storm events that exceeded the pipe capacities simply passed overland or were trapped in low-lying areas within the urban boundary. The early systems were established under the Drainage Act, and generally followed the creek and stream alignments (i.e. not road allowances). Later in the '70s generally accepted design parameters changed to the design of sewer systems to convey 1:5-year storm events. Again, storm events that exceeded pipe capacities simply passed overland or were temporarily trapped in low-lying areas within the urban area. Through the 1980s and 1990s, the Municipality conducted a program to disconnect roof leaders from combined sewer areas with moderate success. A modelling exercise and flood analysis was completed to prepare to redirect stormwater to the Sturgeon Creek from the Selkirk Drain. Not yet complete, this study is still relied upon and as sewers are separated, more and more areas drain to the Sturgeon Creek, relieving pressure in the Selkirk system. In the meantime, to protect properties, there remain a significant number of combined sewer overflows (CSO's) to relieve hydraulic pressures and prevent flooding.	Staff Input (2024)	N/A

Sewer Network – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.AC.01	Description, which may include maps, of the user groups or areas of the Municipality that are connected to the Municipal wastewater system	O. Reg. 588/17	-Corporate LOS Spreadsheet -Maps / Drawings	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.AC.02	Description, which may include maps, of the user groups or areas of the Municipality that are protected from flooding, including the extent of the protection provided by the Municipal stormwater management system	O. Reg. 588/17	-Corporate LOS Spreadsheet -Maps / Drawings	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025

Sewer Network – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.RP.01	Description of the frequency and volume of overflows in combined sewers in the Municipal wastewater system that occurs in habitable areas or beaches	Acceptable In a Municipality where the combined sewers in the wastewater system are designed with acceptable overflow structures, overflows in habitable areas or beaches may occur occasionally, but the frequency and volume are relatively low. The system is designed to handle typical rainfall events, and overflow structures are in place to mitigate potential damage and health hazards. However, extreme weather events may still lead to overflows, and the Municipality has contingency plans in place to address these incidents, including public notifications, cleanup protocols, and repair procedures.	N/A	The frequency and volume of combined sewer overflows could be described as infrequent and/or random. Events occur depending on the severity of the rainfall event that occurs over the associated drainage area.	Staff Input (2024)	N/A
SN.RP.02	Description of how stormwater can get into sewers in the Municipal wastewater system, causing sewage to overflow into streets or backup into homes	Acceptable In a Municipality where the Municipal wastewater system is designed with acceptable overflow structures, stormwater can still enter the sewers, but the likelihood of sewage overflows or backups into homes is minimal. The system is designed to handle typical rainfall events, and overflow structures are in place to mitigate potential damage and health hazards. However, extreme weather events may still lead to overflows, and the Municipality has contingency plans in place to address these incidents, including public notifications, cleanup protocols, and repair procedures.	N/A	To eliminate the discharge of combined sewage into the natural environment, the Municipal sewer system recaptures combined sewer overflow and directs it to a storage lagoon on the PCC property. This sewage is then reintroduced into the treatment system after rain events and treated prior to discharge as sewage effluent. The arrangement of weirs and overflows could theoretically cause combined sewage to overflow into streets. A combined sewer monitoring program is planned to be installed in critical areas	Staff Input (2024)	N/A

Sewer Network – Reliability & Performance – Analysis Continued:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.RP.03	Description of how sanitary sewers in the Municipal wastewater system are designed to be resilient to stormwater infiltration.	Acceptable In a Municipality where the Municipal wastewater system is designed to be acceptable, the sanitary sewers are generally resilient to stormwater infiltration. The system is designed with a variety of measures to prevent infiltration, including the use of high-quality materials, regular maintenance, and inspection. The system is also typically well-connected to other infrastructure, such as stormwater management systems, which helps to mitigate any potential infiltration. Although the system may experience occasional overflows and backups, these incidents are generally minor, and the Municipality has plans in place to address any issues that arise.	N/A	The Municipality has taken several steps to improve resiliency. The headworks of the PCC were reconstructed and modified to increase capacity. A former open aeration treatment basin was converted to a storage lagoon as a place to buffer sewage and relieve system pressures. Combined sewer overflows and overflow piping within the network effectively lower the hydraulic grade line of the sewer system and therefore improve resiliency.	Staff Input (2024)	N/A
SN.RP.04	Description of the effluent that is discharged from sewage treatment plants in the Municipal wastewater system	Acceptable In a Municipality where the Municipal wastewater system needs improvement, the effluent discharged from sewage treatment plants may not meet acceptable standards for quality and safety. The treatment process may not be fully effective in removing contaminants and pathogens, resulting in high levels of pollutants in the effluent. As a result, the effluent may pose a significant risk to public health and the environment, potentially leading to the contamination of waterways and harm to aquatic life.	N/A	Effluent refers to water pollution that is discharged from a wastewater treatment plant and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for Municipal wastewater treatment plants. The Leamington PCC is a conventional activated sludge plant that provides ultraviolet disinfection prior to discharging treated effluent to Lake Erie.	Staff Input (2024)	N/A

Sewer Network – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.RP.01	Description of the frequency and volume of overflows in combined sewers in the Municipal wastewater system that occurs in habitable areas or beaches	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.02	Description of how stormwater can get into sewers in the Municipal wastewater system, causing sewage to overflow into streets or backup into homes	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025
SN.RP.03	Description of how sanitary sewers in the Municipal wastewater system are designed to be resilient to stormwater infiltration	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025
SN.RP.04	Description of the effluent that is discharged from sewage treatment plants in the Municipal wastewater system	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025

Sewer Network – Safety & Regulatory Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.SR.01	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	Acceptable In a Municipality where the combined sewers in the wastewater system are designed with acceptable overflow structures, there are adequate structures in place to allow for overflow during storm events, preventing backups into homes and businesses. The system is designed to handle typical rainfall events, but there may still be instances of overflows during extreme weather events. The Municipality has contingency plans in place to address any unexpected incidents, including public notifications, cleanup protocols, and repair procedures.	N/A	When the flow in a combined system exceeds the hydraulic capacity of the pipes, water can overflow to a storm sewer or sanitary sewer. At various points in the combined system, the Municipality installed weirs and overflow pipes so that during dry weather flows, sewage is directed to the PCC. However, during extreme weather events and surcharging, the weirs and overflows direct combined sewage to the existing storm and sanitary sewer network. This arrangement has effectively eliminated backups into homes due to the main sewer network.	Staff Input (2023)	N/A

Sewer Network – Safety & Regulatory Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.SR.01	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	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the Sewer Network AMP category.

Sewer Network – Accessibility Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.AC.03	Percent of properties connected to the Municipal wastewater system	Needs Improvement Less than 70%	63.8%	The Municipality of Leamington is mainly rural. While the urban areas are connected to the wastewater system, rural areas are not currently serviced.	Citywide (2024)	According to data from the Ontario Ministry of the Environment, Conservation and Parks from 2019, approximately 87% of Ontarians receive their drinking water from municipal residential drinking water systems. It's worth noting that this figure may vary depending on the specific location and population density of each municipality within Ontario.

Sewer Network – Accessibility Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.AC.03	Percent of properties connected to the Municipal wastewater system	O. Reg. 588/17	-GIS System -Maps / Drawings -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Sewer Network – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.RP.05	Number 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	Excellent 0	0	N/A	AMP (2025)	N/A
SN.RP.06	Number of connection-days per year having wastewater backups compared to the total number of properties connected to the Municipal wastewater system	Excellent 0	0	N/A	AMP (2025)	N/A
SN.RP.07	Number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the Municipal wastewater system	Excellent 0	0	N/A	AMP (2025)	N/A
SN.RP.08	Average condition of sewer network assets	Needs Improvement Less than 60%	55.68%	Leamington can calculate this in Citywide.	Citywide (2024)	N/A
SN.RP.09	% of sewer network assets in poor or very poor condition	Needs Improvement Greater than 25%	35.64%	Leamington can calculate this in Citywide.	Citywide (2024)	N/A

Sewer Network Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.RP.05	Number 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	O. Reg. 588/17	-Corporate LOS Spreadsheet -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.06	Number of connection-days per year having wastewater backups compared to the total number of properties connected to the Municipal wastewater system	O. Reg. 588/17	-Corporate LOS Spreadsheet -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.07	Number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the Municipal wastewater system	O. Reg. 588/17	-Corporate LOS Spreadsheet -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.08	Average condition of sewer network assets	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.09	% of sewer network assets in poor or worst condition	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Sewer Network – Safety & Regulatory Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.SR.02	Percent of properties in Municipality resilient to a 100-year storm.	Needs Improvement Less than 100% Acceptable & Excellent 100%	Appendix B	Appendix B	Southeast Leamington Graduated Risk Floodplain Mapping (2020)	N/A
SN.SR.03	Percent of the Municipal stormwater management system resilient to a 5-year storm.	Needs Improvement Less than 100% Acceptable & Excellent 100%	TBD	TBD	TBD	N/A

Sewer Network – Safety & Regulatory Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.SR.02	Percent of properties in Municipality resilient to a 100-year storm.	O. Reg. 588/17	-Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.SR.03	Percent of the Municipal stormwater management system resilient to a 5-year storm.	O. Reg. 588/17	-Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Sewer Network – Affordability Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate.	Needs Improvement Less than 70%	24%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Sewer Network – Affordability Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.AF.01	Annual sustainable capital reinvestment/required capital reinvestment rate.	Recommendation	-Citywide AM -Other	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

Sewer Network – Levels of Service – Risk Heat Map – Excellent:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Number 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	1.0	1.5	1.5	2.0	1.5
Number of connection-days per year having wastewater backups compared to the total number of properties connected to the Municipal wastewater system	2.0	2.0	2.0	2.5	2.0

Sewer Network – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
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	2.5	3.0	2.5	3.0	3.0
Description of how sanitary sewers in the Municipal wastewater system are designed to be resilient to stormwater infiltration	2.5	2.0	2.5	1.5	2.0
Description of how stormwater can get into sewers in the Municipal wastewater system, causing sewage to overflow into streets or backup into homes	2.0	2.5	2.0	2.5	2.5
Description of the frequency and volume of overflows in combined sewers in the Municipal wastewater system that occurs in habitable areas or beaches	2.5	3.0	2.0	3.0	3.0
Description, which may include maps, of the user groups or areas of the Municipality that are connected to the Municipal wastewater system	2.5	3.0	2.0	3.0	3.0
Description, which may include maps, of the user groups or areas of the Municipality that are protected from flooding, including the extent of the protection provided by the Municipal stormwater management system.	2.5	2.5	2.5	3.0	2.5

Sewer Network – Levels of Service – Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Percent of properties connected to the Municipal wastewater system	1.0	1.5	1.5	2.0	1.5
% of sewer network assets in poor or worst condition	2.5	2.0	2.5	2.0	2.0
Annual sustainable capital reinvestment rate/required rate	2.0	1.5	2.0	1.5	1.5
Average condition of sewer network assets	2.5	2.0	2.5	2.0	2.0
Percent of properties in Municipality resilient to a 100-year storm.	2.0	2.0	2.0	2.5	2.5

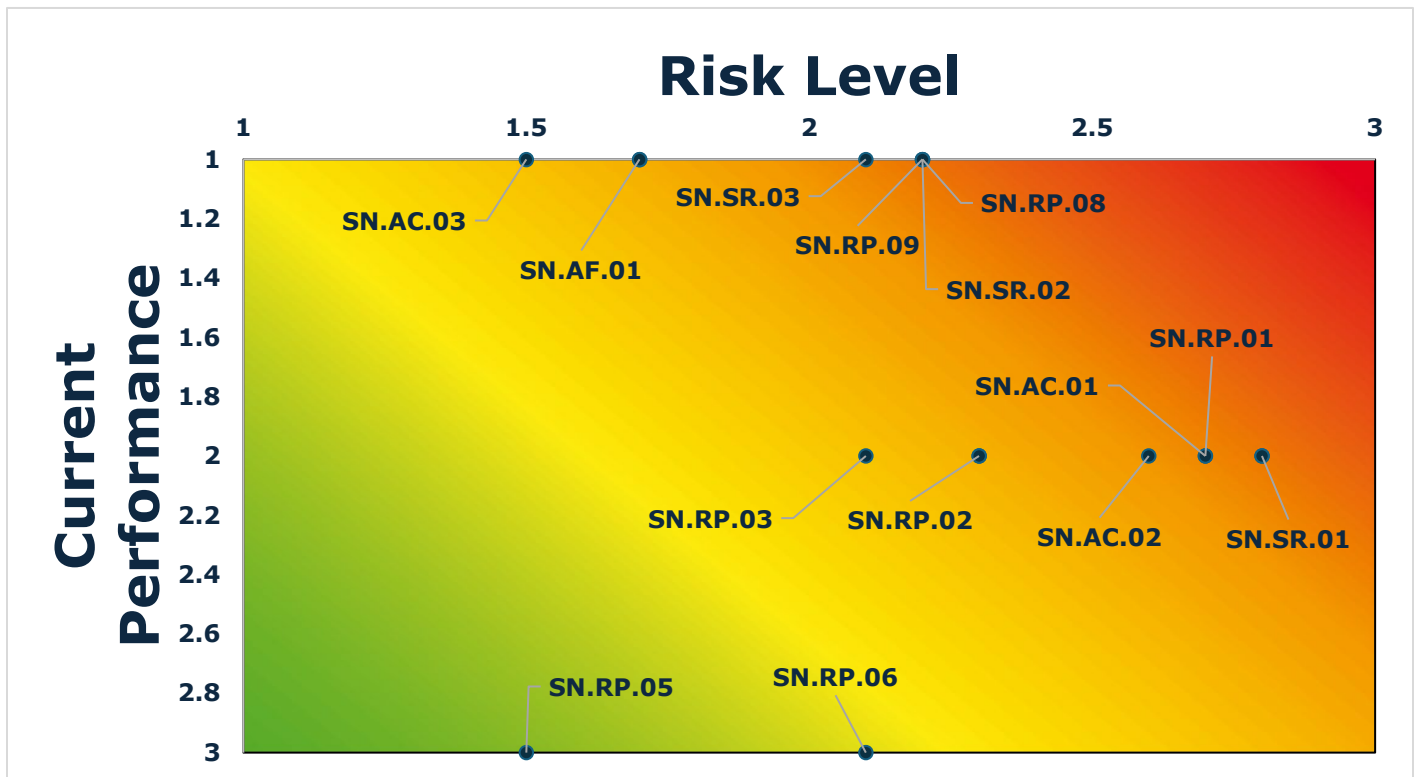
Sewer Network – Levels of Service – Risk Heat Map – Needs Data:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Percent of the Municipal stormwater management system resilient to a 5-year storm.	2.0	2.0	2.0	2.5	2.0

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is presented below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for the Sewer Network. The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

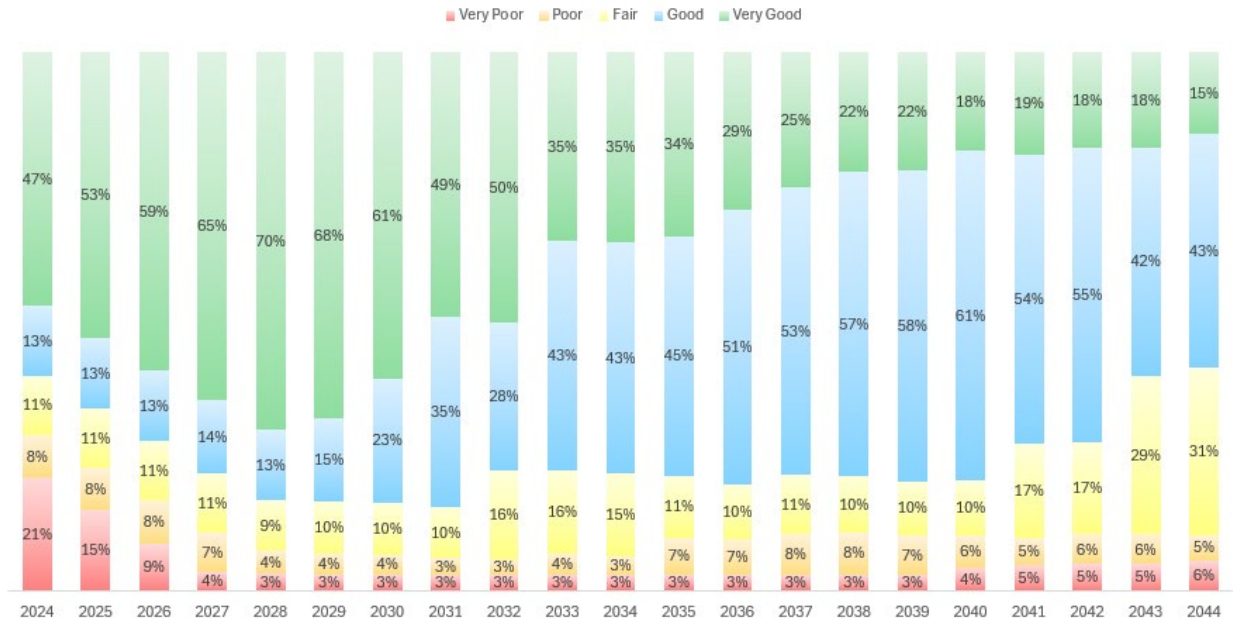
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand. The Municipality is also dealing with a combined sewer network in the urban area and while it is a priority to separate the combined network, it is difficult to predict the cost of separating the combined network and will take decades to reach a fully separated sewer system.

Scenario 1: Current Funding

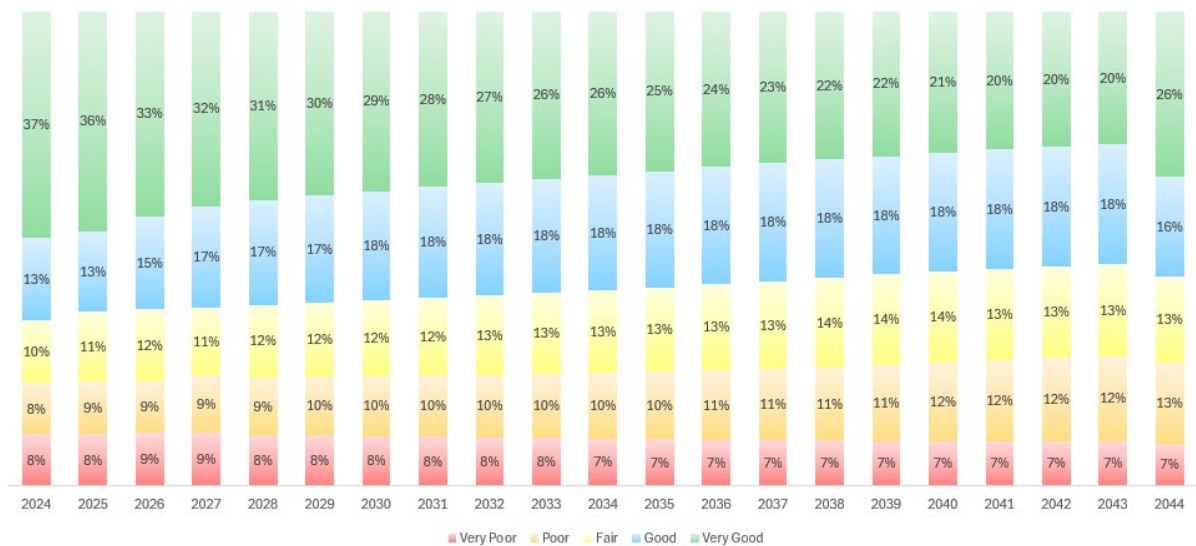
This scenario illustrates asset performance based on current capital and operating funding levels of \$14.8 million over a 20-year forecast and any funding not spent is carried forward to the next year. The Municipality should expect a decrease in condition over the 20-year period as assets in Very Good condition decrease from 47% to 15% but assets in Very Poor condition also decreases from 21% to 6%. The majority of assets move from Very Good to Good and Fair over the 20-year period.



Scenario 2: Maintain Current Performance

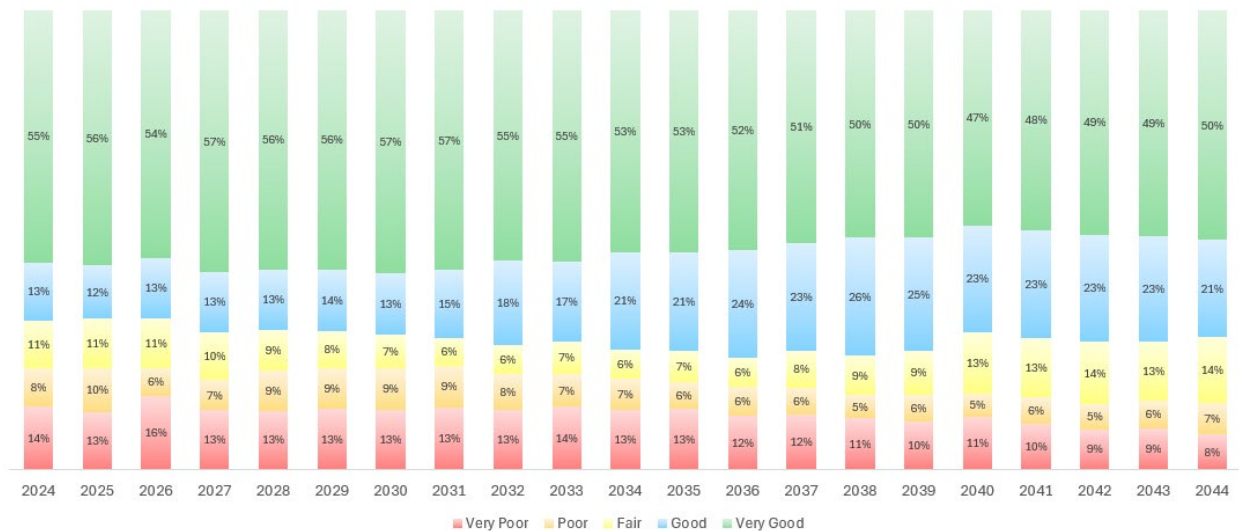
This scenario illustrates asset performance based on the constraint to maintain the Sewer Network in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality an average of \$16.2 million annually.

Assets in Very Good condition decreases from 37% to 26% as assets in Very Poor condition decrease from 8% to 7% over the 20-year period. The majority of assets remain in Fair or better condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for the Sewer Network over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the Sewer Network category, the percentage of assets in Very Good condition decreases from 55% to 50% as assets in Very Poor Condition decreases from 14% to 8%. This would cost the Municipality on average \$16 million. The majority of assets in the Sewer Network category move from Very Good condition (55%) to Very Good and Good condition (71%) over the 20-year period.



5.2.8 Recommendations

Lifecycle Management Strategies

Leamington should continue mainline flushing on both the storm and sanitary networks. The Municipality should consider trenchless re-lining as a possible lifecycle activity for separated storm and sanitary mains. This methodology is not viable for the combined portions of the network. CCTV inspections are currently completed on a 5-year cycle based on 2024 AMP recommendations. It is recommended that Leamington continues to evaluate the efficacy of their lifecycle management strategies at regular intervals to determine the impact on cost, condition, and risk.

Risk Management Strategies

The Municipality should implement risk-based decision-making as part of their asset management planning and budgeting process. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies. These risk models should be reviewed on a regular basis and adjusted accordingly to an evolving understanding of the probability and consequence of failure. Replacement costing and estimated useful lives should also be updated on a cyclical basis. The recommended cycle based on industry best practices for the Sewer Network is every 2 years.

Levels of Service

The Municipality should continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning. Leamington should continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

5.3 Pollution Control Centre (PCC)

The Municipality is responsible for the operation and maintenance of the Leamington Pollution Control Centre (PCC) and the connecting network of Municipal storm and sanitary pump stations.

The state of infrastructure for the Pollution Control Centre (PCC) is summarized in the following table.

Replacement Cost	Condition	Financial Capacity	
\$140,510,000	62.96% (Good)	Annual Requirement:	\$3,779,000
		Funding Available:	\$2,479,000
		Annual Deficit:	\$1,300,000

5.3.1 Levels of Service Statement

The Municipality of Leamington is dedicated to providing a high level of service for its sewer network, ensuring that citizens have access to reliable and efficient wastewater management. The Municipality is committed to maintaining the sewer network to ensure that the Municipal sanitary system and the Municipal stormwater system are accessible to the community in sufficient capacity, meeting the demands of the population.

The Pollution Control Centre plays a critical role in ensuring the efficiency and effectiveness of the combined sanitary and storm sewers. The center is in good condition, with minimal unplanned service interruptions due to backups and effluent violations. The center provides several redundancies to manage overflows and sanitary and stormwater treatment, ensuring that the sewer network operates efficiently and effectively.

Furthermore, the Municipality is committed to providing these services in an affordable manner, recognizing the necessary expense of maintaining and upgrading the Pollution Control Centre. The Municipality is dedicated to ensuring that the cost of this service is kept as low as possible, while still providing the necessary level of maintenance and repairs.

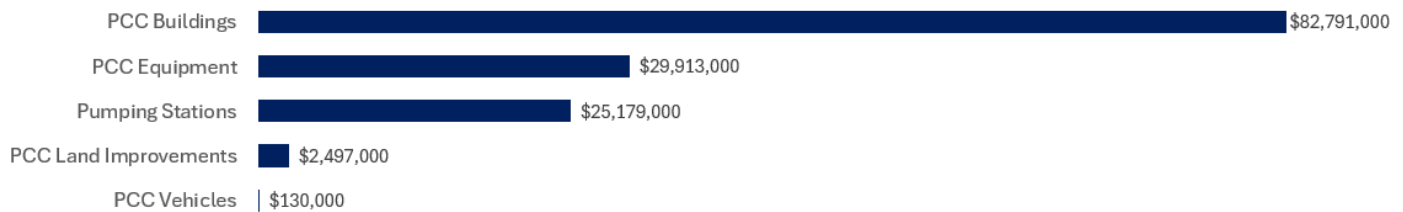
In summary, the Municipality of Leamington is committed to providing a high level of service for the sewer network, including the provision of reliable and efficient wastewater management, a well-maintained Pollution Control Centre, and affordable service. The Municipality recognizes the importance of maintaining these critical assets to ensure the safety and well-being of citizens and visitors.

5.3.2 Asset Inventory & Costs

The table below illustrates the quantity, replacement cost, and annual capital requirements of each AMP segment in Leamington's PCC AMP category.

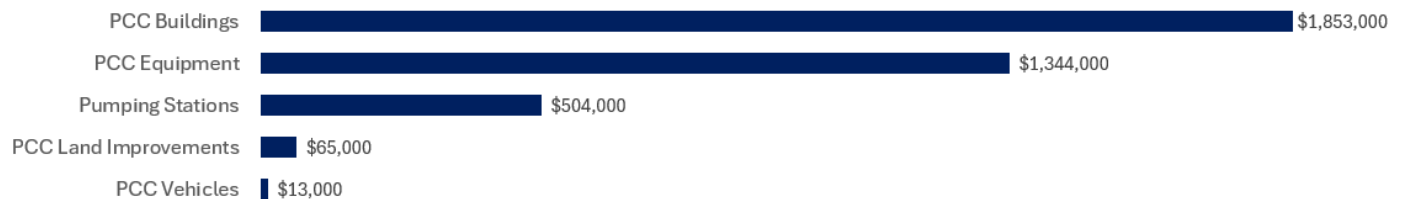
AMP Segment	Quantity (Components)	Replacement Cost	Annual Capital Requirement
PCC Buildings	13 (62)	\$82,791,000	\$1,853,000
PCC Equipment	224	\$29,913,000	\$1,344,000
PCC Land Improvements	11	\$2,497,000	\$65,000
PCC Vehicles	3	\$130,000	\$13,000
Pumping Stations	17 (11)	\$25,179,000	\$504,000
Total		\$140,510,000	\$3,779,000

Replacement Cost \$140,510,000



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

Average Annual Capital Requirements \$3,779,000



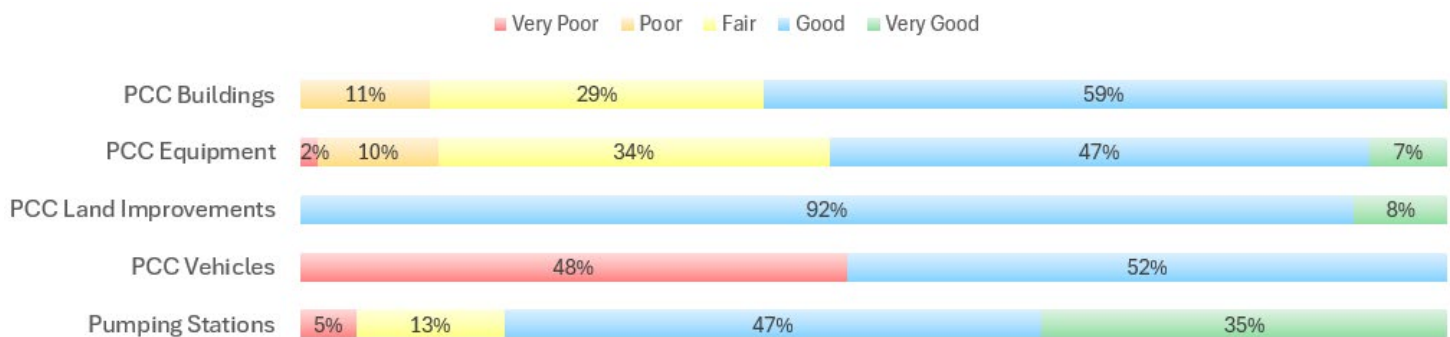
The average annual capital requirements are the amount the Municipality should be allocating annually to each PCC segment to meet replacement needs as they occur, prevent infrastructure backlogs, and achieve long-term financial sustainability. The graph above does not include associated operations and maintenance costs.

5.3.3 Asset Data: Useful Life, Age & Condition

The table below illustrates the current average condition, average age, and EUL for each AMP segment. The Average Condition (%) is a weighted average based on replacement cost.

AMP Segment	EUL (Years)	Average Age (Years)	Average Condition
PCC Buildings	15 – 50	12.50	61.36% (Good)
PCC Equipment	4 – 50	7.92	57.63% (Fair)
PCC Land Improvements	20 – 60	8.75	72.88% (Good)
PCC Vehicles	10	10.50	43.31% (Fair)
Pumping Stations	10 – 50	16.33	71.72% (Good)
Average		9.58	62.96% (Good)

The graph below illustrates the average condition for each AMP segment on a Very Poor to Very Good scale.



To ensure Leamington's PCC continues to provide an acceptable level of service, the Municipality 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 are required to increase the overall condition of the PCC category.

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

Current Approach to Condition Assessment

Condition data is a critical piece to asset management planning. Up to date and reliable condition information allows decision makers to determine the optimal timing of activities and management of assets. The Municipality's current approach is outlined below:

- PCC buildings undergo monthly health and safety inspections and annual roof inspections. HVAC inspections are also performed on a bi-annual basis.
- A third-party contractor is hired to calibrate instrumentation where necessary and to perform electrical inspections on all motor control centers on a yearly basis.
- Staff perform weekly inspections on their pumping stations to test alarms and ensure pumps are operational.
- PCC Vehicles and Equipment are inspected on a regular basis based on their performance, condition, and criticality. Annual CVOR inspections are performed on vehicles.

The following table illustrates the rating criteria used to determine the current condition of Leamington's Pollution Control Centre and forecast capital requirements in this AMP:

Condition	Rating
Very Good	80-100
Good	60-80
Fair	40-60
Poor	20-40
Very Poor	0-20

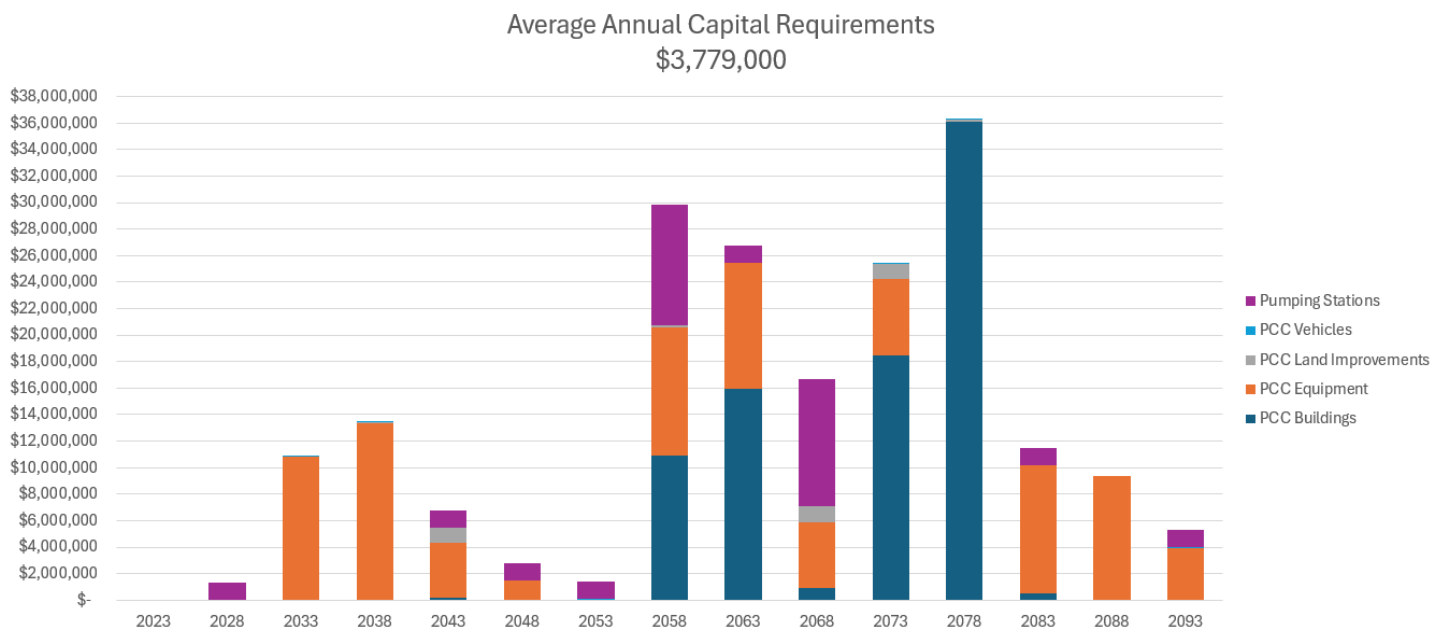
5.3.4 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure Leamington's assets are performing as expected and meeting the needs of the community, it is important to establish lifecycle management strategies to proactively manage asset deterioration.

Event Class	Description
Maintenance	Maintenance programs are in place for all PCC equipment based on their operations and maintenance manuals. These are managed through a computerized maintenance management system (CMMS).
	Various inspections are completed by internal resources as outlined below: -Plant inspections, including all process areas, are completed daily and equipment is monitored through SCADA for any alarm conditions. -Pump stations are inspected weekly and monitored through SCADA for any alarm conditions. -Buildings on the PCC property are inspected monthly and include building lighting components. -Daily vehicle checks occur on PCC vehicles prior to use. Regular oil changes are performed through the public works department. -PCC has implemented a program to drain primary and secondary clarifiers and aeration tanks on alternating years to perform an assessment on the structure and associated equipment. Contractors/equipment suppliers are engaged to assist as required.
	Other maintenance activities completed by external contractors and/or suppliers are outlined below: -HVAC inspections on all PCC buildings are completed semi-annually. -Roof inspections are completed annually in the Fall, and identified deficiencies are planned for completion the following year. -Electrical inspections are completed annually on control panels, transformers, and hydro-feeds for the whole facility including pump stations. -Pumping stations are cleaned out annually, and more frequent cleanouts of problematic pumping stations that are prone to build up of grease are scheduled as required. - Generator inspections are completed semi-annually and include mechanical and electrical components and load bank test for generators at the treatment plant and pump stations. - Fixed ladder inspections and lifting apparatuses are inspected annually.
Rehabilitation / Replacement	Equipment is assessed nearing the end of its useful life and/or at time of failure to determine if rehabilitation or replacement is required. If it is determined that rehabilitation is possible and cost effective, rehabilitation activities are completed before doing a full replacement.
	In the absence of mid-lifecycle rehabilitative events, most PCC assets are maintained with the goal of full replacement once it reaches its end-of-life
	PCC vehicles are typically replaced after 10-15 years and will be considered for repurposing depending on their condition.
	Replacement activities are identified based on an analysis of asset age and visual inspections.

5.3.5 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year Leamington should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 70 years. This projection ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments.

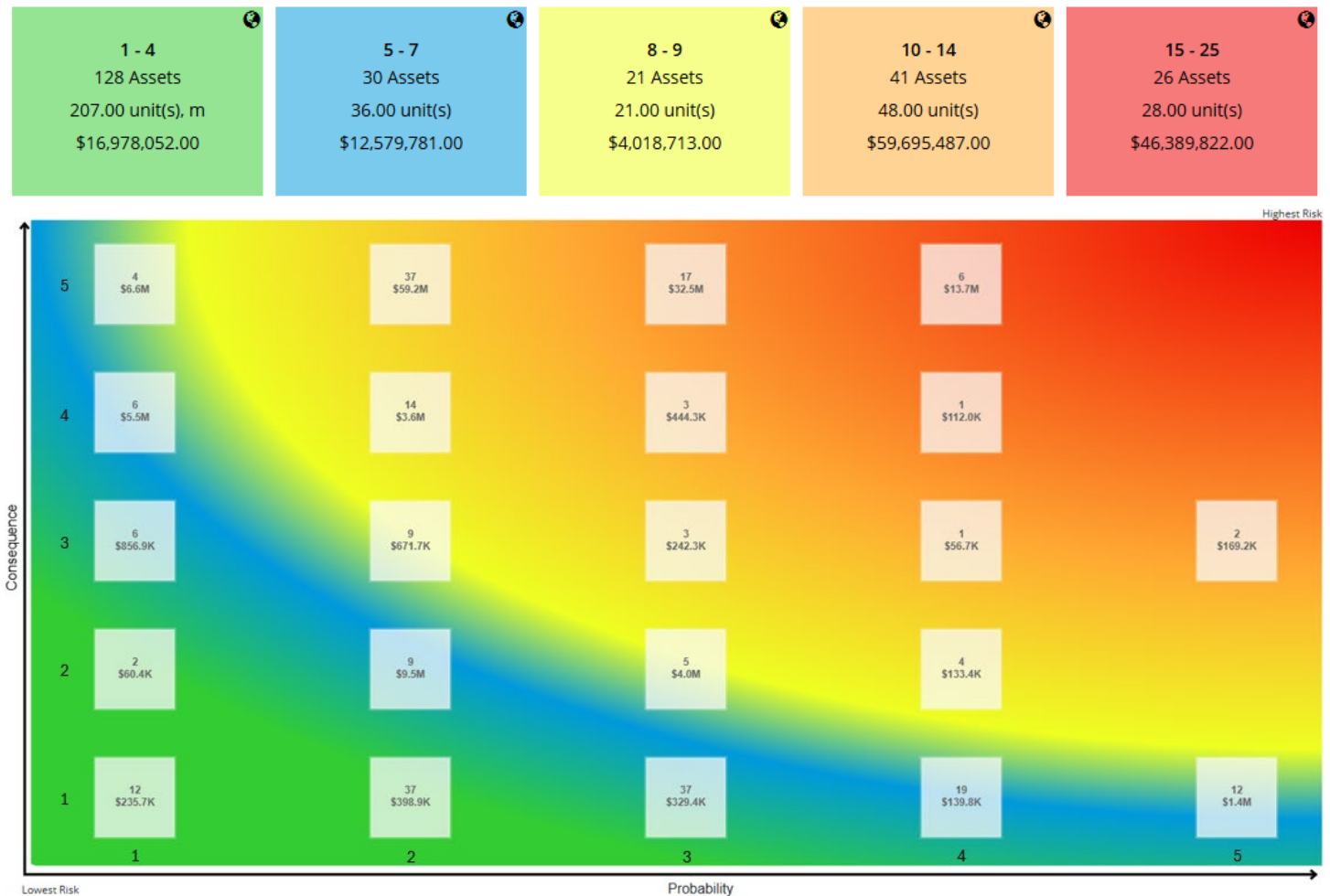


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain an acceptable level of service can be found in Appendix A.

5.3.6 Risk & Criticality

Risk Matrix

The following risk matrix illustrates the relationship between the probability of failure and the consequence of failure for all assets in the PCC AMP category based on 2023 inventory data. The risk rating ranges include asset count, quantity, and replacement cost of assets within each range. See Appendix C for criteria used to determine the risk rating of each asset.



Risks to Current Asset Management Strategies

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

Risk Type		Description
	Asset Data Confidence	It is difficult to anticipate failures for PCC equipment, as they can unexpectedly fail without warning. It is also difficult to complete condition assessments on PCC assets as there are so many, and they are not connected to the Asset Manager software. More accurate condition information in Citywide is required for PCC assets.
	Lifecycle Management Strategies	PCC machinery and equipment utilizes information from operators and consultants and/or suppliers to determine the best strategies to employ. PCC also utilizes a work order system for preventative maintenance required on equipment.
	Organizational Cognizance / Capacity	The Municipality currently employs 6 wastewater operators, 1 maintenance mechanic, 1 lab technician, 1 environmental services technician, 1 supervisor and 1 manager to oversee the PCC network. This is sufficient staff to maintain the PCC network, and staff have all the necessary knowledge of the system.
	Infrastructure Design / Installation	The Municipality has confidence in infrastructure/equipment design but at times, specific project designs are problematic and municipal staff must spend time and resources correcting deficiencies.
	Aging Infrastructure	The Pollution Control Center has been updated in stages, with the oldest area of the plant being approximately 20 years old. This allows asset age to be well spaced out. In the next 10-15 year, the Municipality is likely to see some aging infrastructure at PCC, but it is not currently an issue.
	Climate Change & Extreme Weather Events	Heavy rainfall events pose a risk to PCC equipment as roughly 35% of the sewer system is comprised of combined sewers. This results in extra pressure on the treatment facility, as the heavy rain flows must be processed through the treatment plant.
	Growth	The PCC is currently undertaking a Wastewater Masterplan Study that incorporates growth in the residential, commercial, industrial and greenhouse sectors over the next 20 years. The masterplan considers new developments, expanding the service area and infilling.

Risk Type		Description
	Infrastructure Reinvestment	Infrastructure re-investment is not considered a significant risk at this time.
	Other	Compliance poses a risk to PCC as there is a local food processing facility that sends wastewater directly to the municipal wastewater treatment plant. There is a risk in receiving this directly at the plant, as it is very volatile; levels can be normal one day and the next they are not. The plant has instrumentation and procedures in place to try and alert staff of spills/high loadings, but they are not always followed/effective. Additionally, there is a significant increase in wastewater received from the food processing facility during tomato season, which lasts for approximately 8 weeks. During this time, the plant runs at approximately 75% capacity. The design of the plant must be based on the capacity at this time to accommodate for the 8-week tomato season. Options to better manage the high flows and loadings from the food processing facility is under review as part of the masterplan study.

5.3.7 Levels of Service

The following tables illustrate Leamington's level of service (LOS) for the PCC AMP category. These metrics include the community and technical levels of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the Municipality has incorporated for this AMP.

Community Levels of Service

The following tables illustrate the qualitative descriptions that determine the community levels of service provided by the PCC AMP category.

Pollution Control Centre (PCC) – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Qualitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.RP.04	Description of the effluent that is discharged from sewage treatment plants in the Municipal wastewater system	Acceptable The Municipality of Leamington meets the acceptable standards for quality and safety of the effluent discharged from the Pollution Control Centre.	N/A	Effluent refers to water pollution that is discharged from a wastewater treatment plant and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for Municipal wastewater treatment plants. The Leamington PCC is a conventional activated sludge plant that provides ultraviolet disinfection prior to discharging treated effluent to Lake Erie.	Staff Input (2024)	N/A

Pollution Control Centre (PCC) – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Qualitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.RP.04	Description of the effluent that is discharged from sewage treatment plants in the Municipal wastewater system	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Technical Levels of Service

The following tables illustrate the quantitative descriptions that determine the technical levels of service provided by the PCC AMP category.

Pollution Control Centre (PCC) – Reliability & Performance Value – Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.RP.07	Number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the Municipal wastewater system	Excellent 0	0	N/A	AMP (2025)	N/A
SN.RP.10	Average condition of PCC assets	Acceptable Between 60% - 80%	62.96%	The Municipality can calculate this in Citywide	Citywide (2024)	N/A
SN.RP.11	% of PCC assets in poor or very poor condition	Acceptable Between 10% - 25%	11.98%	The Municipality can calculate this in Citywide	Citywide (2024)	N/A

Pollution Control Centre (PCC) – Reliability & Performance Value – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.RP.07	Number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the Municipal wastewater system	O. Reg. 588/17	-Corporate LOS Spreadsheet	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.10	Average condition of PCC assets	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.
SN.RP.11	% of PCC assets in poor or very poor condition	Recommendation	-Citywide AM	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Pollution Control Centre (PCC) – Affordability Value - Analysis:

Performance Description & ID		LOS Levels	Performance Measurement			
ID	Quantitative Performance Indicator	Needs Improvement Acceptable Excellent	Current Score (If Applicable)	Current Score Description	Current Score Source	Benchmark
SN.AF.02	Annual sustainable capital reinvestment/required capital reinvestment rate	Needs Improvement Less than 70%	66%	This is calculated by comparing the available funding from sustainable sources of revenues to the annual lifecycle requirements.	Staff Input & Citywide (2024)	N/A

Pollution Control Centre (PCC) – Affordability – Reporting:

Performance Description & ID		LOS Driver	Data Repository	Reporting
ID	Quantitative Performance Indicator	O. Reg. or Recommendation	Input Systems & Documentation	Process & Methodology
SN.AF.02	Annual sustainable capital reinvestment/required capital reinvestment rate	Recommendation	Citywide (2024)	By the Finance Department to Council through the AMP with regular updates and formal review every 5 years after 2025.

Levels of Service Ranking

When evaluating the performance level of a system, it is essential to consider the associated risks of not meeting an acceptable level of service. In doing so, it becomes possible to prioritize efforts to improve performance in areas where the risks are highest. The tables below will segment performance levels into four categories: Excellent, Acceptable, Needs Improvement, and Needs Data. The risk analysis will consider a range of factors, including environmental, financial, operational, health & safety, and community satisfaction impacts. Staff input was a critical component in identifying the most significant risks and opportunities for improvement, helping to ensure that efforts are focused on the areas that will have the most significant impact on overall performance. By comparing performance levels against the associated risks, it becomes possible to develop a targeted and effective approach to improving system performance.

PCC – Levels of Service – Risk Heat Map – Excellent:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the Municipal wastewater system	2.0	2.5	2.0	2.5	2.5

PCC – Levels of Service – Risk Heat Map – Acceptable:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
% of PCC assets in poor or worst condition	2.5	2.5	2.5	2.0	2.5
Average condition of PCC assets	2.5	2.5	2.0	2.0	2.5
Description of the effluent that is discharged from sewage treatment plants in the Municipal wastewater system	2.5	3.0	2.5	3.0	3.0

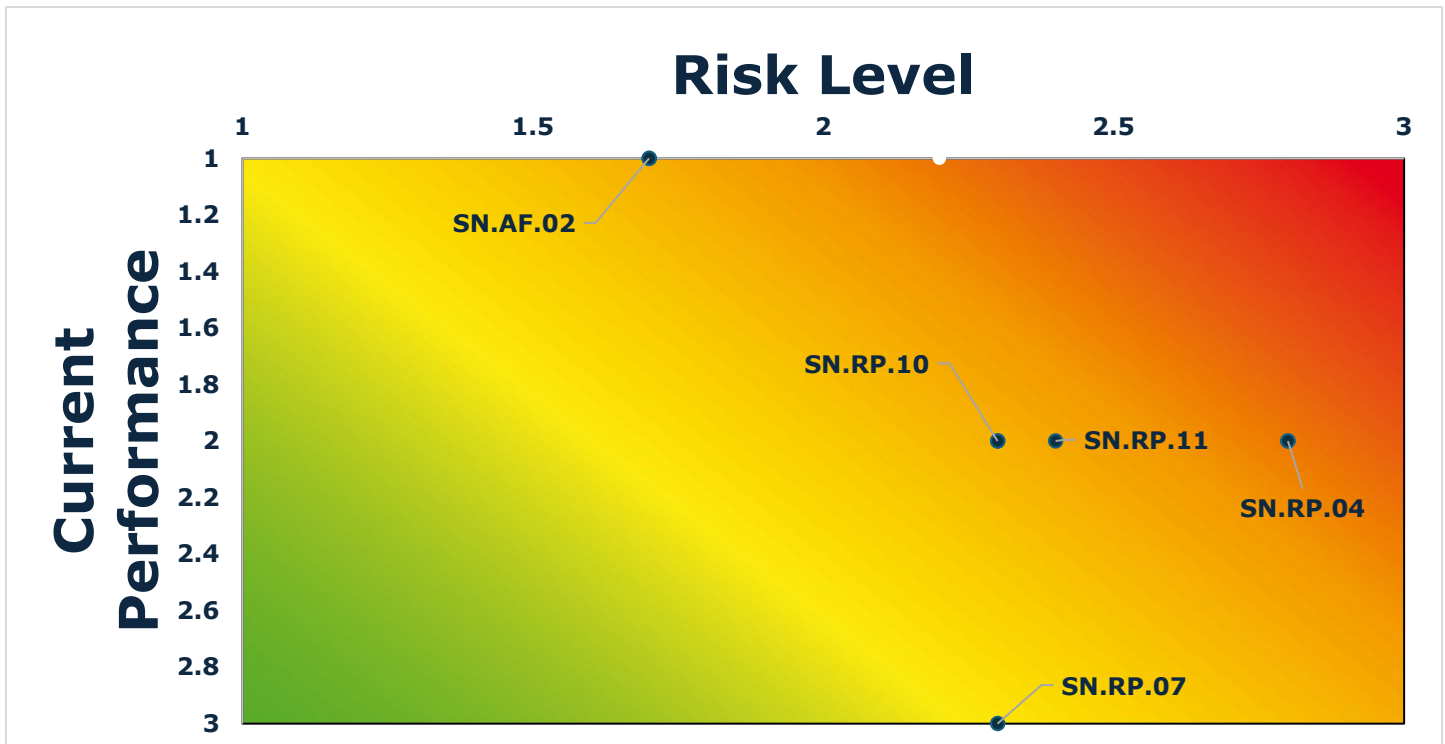
PCC – Levels of Service – Risk Heat Map – Needs Improvement:

Performance Indicator	Average of Financial Impacts	Average of Environmental Impacts	Average of Operational Impacts	Average of Community Satisfaction Impacts	Average of Health & Safety Impacts
Annual sustainable capital reinvestment rate/required rate	2.0	1.5	2.0	1.5	1.5

The risk score could be plotted against the performance level achieved in each service area. For example, if the risk score is high, and the performance level achieved is Needs Improvement (score: 1), then it indicates that immediate attention is required to address the issues and prevent potential failures. Similarly, if the risk score is low, and the performance level achieved is Excellent (score: 3), then it indicates that the service is functioning well, and there is a low risk of failure.

The risk score could also be used to prioritize the performance areas based on the potential impact of failure. For instance, a performance area with a high-risk score and a low-performance level achieved would be given a higher priority than an area with a low-risk score and an acceptable performance level achieved.

Overall, plotting the risk score against the performance level achieved in each performance area would help identify areas that require immediate attention and enable prioritization of efforts to prevent potential failures. A visualization of the performance levels versus risk is presented below:



Funding Lifecycle Activities

The Municipality uses the lifecycle strategies listed above to plan future operational and capital expenditures for the Pollution Control Centre (PCC). The scenarios below provide a comprehensive framework for planning and managing infrastructure needs, ensuring the Municipality meets demands of current services and future growth.

Through consultation and internal staff expertise the Municipality has developed the levels of service framework identifying preventative maintenance schedules, rehabilitation activities, and replacement or disposal plans.

The following scenarios only include renewal, rehabilitation, and replacement activities. These lifecycle activities ensure the state of infrastructure remains at an acceptable level and provides the necessary services safely to the community. For the purposes of this AMP, activities and their costs are assumed to be acceptable and meet current needs.

The scenarios can be summarized as follows:

Scenario 1 – Current Funding - Assumes the current capital budget (reserves, deferred revenue, grants, and sundry revenue) and operating budget related to asset maintenance are sustainable for the 20-year forecast period and will be applied to lifecycle activities and asset replacement on an annual basis as required.

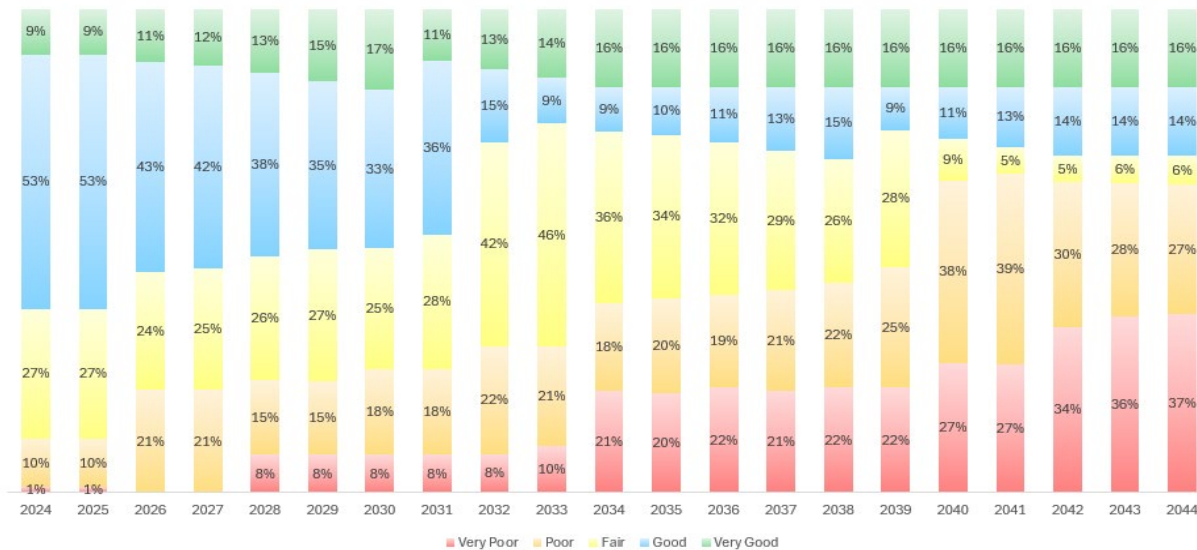
Scenario 2 – Maintain Current Performance - Assumes the current distribution of very poor asset conditions is acceptable and will remain consistent over the 20-year forecast period.

Scenario 3 – Infrastructure Needs Per Lifecycle Activities - Assumes there are no financial constraints and all lifecycle strategies (crack sealing, mill and pave, etc.) will be completed prior to asset replacement at the end of the asset's life. Lifecycle activities are built in for roads and bridges and culverts (based on 2023 OSIM recommended repairs and rehabilitation).

The current levels of service outlined in Scenario 1: Current Funding are also the Municipality's proposed levels of service due to funding and internal constraints. While budgets have increased, the Municipality is unable to keep up with project demands and will need to expand to manage growth and future demand.

Scenario 1: Current Funding

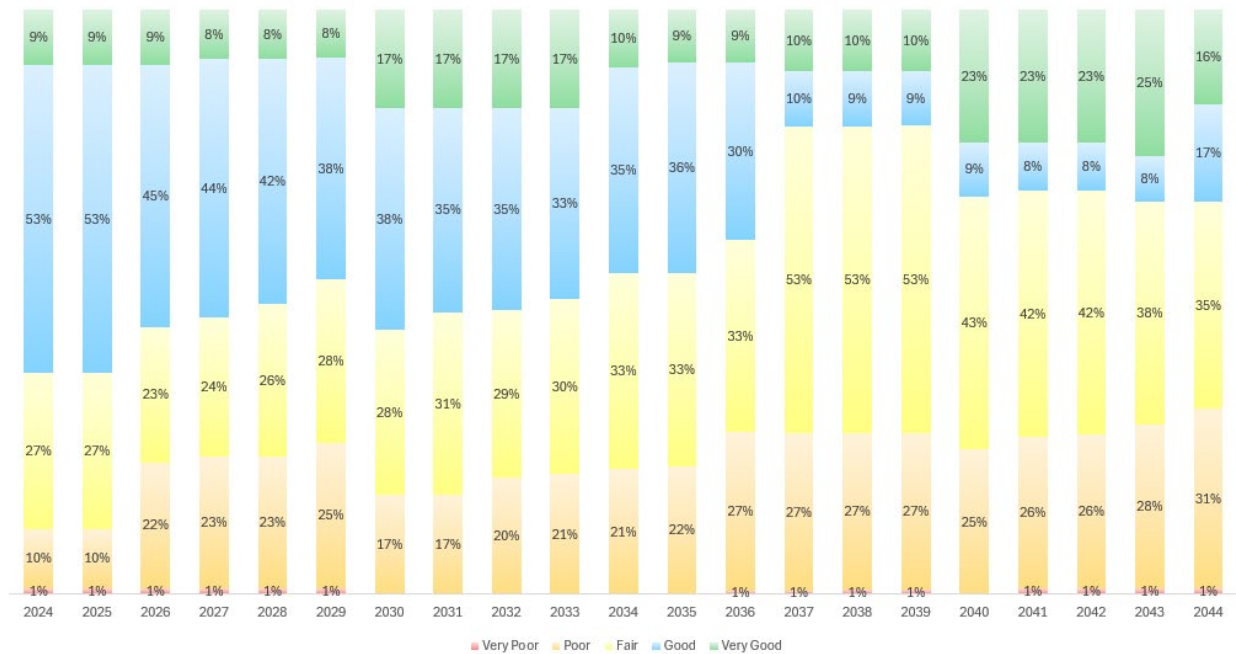
This scenario illustrates asset performance based on current capital and operating funding levels of \$5 million over a 20-year forecast and any funding not spent is carried forward to the next year. The Municipality should expect a decline in overall condition over the 20-year period but assets in Very Good condition increase from 9% to 16% and assets in Very Poor condition increase from 1% to 37%. The majority of assets move from Fair or better condition to Very Poor and Poor over the 20-year period.



Scenario 2: Maintain Current Performance

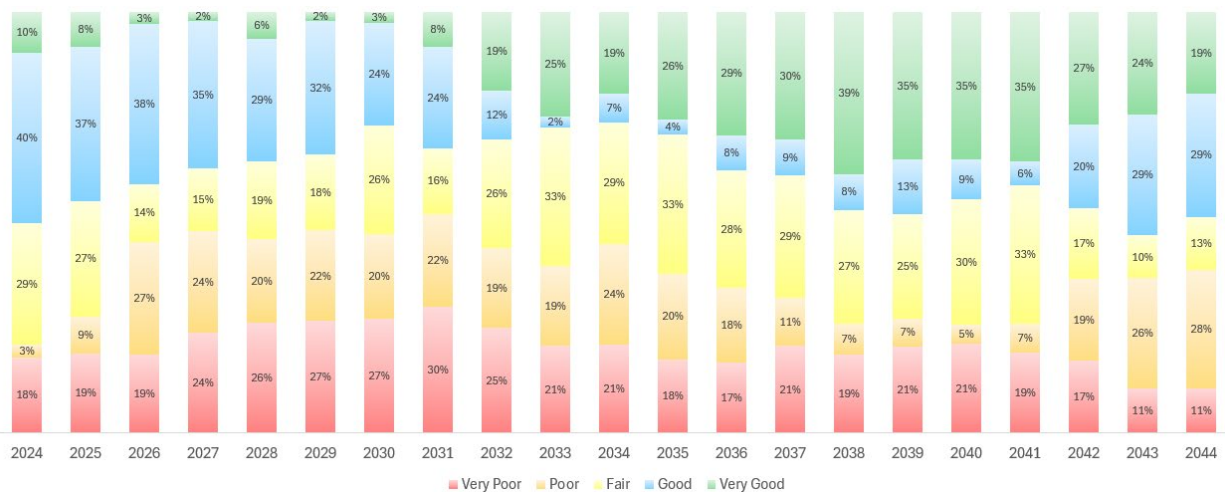
This scenario illustrates asset performance based on the constraint to maintain the PCC in the same condition over the 20-year forecast. This projection attempts to maintain the overall percentage of assets in Very Poor condition in 2024 out to 2044 and would cost the Municipality an average of \$7.5 million annually.

Assets in Very Good condition increase from 9% to 16% as assets in Very Poor condition remains constant around 1% over the 20-year period. The majority of assets move from Good to Fair condition over the 20-year period.



Scenario 3: Infrastructure Needs Per Lifecycle Activities

This scenario illustrates the lifecycle strategies previously outlined for the PCC over the 20-year forecast. If the Municipality carries out every preventative maintenance, rehabilitation, and replacement activity across the PCC category, the percentage of assets in Very Good condition increases from 10% to 19% as assets in Very Poor Condition decreases from 18% to 11%. This would cost the Municipality on average \$5.3 million annually. The majority of assets in the PCC category move from Very Good and Good condition (50%) to Very Good, Good, and Fair condition (61%) over the 20-year period.



5.3.8 Recommendations

Lifecycle Management Strategies

Leamington should continue to complete internal equipment, building and pump stations inspections on a regular cycle, documenting all deficiencies. These assessments will aid in the development of a 5 – 10 year proactive replacement / rehabilitation plan. The Municipality should also continue to update condition assessments and replacement costing on a regular basis. The recommended cycle based on industry best practices is every 5 years.

Risk Management Strategies

Leamington should implement risk-based decision-making as part of their asset management planning and budgeting processes. This should include regular review of high-risk assets to determine appropriate risk mitigation strategies. These risk models should be reviewed on a regular basis and adjusted according to an evolving understanding of the probability and consequence of asset failure.

Levels of Service

The Municipality should continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that Leamington believes to provide meaningful and reliable inputs into asset management planning. Leamington should continue to refine proposed levels of service as per O. Reg. 588/17 and close any gaps identified between current and proposed levels of service.

Work towards operationalizing levels of service to make informed decisions by utilizing the developed levels of service framework. The following 8 steps are part of the Proposed Levels of Service Action Plan:

- (1) Identify stakeholders
- (2) Define the service levels alternatives
- (3) Develop financial forecast scenarios
- (4) Engage the public
- (5) Make informed and calculated decisions
- (6) Develop process maps
- (7) Implement the action plan
- (8) Communicate outcomes

6 Impacts of Growth

Key Insights

- Understanding the key drivers and growth and demand will allow Leamington to plan for new infrastructure more effectively and upgrade or dispose of existing infrastructure.
- Rapid population growth is expected in Leamington and the surrounding area.
- The costs of growth should be considered in long-term funding strategies that are designed to maintain an acceptable level of service.

6.1 Description of Growth Assumptions

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

6.1.1 Leamington Strategic Plan

The Municipality of Leamington adopted the 20-Year Vision Strategic Plan 2015-2035 in 2015. Following some Strategic Planning sessions in January 2019, the Municipality adopted the Strategic Vision Update 2019-2022 and again for 2023-2026. All documents form the framework for Municipal policies, direction, work plans, and allocations of resources.

As defined by the Strategic Plans, the Municipality of Leamington continues to experience rapid development and growth. Much of the growth is driven by investment in the greenhouse and the cannabis industries. The benefits of growth include new employment and growing diversity in the community.

The 20-Year Vision Strategic Plan identifies a key objective as sector analysis which will help determine Leamington's top projects that will facilitate and sustain growth. The Strategic Vision Update further elaborates that the Municipality remains focused on the infrastructure it needs, delivering the services residents expect and promoting growth in the local economy. The Municipality plans to drive economic development through investment in infrastructure, creating a future-ready community.

6.1.2 Leamington Official Plan (2008)

The Municipality is currently undertaking a Review of the Official Plan and has shared the 2021 draft Official Plan with the public for comment. The new plan will replace the current Official Plan which was adopted in 2008. Since its approval in February 2008, nine OPAs have been made including the addition of a new CIP Schedule, site-specific exemptions, redefinitions, and boarding house policies with the most recent amendment occurring in May 2023. The Official Plan is viewed as a statement of goals, objectives, and policies to guide future land use, physical development, and growth.

Growth projections in the new document are based on the 2011 Essex County Official Plan ⁵. The following table summarizes population projections in a high-growth scenario.

	2006	2011	2016	2021	2026	2031
Population	28,833	29,300	30,140	31,410	32,560	33,490
Households	9,820	10,040	10,630	11,470	12,260	12,980

⁵At the time of developing this AMP, the most recent census data available is from 2021. The 2021 population for Leamington is stated as 29,680 which does not meet the projections made in 2011.

Based on these figures, 2006 to 2031 employment projections were also defined. In a high-growth scenario, employment is expected to increase by 26.8% from 12,460 to 15,800. The expected growth is likely to emerge in the sectors of agri-business, tourism, and manufacturing.

As part of the Municipality's Official Plan Review, the public was engaged through online surveys to identify themes of importance to citizens living in Leamington (57% of participants), living and working in Leamington (33% of participants), and solely working in Leamington (10% of participants).

The results of the surveys were grouped into 6 key themes summarized in the table below in order of importance:

Growth Planning	Municipal Services	How police and fire can be better represented in the OP.
	Municipality Co-Operation	How the Municipality can best support development.
Housing	Affordable Housing	How it can be best integrated within the community
	Homelessness	How the Municipality can create overnight shelters, connect Municipal services, and develop non-profit housing.
	Land Use Policies	Exploring new policies for short-term rentals (including shoreline recreational holiday/vacation accommodations), or large estate properties used for rented events.

Healthy Communities	Public Transportation	How can the Municipality better support connectivity to Windsor including the Windsor International Airport (YQG) or VIA Rail Windsor Train Station.
	Active Transportation	The need to pave and extend existing bike lanes.
	Service Infrastructure	How can the Municipality support mental health and safe drug use.
	Municipal Cleanliness	How can the Municipality keep streets clean year-round.
	Municipal Beautification	How can the Municipality use infrastructure upgrades to create a vibrant and aesthetically pleasing Municipality.
	Safety	How can the Municipality consider the needs of homeless populations.
Agriculture	Temporary Foreign Workers	How can the Municipality support their needs within the Municipality. Support more accessory buildings on Agricultural Lands
	Lot Creation	How it can be used to promote aging in place for growing families.
Environment & Climate Change	Tree Canopies	How they can be expanded and maintained across the Municipality.
	Natural Heritage	How the Municipality can conserve its biodiversity.
Cultural Heritage	Cultural & Community Enrichment	How this can be incorporated into the further development and redevelopment of the Municipality to showcase the rich culture that exists throughout the community.

Municipal Council: Issues & Opportunities

Growth Planning

- A review of the existing industrial areas is needed. Specific areas that were noted include Highway 77 North and east of Mersea Road 5. Concerns were raised about the compatibility of historical industrial sites and the increase in greenhouse development.
- Sufficient servicing will be a challenge to support further development to the next planning horizon.
- A review of fragmented areas in the settlement area is needed, specifically around Johnson Avenue to further ensure land use compatibility in this area.
- Southwest Leamington is an area Council has defined as an area for growth and development. Council has approved plans to grow this area of the Municipality with infrastructure investment and housing.
- Urban sprawl is concerning, especially regarding the strain on municipal servicing. The rise of Electric Vehicles (EVs) may further exacerbate the municipality's servicing needs but is something to consider in new development in the context of charging stations.
- Issues with equity in the tax base, may pose challenges for the Municipality's growth into the next planning horizon.
- Growth in general may be a challenge due to community pushback and a resistance to change.
- Successive policy frameworks, reviews, and revisions introduced by the province have placed considerable demands on municipal capacity and resources.

Housing

- Housing affordability was noted as a recurring concern, especially for younger generations.
- Small-Scale Commercial Development and "home grown" businesses are considered an asset, and something that is needed to promote Leamington's authenticity.
- Mixing residential use in commercial areas, like the Marina area, should be considered.
- There was an interest in increasing housing density, as well as less restrictive policies for surplus farm dwellings in rural areas.
- Clear policy direction for short-term rentals is needed, noting the importance to keep them small-scale.
- Consider the reduction of minimum frontage in areas to accommodate higher density.

- There is interest in policies to allow for flexibility in housing types and affordability.
- There is an opportunity to explore higher density in Blytheswood.

Healthy Communities

- Conversations focused on the Culture and Community that exist in Leamington, and the importance of maintaining community values and fostering tourism and growth.
- Concerns related to housing for temporary foreign workers was highlighted, including issues surrounding rental properties, and boarding houses.
- It was shared that there is opportunity for waterfront development to support a mix of uses, while supporting the continued enhancement of the area through the Waterfront Master Plan.
- Tourism should be leveraged through waterfront development, following a "build it and they will come" approach.
- Uptown Leamington should be revisited to support revitalization including grants targeting façade improvements.
- Recreation, green spaces, and fostering a strong sense of community is important. There are opportunities to leverage Leamington's existing amenities, while creating opportunities for more community services and facilities through the new planning horizon.
- Parking was noted as a challenge. Policies should be included to create a greater availability of parking in areas of interest.
- Quality of Life is an essential consideration when developing new policies for the OP.
- Lessons learned from the Erie Shores land use pattern should be considered when ensuring land use compatibility elsewhere in the community.
- East of the existing Dock area, policies to support a mix of uses should be considered to allow mixed-use development and shops along the promenade.

Agriculture

- Farming and Land Use, and the consideration for updates to policies related to farm severances while preserving agricultural lands should be considered.
- Policies need to be updated to reflect a changing agricultural landscape, with less restrictions to allow for agricultural-supportive infrastructure like packing sheds.
- Policy controls are needed to accommodate greenhouses in locations that are best suited for the servicing needed, as well as areas that make the most sense for servicing upgrades.

Environment & Climate Change

- Addressing floodplain challenges for the existing shoreline community is essential.
- Maintaining and enhancing urban green spaces should be considered, including policies to support the maintenance and growth of the tree canopy.

Cultural Heritage

- Leamington has rich cultural diversity which should be celebrated. The Municipality needs to ensure there is inclusivity in planning and community development.
- The growing diversity in the population contributes to the Municipality's tourism, and more cultural integration has been suggested.
- Caldwell First Nation was also recognized as a tourism draw, with potential for future partnerships.

Through the OP review process a range of ideas and valuable feedback was gathered to inform decision makers and develop new policies and strategies to better the service delivery provided by the Municipality. Key themes include agriculture, with an emphasis on the greenhouse industry, as well as natural heritage systems and hazard lands and the conservation of natural heritage systems and hazard lands.

Managing growth within existing settlement areas while maintaining retail and recreational options, along with expanding residential boundaries are a top priority.

6.1.3 Essex County Official Plan (2024)

The County is responsible for the allocation of growth projections to local Municipalities. The County of Essex adopted the Official Plan in November 2024. The purpose of the County's Official Plan is to establish how and where growth and development will occur across seven Local Municipalities that comprise the County during the next thirty years.

Essex County is expecting high population growth between the years 2021 and 2051. According to projections, the 2021 population of 199,100 may reach 315,000 by 2051. The Municipality of Leamington will likely make up approximately 17% of the County's growth.

Essex County also completed an Official Plan Review starting in September 2022 and passed a by-law in November 2024, adopting the new County of Essex Official Plan, which has been sent to the Ministry of Municipal Affairs and Housing for final approval. This review focused on Phase 1 of 3, 1 including Growth Projections, Background Review, and Initial Outreach. Phases 2 and 3 will focus on Policy Options, Additional Technical Studies, and the drafting and adaptation of a new Official Plan.

The County realized substantial population growth between the years 2001 and 2021 growing from 166,327 to 193,200 people. This resulted in a 16.2% increase in population across the County. Households increased at a high rate as well growing from 57,475 in 2001 to 71,515 in 2021, resulting in a 24.4% increase over the 20-year period.

The tables below illustrate the Population, Employment, and Housing Forecasts to 2051 as stated in the newly adopted OP.

Population Forecasts

Year	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
2021	24,300	21,900	22,800	33,800	41,700	30,600	24,000	199,100
2051 Population Forecast	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
Low	32,800	26,200	30,100	45,800	55,000	42,900	35,300	268,100
Medium	36,100	28,300	33,100	50,500	60,300	47,500	39,300	295,000
High	38,500	29,900	35,200	53,900	64,200	50,900	42,300	315,000
2021-2051 Population Growth	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
Low	8,500	4,300	7,300	12,000	13,300	12,300	11,300	69,000
Medium	11,800	6,400	10,300	16,700	18,600	16,900	15,300	95,900
High	14,200	8,000	12,400	20,100	22,500	20,300	18,300	115,900

Employment Forecasts

Year	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
2021	5,800	6,800	7,400	6,700	14,300	15,200	16,200	72,300
2051 Employment Forecast	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
Low	8,500	9,700	10,900	10,600	21,600	25,400	21,200	107,900
Medium	5,700	6,800	7,400	6,600	14,100	15,100	16,200	71,900
High	10,000	11,100	12,400	12,800	26,200	27,700	24,000	124,200
2021-2051 Employment Growth	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
Low	2,700	2,900	3,500	3,900	7,300	10,200	5,000	35,600
Medium	3,700	3,700	4,400	5,200	10,100	11,600	6,700	45,300
High	4,200	4,300	5,000	6,100	11,900	12,500	7,800	51,900

Housing Unit Forecasts

Year	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
2021	9,185	8,380	8,290	11,640	14,380	10,535	8,945	71,395
2051 Household Growth	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
Low	12,605	10,305	11,360	17,090	19,825	15,540	14,400	101,155
Medium	13,465	10,780	12,130	18,460	21,190	16,825	15,775	108,670
High	14,105	11,145	12,715	19,500	22,220	17,785	16,815	114,425
2021-2051 Household Growth	Amherstburg	Essex	Kingsville	LaSalle	Lakeshore	Leamington	Tecumseh	Essex County
Low	3,420	1,925	3,070	5,450	5,445	5,005	5,455	29,760
Medium	4,280	2,400	3,840	6,820	6,810	6,290	6,830	37,275
High	4,920	2,765	4,425	7,860	7,840	7,250	7,870	42,930

With substantial growth projected throughout the county over the coming decades, Municipalities must plan to accommodate the population, housing, and employment allocations illustrated in the tables above. Local Municipal Official Plans should be used to determine the location and capacity of local infrastructure, public facilities, and related programs.

6.1.4 Development Charges Background Study (2022)

The Municipality of Leamington recently contracted Watson & Associates Economists Ltd. to develop a Development Charges Background Study. The following table provides the most up to date population projections determined by the Municipality and can be found under Appendix A - Schedule 10a-b in the study.

	Period	Population	Population Change	Employment	Employment Incremental Change
Actual	Mid 2006	28,833	N/A	10,845	N/A
	Mid 2011	28,403	-430	10,950	105
	Mid 2016	27,595	-808	10,480	-470
Projection	Early 2022	28,922	1,327	13,909	3,378
	Early 2032	33,710	4,788	19,119	5,002
	Early 2042	37,692	8,770	23,549	9,220

6.2 Impact of Growth of Lifecycle Activities

Future versions of the Municipality's asset management plan must include assumptions regarding projected changes in population and economic activity informing the preparation of lifecycle management and financial strategies.

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

The Municipality has developed and adopted numerous documents to guide strategic planning and promote growth. Such documents include the Development Charge Background Study and by-law for water, wastewater, roads, fire police, and administrative services, Uptown Master Plan, North Leamington Drainage Plan, Active Transportation Plan, Boarding House Study Update 2020, Water and Wastewater Rate Study, Waterfront Destination Master Plan, and the Windsor Essex Annual Report to the Community on the 10-year Housing and Homeless Plan.

Under O.Reg. 588/17, Municipalities with a population above 25,000 must include the following details in their Asset Management Plan by July 1, 2025:

1. Estimated capital expenditures and operating costs to achieve the proposed levels of service in order to accommodate growth.
2. Funding projected to be available by source as a result of increased population and economic activity.
3. Overview of risks associated with the implementation of the asset management plan.

With the completion of the 2025 AMP, the Municipality of Leamington has met requirements and compliance with O reg. 588/17. The Municipality will continue to advance the asset management program through regular reviews and updates to ensure accuracy and reliability of the information reported.

7 Financial Strategy

Key Insights

- Based on historical trends, Leamington is spending approximately \$16.8 million on capital projects per year.
- Given the annual capital requirement of \$41 million, there is currently a funding gap of \$22.1 million annually.
- For tax-funded assets, it is recommended to increase tax revenues by 2.1% each year for the next 20 years to achieve a sustainable level of funding.
- For the Water Network, it is recommended to increase rate revenues by 3.2% annually for the next 10 years to achieve a sustainable level of funding.
- For the Sewer Network, it is recommended to increase rate revenues by 2.4% annually for the next 20 years to achieve a sustainable level of funding.
- For the Pollution Control Centre, it is recommended to increase rate revenues by 1.5% annually for the next 5 years to achieve a sustainable level of funding.

7.1 Financial Strategy Overview

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

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

1. The financial requirements for:

- a. Existing assets
- b. Existing service levels
- c. Requirements of contemplated changes in service levels (none identified for this plan)
- d. Requirements of anticipated growth (none identified for this plan)

2. Use of traditional sources of Municipal funds:

- a. Tax levies
- b. User fees
- c. Reserves
- d. Debt
- e. Development charges

3. Use of non-traditional sources of Municipal funds:

- a. Reallocated budgets
- b. Partnerships
- c. Procurement methods

4. Use of Senior Government Funds:

- a. Gas tax
- b. Annual grants

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

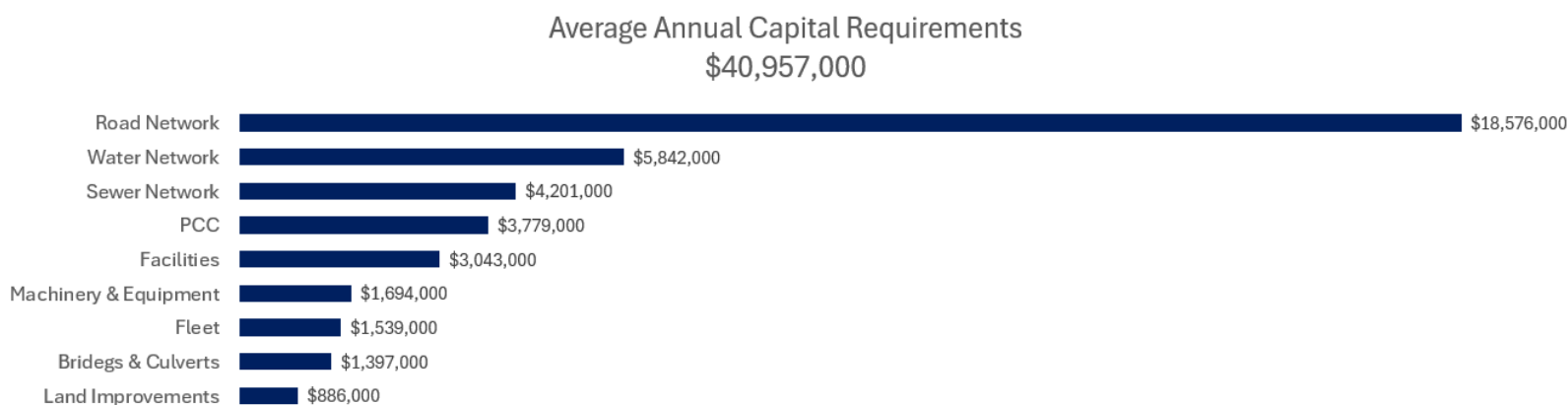
If the financial plan component results in a funding shortfall, the Province requires the inclusion of a specific plan as to how the impact of the shortfall will be managed. In determining the legitimacy of a funding shortfall, the Province may evaluate a Municipality's approach to the following:

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

7.1.1 Annual Requirements & Capital Funding

Annual Requirements

The annual requirements represent the amount the Municipality should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlog, and achieve long-term sustainability. In total, the Municipality must allocate approximately \$41 million annually to address capital requirements for the assets included in this AMP.



For most asset categories the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset. However, for the Road Network, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Municipality's roads.

The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented.

The following table compares two scenarios for the Road Network:

Replacement Only Scenario:

Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.

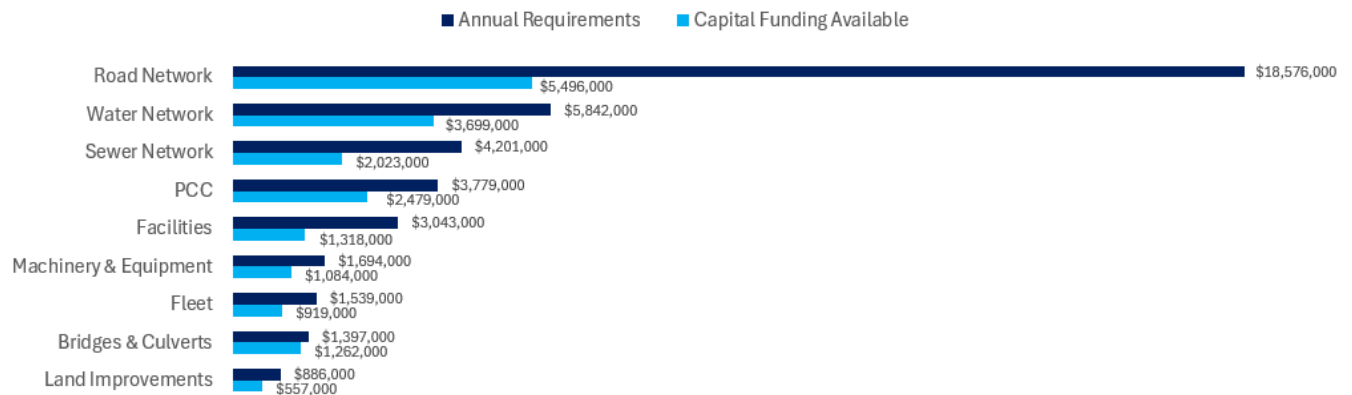
Lifecycle Strategy Scenario:

Based on the assumption that lifecycle activities are performed at strategic intervals to extend the service life of assets until replacement is required.

AMP Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Variance
Road Network	\$26,884,000	\$18,576,000	\$8,306,000

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost reduction of \$8.3 million for the Road Network. This represents an overall reduction of the annual requirements by 30.9%. As the lifecycle strategy scenario represents the lowest cost option available to the Municipality, these annual requirements in the development of the financial strategy have been used.

Annual Funding Available



7.2 Funding Objective

This scenario has been developed to enable Leamington to achieve full funding within 5 to 20 years for the following assets:

- 1. Tax Funded Assets:** Road Network, Bridges & Culverts, Facilities, Machinery & Equipment, Land Improvements, and Fleet
- 2. Rate-Funded Assets:** Water Network, Sewer Network, and Pollution Control Centre (PCC)

Note: For the purposes of this AMP, gravel roads have been excluded since they are a perpetual maintenance asset and end-of-life replacement calculations do not normally apply. If gravel roads are maintained properly, they can theoretically have a limitless service life.

For each scenario developed, there are corresponding included strategies, where applicable, regarding the use of cost containment and funding opportunities.

7.3 Financial Profile: Tax Funded Assets

7.3.1 Current Funding Position

The following tables illustrate, by AMP category, Leamington's average annual capital expenditure requirements, current funding positions, and funding increases required to achieve full funding on tax-funded assets.

AMP Category	Avg Annual Requirement	Annual Funding Available					Annual Deficit
		Taxes	Gas Tax	OCIF	Taxes to Reserves	Total Available	
Bridges & Culverts	\$1,397,000	\$0	\$647,000	\$615,000	\$0	\$1,262,000	\$135,000
Facilities	\$3,043,000	\$568,000	\$0	\$0	\$750,000	\$1,318,000	\$1,725,000
Land Improvements	\$886,000	\$407,000	\$0	\$0	\$150,000	\$557,000	\$329,000
Machinery & Equipment	\$1,694,000	\$411,000	\$0	\$0	\$673,000	\$1,084,000	\$610,000
Road Network	\$18,576,000	\$2,338,000	\$647,000	\$2,461,000	\$50,000	\$5,496,000	\$13,080,000
Fleet	\$1,539,000	\$198,000	\$0	\$0	\$721,000	\$919,000	\$620,000
Total	\$27,135,000	\$3,922,000	\$1,293,000	\$3,076,000	\$2,344,000	\$10,635,000	\$16,500,000

The average annual capital expenditure requirement for the above categories is \$27.1 million. The annual revenue currently allocated to these assets for capital purposes is \$10.6 million, leaving an annual deficit of \$16.5 million. Put differently, these infrastructure categories are currently funded at 39.2% of their long-term requirements.

7.3.2 Full Funding Requirements

In 2024, the Municipality of Leamington has annual tax revenues of \$35.9 million as illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

AMP Category	Tax Change Required for Full Funding
Bridges & Culverts	0.4%
Facilities	4.8%
Land Improvements	0.9%
Machinery & Equipment	1.7%
Road Network	36.5%
Fleet	1.7%
Total	46%

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

- a) Leamington's formula based OCIF grant is scheduled to remain constant at \$3 million.
- b) Leamington's debt payments for these asset categories will decrease by \$1.2 million by 2027.

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

	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	\$16,500,000	\$16,500,000	\$16,500,000	\$16,500,000	\$16,500,000	\$16,500,000	\$16,500,000	\$16,500,000
Change in Debt Costs	N/A	N/A	N/A	N/A	-\$1,214,000	-\$1,214,000	-\$1,214,000	-\$1,214,000
Change in OCIF Grants	N/A	N/A	N/A	N/A	\$0	\$0	\$0	\$0
Resulting Infrastructure Deficit	\$16,500,000	\$16,500,000	\$16,500,000	\$16,500,000	\$15,286,000	\$15,286,000	\$15,286,000	\$15,286,000
Tax Increase Required	46%	46%	46%	46%	42.6%	42.6%	42.6%	42.6%
Annually	9.2%	4.6%	3.1%	2.3%	8.5%	4.3%	2.8%	2.1%

7.3.3 Financial Strategy Recommendations

Considering all the above information, the recommendation is the 20-year option. This involves full capital expenditure (CapEx) funding being achieved over 20 years by:

- a) when realized, reallocating the debt cost reductions of \$1.2 million to the infrastructure deficit as outlined above.
- b) increasing tax revenues dedicated to CapEx by 2.1% each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- c) allocating the current gas tax and OCIF revenue as outlined previously.
- d) allocating the scheduled OCIF grant increases to the infrastructure deficit as they occur.
- e) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included any applicable OCIF formula-based funding since this funding is a multi-year commitment. ⁶
2. It is realized that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to achieve. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full CapEx funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of \$19.9 million for the Road Network, \$312K for the Facilities, \$1.5 million for the Machinery & Equipment, \$2.1 million for Land Improvements, and \$3.8 million for Fleet.

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

⁶ The Municipality should take advantage of all available grant funding programs and transfers from other levels of government. While OCIF has historically been

considered a sustainable source of funding, the program is currently undergoing review by the provincial government. Depending on the outcome of this review, there may be changes that impact its availability.

7.4 Financial Profile: Rate Funded Assets

7.4.1 Current Funding Position

The following tables illustrate by AMP category, Leamington's average annual CapEx requirements, current funding positions, and funding increases required to achieve full funding on rate-funded assets.

AMP Category	Avg Annual Requirement	Annual Funding Available			Annual Deficit
		Rates	To Operations	Total Available	
Pollution Control Centre	\$3,779,000	\$9,774,702	-\$7,295,807	\$2,478,895	\$1,300,105
Sewer Network	\$4,201,000	\$3,839,500	-\$1,816,335	\$2,023,165	\$2,177,835
Water Network	\$5,842,000	\$6,743,720	-\$3,044,372	\$3,699,348	\$2,142,652
Total	\$13,822,000	\$20,357,922	-\$12,156,514	\$8,201,408	\$5,620,592

The average annual investment requirement for the above categories is roughly \$13.8 million. Annual revenue currently allocated to these assets for capital purposes is \$8.2 million, leaving an annual deficit of roughly \$5.6 million. Put differently, these infrastructure categories are currently funded at approximately 59.3% of their long-term requirements.

7.4.2 Full Funding Requirements

In 2024, the Municipality collected annual water revenues of roughly \$6.8 million, annual sewer revenues of roughly \$3.8 million, and annual Pollution Control Centre revenues of roughly \$9.7 million. As illustrated in the table below, without consideration of any other sources of revenue, full funding would require the following changes over time:

AMP Category	Rate Change Required for Full Funding
Water Network	31.8%
Sewer Network	56.7%
Pollution Control Centre	13.3%
Total	27.6%

In the following tables, we have expanded the above scenario to present multiple options. Due to the significant increases required, phase-in options of up to 20 years are provided:

Water Network				
	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	\$2,142,652	\$2,142,652	\$2,142,652	\$2,142,652
Change in Debt Costs	\$0	\$0	\$0	\$0
Resulting Infrastructure Deficit	\$2,142,652	\$2,142,652	\$2,142,652	\$2,142,652
Rate Increase Required	31.8%	31.8%	31.8%	31.8%
Annually	6.4%	3.2%	2.1%	1.6%

	Sewer Network							
	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	\$2,177,835	\$2,177,835	\$2,177,835	\$2,177,835	\$2,177,835	\$2,177,835	\$2,177,835	\$2,177,835
Change in Debt Costs	N/A	N/A	N/A	N/A	-\$327,000	-\$327,000	-\$327,000	-\$327,000
Resulting Infrastructure Deficit	\$2,177,835	\$2,177,835	\$2,177,835	\$2,177,835	\$1,850,835	\$1,850,835	\$1,850,835	\$1,850,835
Rate Increase Required	56.7%	56.7%	56.7%	56.7%	48.2%	48.2%	48.2%	48.2%
Annually	11.3%	5.7%	3.8%	2.8%	9.6%	4.8%	3.2%	2.4%

	Pollution Control Centre							
	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	\$1,300,105	\$1,300,105	\$1,300,105	\$1,300,105	\$1,300,105	\$1,300,105	\$1,300,105	\$1,300,105
Change in Debt Costs	N/A	N/A	N/A	N/A	-\$563,000	-\$1,083,000	-\$1,083,000	-\$1,083,000
Resulting Infrastructure Deficit	\$1,300,105	\$1,300,105	\$1,300,105	\$1,300,105	\$737,105	\$217,105	\$217,105	\$217,105
Rate Increase Required	19.3%	19.3%	19.3%	19.3%	7.5%	2.2%	2.2%	2.2%
Annually	3.9%	1.9%	1.3%	1.0%	1.5%	0.2%	0.1%	0.1%

7.4.3 Financial Strategy Recommendations

Considering the information above, it is recommended that the 5-year option for the Pollution Control Centre, a 10-year option for the Water Network, and the 20-year option for the Sewer Network. This involves full CapEx funding being achieved over 20 years by:

- When realized, reallocating debt cost reductions to the infrastructure deficit.
- Increasing rate revenues by 3.2% for the Water Network for the next 10 years and 1.5% for the Pollution Control Centre for the next 5 years.
- Increasing rate revenues by 3.7% for the Sewer Network each year for the next 20 years.
- These rate revenue increases are solely for the purpose of phasing in full funding to the respective asset categories covered in this AMP.
- Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

- As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. This periodic funding should not be incorporated into an AMP unless there are firm commitments in place.
- We realize that raising rate revenues for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.
- Any increase in rates required for operations would be in addition to the above recommendations.

Although this strategy achieves full CapEx funding for rate-funded assets over 20 years, the recommendation does require prioritizing capital projects to fit the annual funding available. Current data shows a pent-up investment demand of \$9.5 million for the Water Network, \$33.8 million for the Sewer Network. There is currently no capital backlog of PCC assets.

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

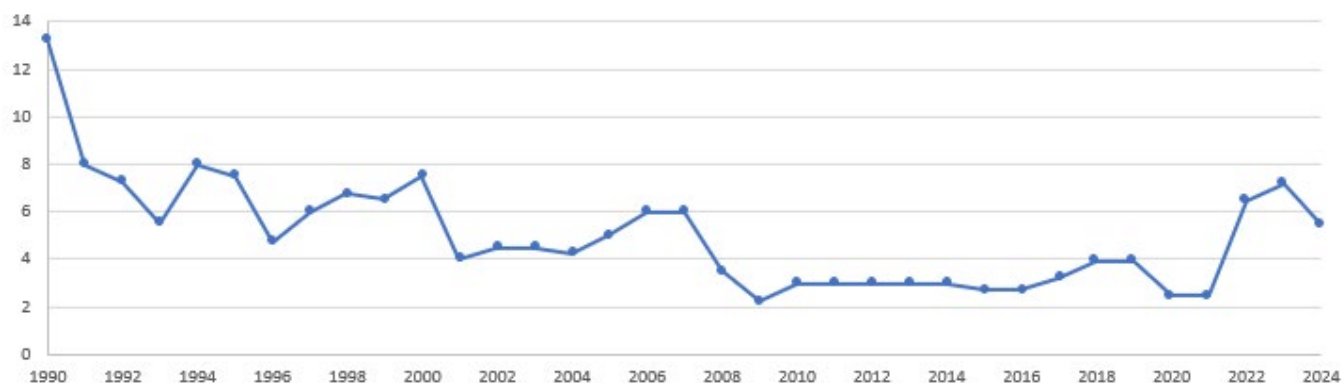
7.5 Use of Debt

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

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

It should be noted that current interest rates are near all-time lows. Sustainable funding models that include debt need to incorporate the risk of rising interest rates. The following graph shows where historical lending rates have been:

Historical Prime Business Interest Rate



A change in 15-year rates from 3% to 6% would change the premium from 26% to 54%. Such a change would have a significant impact on a financial plan.

The following tables outline how Leamington has historically used debt for investing in the asset categories as listed. There is currently approximately \$2.6 million of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of approximately \$2.6 million, well within its provincially prescribed Annual Repayment Limit (ARL).

AMP Category	Current Debt Outstanding	Use of Debt in the Last 5 Years				
		2020	2021	2022	2023	2024
Bridges & Culverts	\$0	\$0	\$0	\$0	\$0	\$0
Facilities	\$3,177,000	\$0	\$0	\$0	\$0	\$0
Fleet	\$0	\$0	\$0	\$0	\$0	\$0
Land Improvements	\$132,000	\$0	\$0	\$0	\$0	\$0
Machinery & Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Road Network	\$131,000	\$0	\$0	\$0	\$0	\$0
Total Tax Funded	\$3,642,000	\$0	\$0	\$0	\$0	\$0
PCC	\$5,323,000	\$0	\$0	\$0	\$0	\$0
Sewer Network	\$661,000	\$0	\$0	\$0	\$0	\$0
Water Network	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Funded	\$5,984,000	\$0	\$0	\$0	\$0	\$0
Total	\$9,626,000	\$0	\$0	\$0	\$0	\$0

AMP Category	Principle & Interest Payments in the Next 10 Years						
	2024	2025	2026	2027	2028	2029	2030-2034
Bridges & Culverts	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Facilities	\$1,039,000	\$1,039,000	\$1,039,000	\$0	\$0	\$0	\$0
Fleet	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Land Improvements	\$44,000	\$44,000	\$44,000	\$0	\$0	\$0	\$0
Machinery & Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Road Network	\$131,000	\$131,000	\$131,000	\$0	\$0	\$0	\$0
Total Tax Funded	\$1,214,000	\$1,214,000	\$1,214,000	\$0	\$0	\$0	\$0
PCC	\$1,108,000	\$759,000	\$759,000	\$520,000	\$520,000	\$520,000	\$1,162,000
Sewer Network	\$327,000	\$167,000	\$167,000	\$0	\$0	\$0	\$0
Water Network	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Funded	\$1,410,000	\$926,000	\$926,000	\$520,000	\$520,000	\$520,000	\$1,162,000
Total	\$2,624,000	\$2,140,000	\$2,140,000	\$520,000	\$520,000	\$520,000	\$1,162,000

7.6 Use of Reserves

7.6.1 Available Reserves

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

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

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

AMP Category	Balance at December 31, 2024
Bridges & Culverts	\$1,073,000
Facilities	\$7,253,000
Fleet	\$7,088,000
Land Improvements	\$4,002,000
Machinery & Equipment	\$8,251,000
Road Network	\$9,935,000
Total Tax Funded	\$37,602,000
PCC	\$19,611,000
Sewer Network	\$10,600,000
Water Network	\$21,290,000
Total Rate Funded	\$51,501,000
Total	\$89,103,000

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

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

These reserves are available for use by applicable AMP categories during the phase-in period to full funding. This coupled with Leamington's judicious use of debt in the past, allows the scenarios to assume that, if required, available reserves and debt capacity can be used for high priority and emergency infrastructure investments in the short to medium term.

7.6.2 Recommendation

The Municipality of Leamington has met the requirements of O. Reg. 588/17 for 2025 with the completion of this AMP and will continue to review and update its asset management plan at least every 5 years and annually review the progress of asset management planning. This includes the implementation of its asset management plan, any factors impeding the Municipality's ability to implement its asset management plan, and a strategy to address those hurdles. It is recommended that future planning should reflect adjustments to service levels and their impacts on reserve balances.

8 Appendices

Key Insights

- **Appendix A:** Identifies projected 10-year capital requirements for each AMP category.
- **Appendix B:** Includes several maps that have been used to illustrate levels of service.
- **Appendix C:** Identifies the criteria used to calculate risk for each AMP category.
- **Appendix D:** Provides additional guidance on the development of condition assessment programs.

Appendix A: 10-Year Capital Requirements

The following tables illustrate the capital cost requirements for each of the next 10 years in order to meet projected capital requirements and maintain levels of service.

Road Network											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Paved Roads (Arterial)	\$0	\$0	\$0	\$119,000	\$1,228,000	\$358,000	\$1,212,000	\$370,000	\$972,000	\$403,000	\$414,000
Paved Roads (Collector)	\$0	\$0	\$101,000	\$507,000	\$1,026,000	\$276,000	\$362,000	\$895,000	\$2,316,000	\$342,000	\$562,000
Paved Roads (Local)	\$0	\$21,000	\$513,000	\$1,436,000	\$2,088,000	\$1,432,000	\$6,171,000	\$4,524,000	\$7,368,000	\$2,914,000	\$1,924,000
Road Signs	\$5,138,000	\$4,177,000	\$0	\$56,000	\$276,000	\$341,000	\$888,000	\$222,000	\$1,179,000	\$570,000	\$315,000
Sidewalks & Curbs	\$9,298,000	\$409,000	\$75,000	\$546,000	\$29,000	\$269,000	\$377,000	\$228,000	\$39,000	\$291,000	\$311,000
Streetlights & Traffic Signals	\$5,548,000	\$113,000	\$0	\$150,000	\$1,388,000	\$38,000	\$1,362,000	\$100,000	\$708,000	\$24,067,000	\$138,000
Total	\$19,984,000	\$4,720,000	\$689,000	\$2,813,000	\$6,035,000	\$2,713,000	\$10,371,000	\$6,339,000	\$12,582,000	\$28,586,000	\$3,663,000

Bridges & Culverts											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Bridges	\$0	\$0	\$132,000	\$0	\$0	\$266,000	\$0	\$6,658,000	\$0	\$0	\$0
Culverts	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$132,000	\$0	\$0	\$266,000	\$0	\$6,658,000	\$0	\$0	\$0

Facilities											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
General Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$422,000	\$0
Protection Services	\$0	\$0	\$0	\$0	\$0	\$40,000	\$0	\$73,000	\$229,000	\$1,171,000	\$3,148,000
Recreation & Culture Services	\$212,000	\$167,000	\$43,000	\$0	\$0	\$0	\$103,000	\$70,000	\$131,000	\$4,196,000	\$635,000
Transportation Services	\$100,000	\$0	\$9,000	\$0	\$0	\$0	\$35,000	\$735,000	\$180,000	\$61,000	\$38,000
Total	\$312,000	\$167,000	\$51,000	\$0	\$0	\$40,000	\$138,000	\$879,000	\$539,000	\$5,850,000	\$3,822,000

Machinery & Equipment											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Furniture & Fixtures	\$330,000	\$41,000	\$480,000	\$37,000	\$778,000	\$47,000	\$64,000	\$31,000	\$50,000	\$17,000	\$84,000
General Government	\$0	\$0	\$0	\$17,000	\$17,000	\$63,000	\$6,000	\$0	\$8,000	\$91,000	\$41,000
Information Technology	\$370,000	\$12,000	\$365,000	\$286,000	\$338,000	\$476,000	\$264,000	\$401,000	\$553,000	\$209,000	\$365,000
Protection Services	\$138,000	\$26,000	\$0	\$41,000	\$238,000	\$75,000	\$212,000	\$80,000	\$43,000	\$84,000	\$31,000
Recreation & Culture Services	\$0	\$72,000	\$55,000	\$21,000	\$417,000	\$51,000	\$54,000	\$361,000	\$234,000	\$393,000	\$1,044,000
Transportation Services	\$648,000	\$150,000	\$25,000	\$341,000	\$405,000	\$20,000	\$302,000	\$353,000	\$292,000	\$338,000	\$124,000
Total	\$1,486,000	\$300,000	\$925,000	\$742,000	\$2,193,000	\$733,000	\$902,000	\$1,227,000	\$1,180,000	\$1,132,000	\$1,689,000

Fleet											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Planning & Development Services	\$60,000	\$0	\$0	\$0	\$0	\$0	\$60,000	\$60,000	\$0	\$0	\$0
Protection Services	\$3,535,000	\$135,000	\$120,000	\$77,000	\$60,000	\$720,000	\$0	\$1,507,000	\$0	\$164,000	\$0
Recreation & Culture Services	\$0	\$60,000	\$0	\$0	\$0	\$180,000	\$0	\$0	\$0	\$0	\$0
Transportation Services	\$197,000	\$0	\$300,000	\$121,000	\$615,000	\$325,000	\$610,000	\$400,000	\$700,000	\$360,000	\$375,000
Total	\$3,729,000	\$195,000	\$420,000	\$198,000	\$675,000	\$1,225,000	\$670,000	\$1,967,000	\$700,000	\$524,000	\$375,000

Land Improvements											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Concrete / Asphalt Pads	\$0	\$0	\$0	\$0	\$0	\$81,000	\$0	\$0	\$0	\$0	\$0
Fencing & Gates	\$309,000	\$29,000	\$14,000	\$15,000	\$110,000	\$12,000	\$0	\$10,000	\$49,000	\$618,000	\$85,000
Parking Lots	\$1,318,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,008,000	\$0	\$0
Parks	\$99,000	\$99,000	\$0	\$0	\$44,000	\$3,000	\$42,000	\$0	\$0	\$0	\$3,000
Playgrounds	\$10,000	\$0	\$34,000	\$251,000	\$0	\$302,000	\$97,000	\$73,000	\$5,000	\$0	\$57,000
Retaining Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000	\$0	\$0	\$0	\$0
Sport Structures	\$0	\$0	\$14,000	\$285,000	\$3,000	\$8,000	\$19,000	\$0	\$0	\$0	\$0
Trails & Walkways	\$400,000	\$38,000	\$135,000	\$0	\$80,000	\$37,000	\$66,000	\$0	\$0	\$896,000	\$0
Total	\$2,138,000	\$166,000	\$198,000	\$551,000	\$237,000	\$443,000	\$264,000	\$83,000	\$1,062,000	\$1,513,000	\$144,000

Water Network											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Hydrants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,000	\$9,000	\$0
Water Equipment	\$71,000	\$31,000	\$0	\$61,000	\$26,000	\$67,000	\$23,000	\$6,000	\$0	\$9,000	\$0
Water Services	\$7,238,000	\$0	\$465,000	\$135,000	\$594,000	\$747,000	\$135,000	\$973,000	\$1,959,000	\$221,000	\$145,000
Water Valves & Meters	\$1,463,000	\$30,000	\$25,000	\$34,000	\$59,000	\$90,000	\$45,000	\$84,000	\$202,000	\$106,000	\$36,000
Water Vehicles	\$0	\$0	\$350,000	\$100,000	\$100,000	\$360,000	\$200,000	\$100,000	\$100,000	\$180,000	\$50,000
Water Mains	\$723,000	\$924,000	\$1,022,000	\$826,000	\$1,272,000	\$1,850,000	\$526,000	\$1,926,000	\$4,689,000	\$1,378,000	\$520,000
Total	\$9,495,000	\$985,000	\$1,861,000	\$1,157,000	\$2,052,000	\$3,114,000	\$928,000	\$3,088,000	\$6,966,000	\$1,902,000	\$751,000

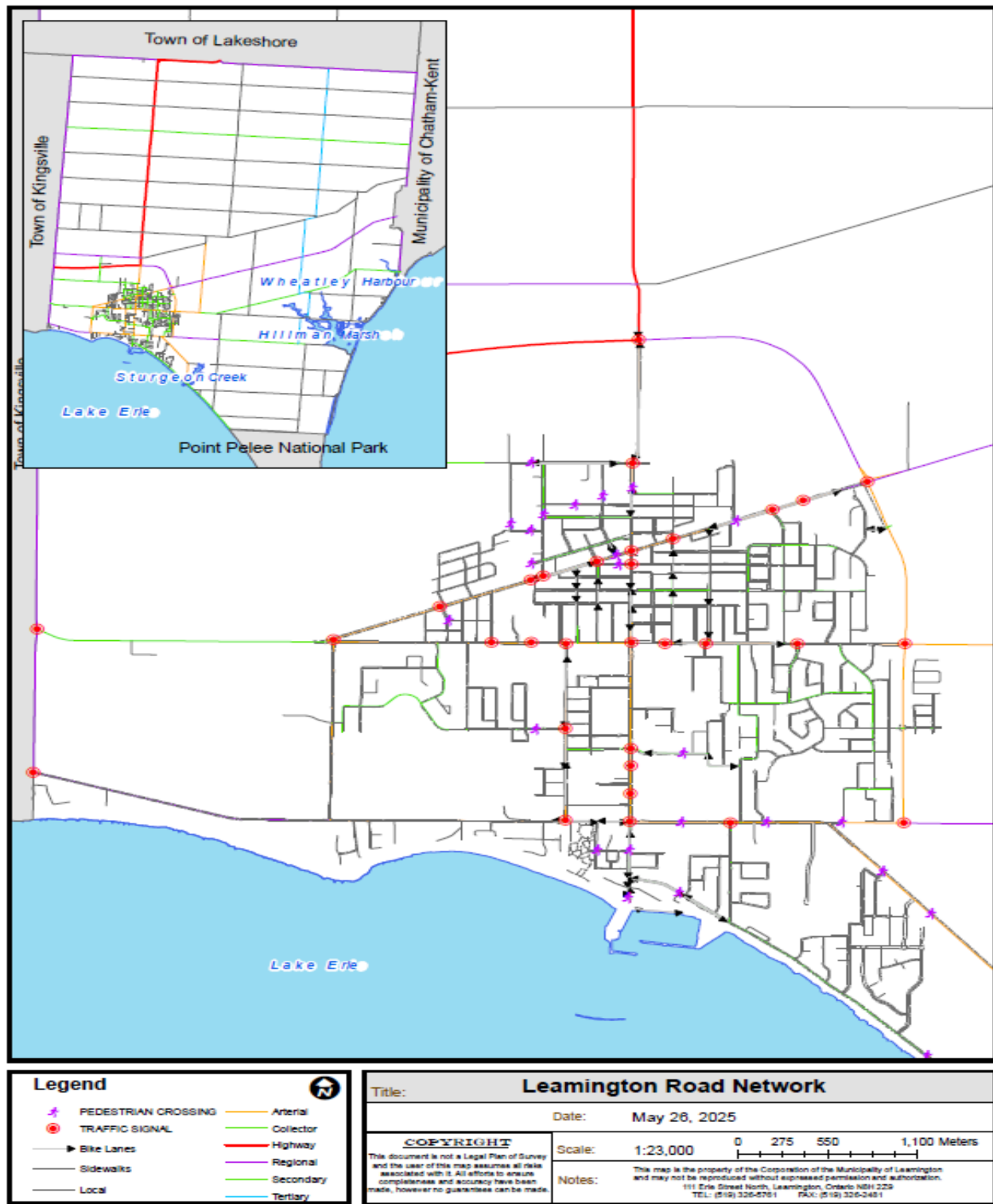
Water Main Unit Cost (2024)	
Water Main Diameter (mm)	Cost/Unit
25	\$332
50	\$399
75	\$464
100	\$532
150	\$665
200	\$798
250	\$903
300	\$1,164
350	\$1,372
400	\$1,472
450	\$1,629
500	\$2,161
600	\$2,323
750	\$2,932
900	\$3,534
1,050	\$4,173

Sewer Network											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Catchbasins	\$7,343,000	\$84,000	\$140,000	\$105,000	\$350,000	\$98,000	\$231,000	\$539,000	\$238,000	\$455,000	\$14,000
Combined Mains	\$16,540,000	\$120,000	\$40,000	\$1,051,000	\$1,589,000	\$359,000	\$0	\$2,136,000	\$53,000	\$0	\$1,282,000
Combined Manholes	\$4,680,000	\$0	\$9,000	\$0	\$0	\$0	\$0	\$9,000	\$0	\$0	\$0
Sanitary Mains	\$5,682,000	\$331,000	\$0	\$0	\$0	\$267,000	\$20,000	\$0	\$0	\$144,000	\$0
Sanitary Manholes	\$654,000	\$11,000	\$0	\$327,000	\$101,000	\$462,000	\$507,000	\$113,000	\$192,000	\$451,000	\$79,000
Sewer Equipment	\$82,000	\$0	\$0	\$0	\$8,000	\$35,000	\$8,000	\$16,000	\$16,000	\$0	\$8,000
Storm Mains	\$3,127,000	\$306,000	\$0	\$1,820,000	\$10,000	\$8,164,000	\$27,000	\$3,000	\$2,219,000	\$770,000	\$3,358,000
Storm Manholes	\$1,408,000	\$0	\$16,000	\$400,000	\$80,000	\$800,000	\$336,000	\$256,000	\$384,000	\$816,000	\$128,000
Stormwater Ponds & Outfalls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,000	\$0
Total	\$33,834,000	\$852,000	\$205,000	\$3,703,000	\$2,139,000	\$10,185,000	\$1,129,000	\$3,072,000	\$3,102,000	\$2,655,000	\$4,869,000

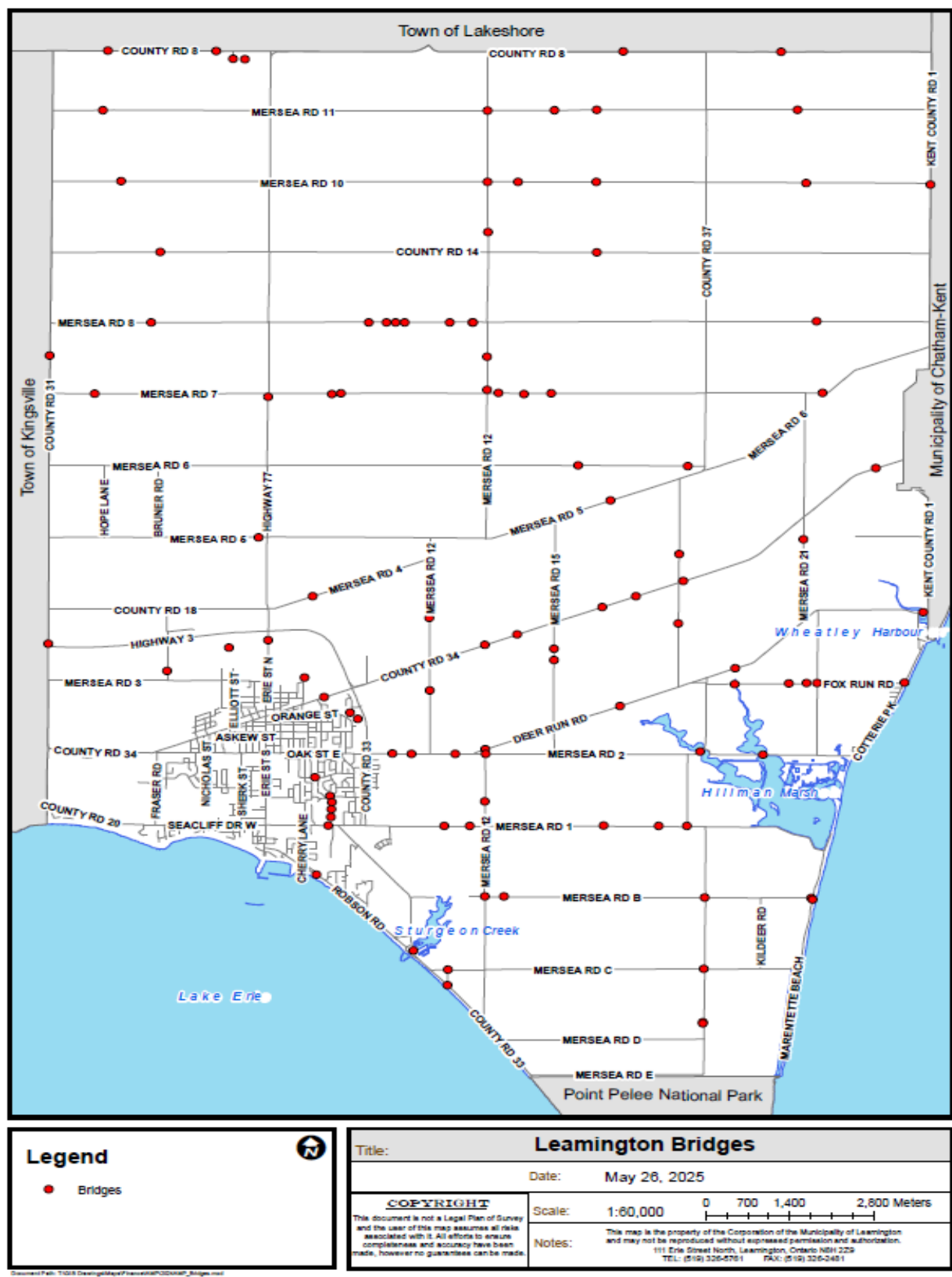
Pollution Control Centre (PCC)											
AMP Segment	Backlog	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PCC Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PCC Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,000
PCC Land Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PCC Vehicles	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pumping Stations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,300,000
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,311,000

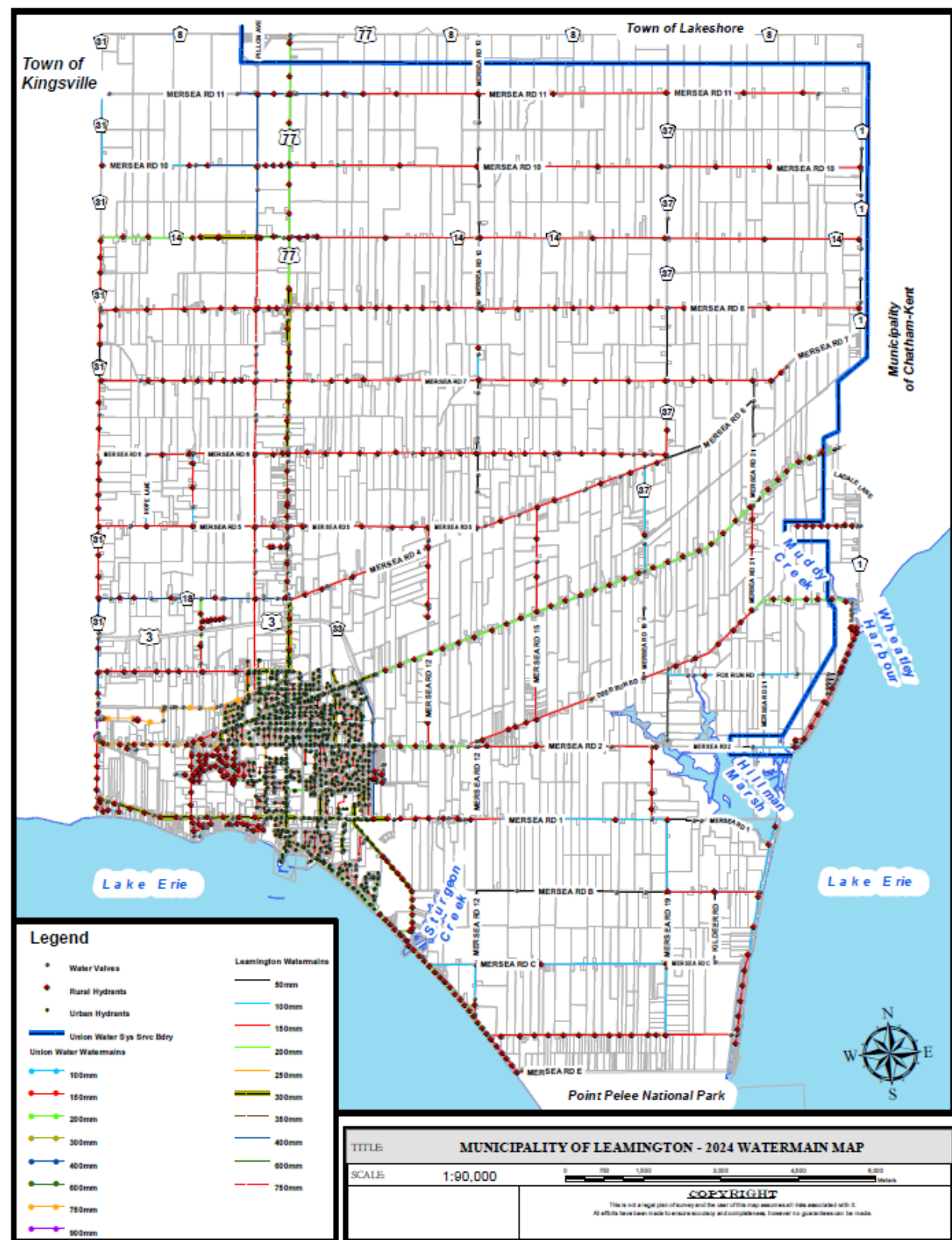
Appendix B: Levels of Service Maps

Road Network Map

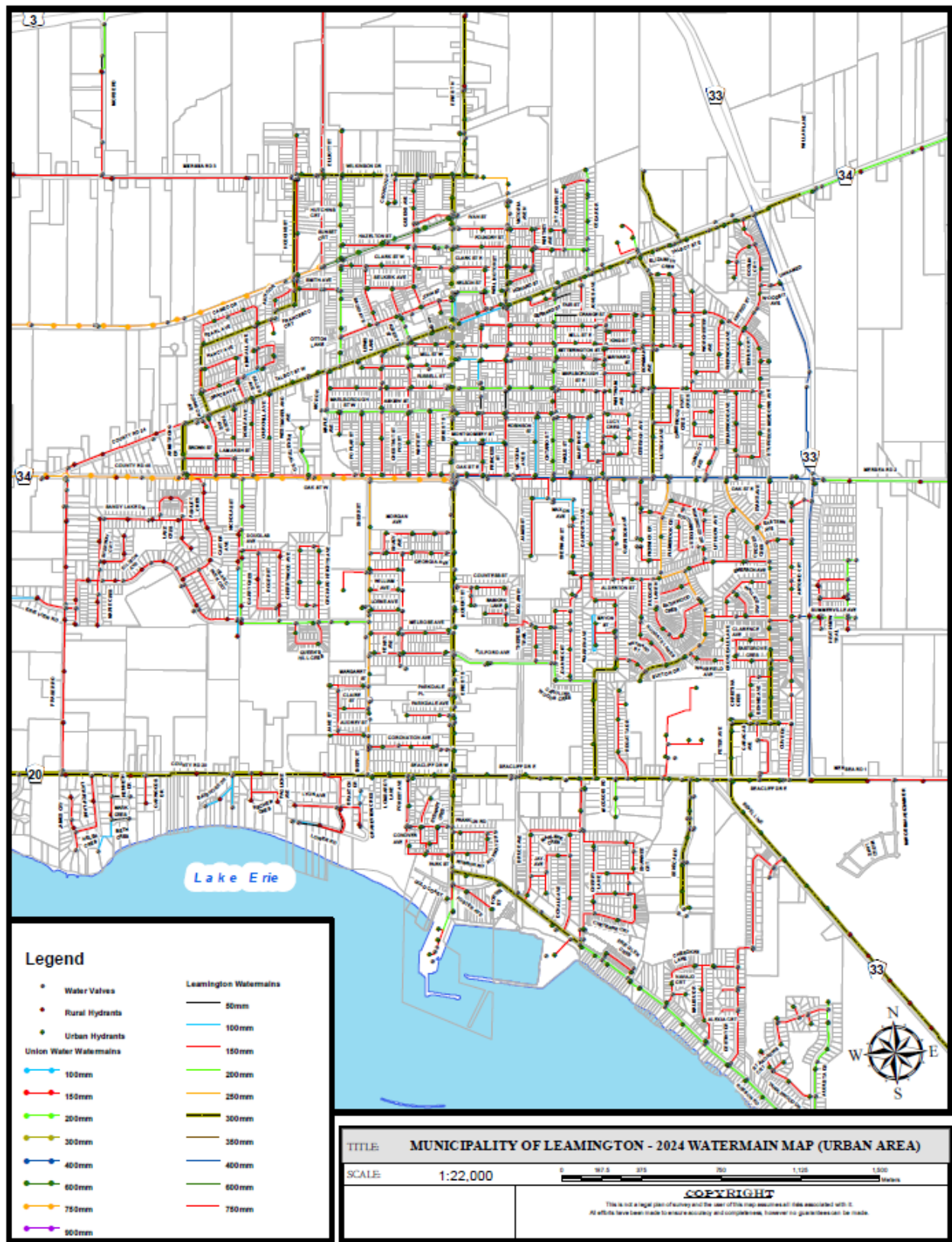


Bridges & Culverts Map

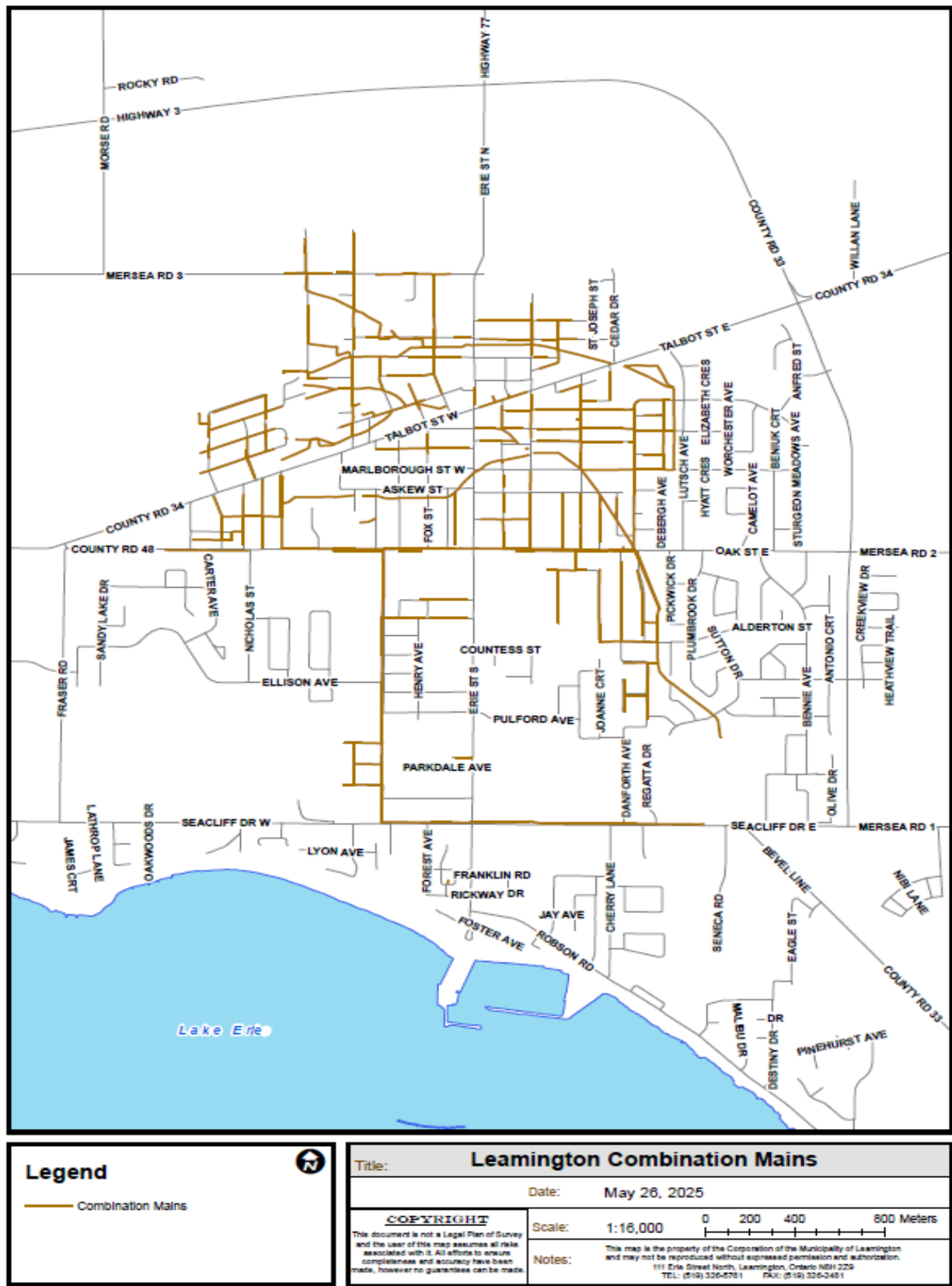




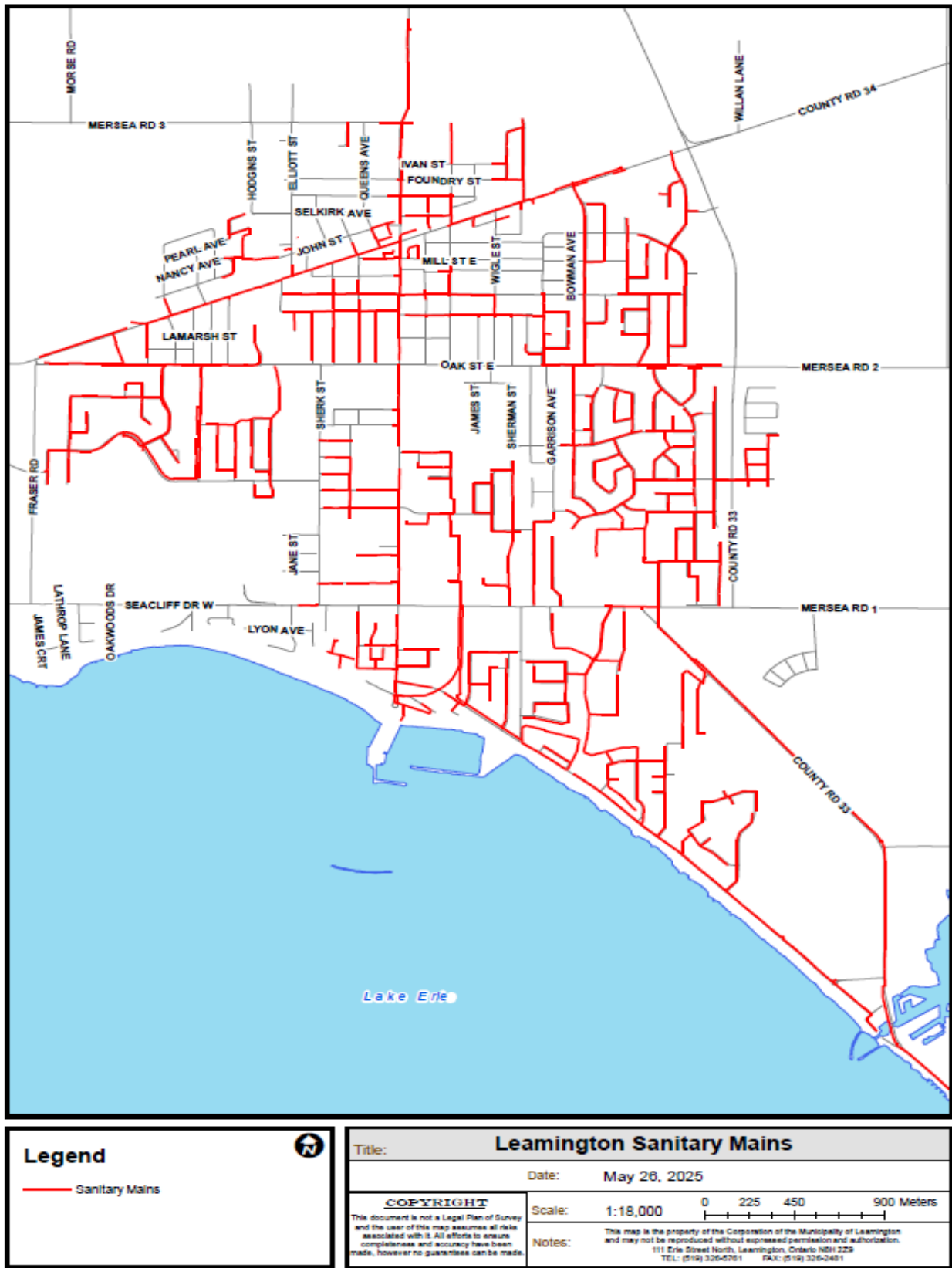
Urban Water Network Map



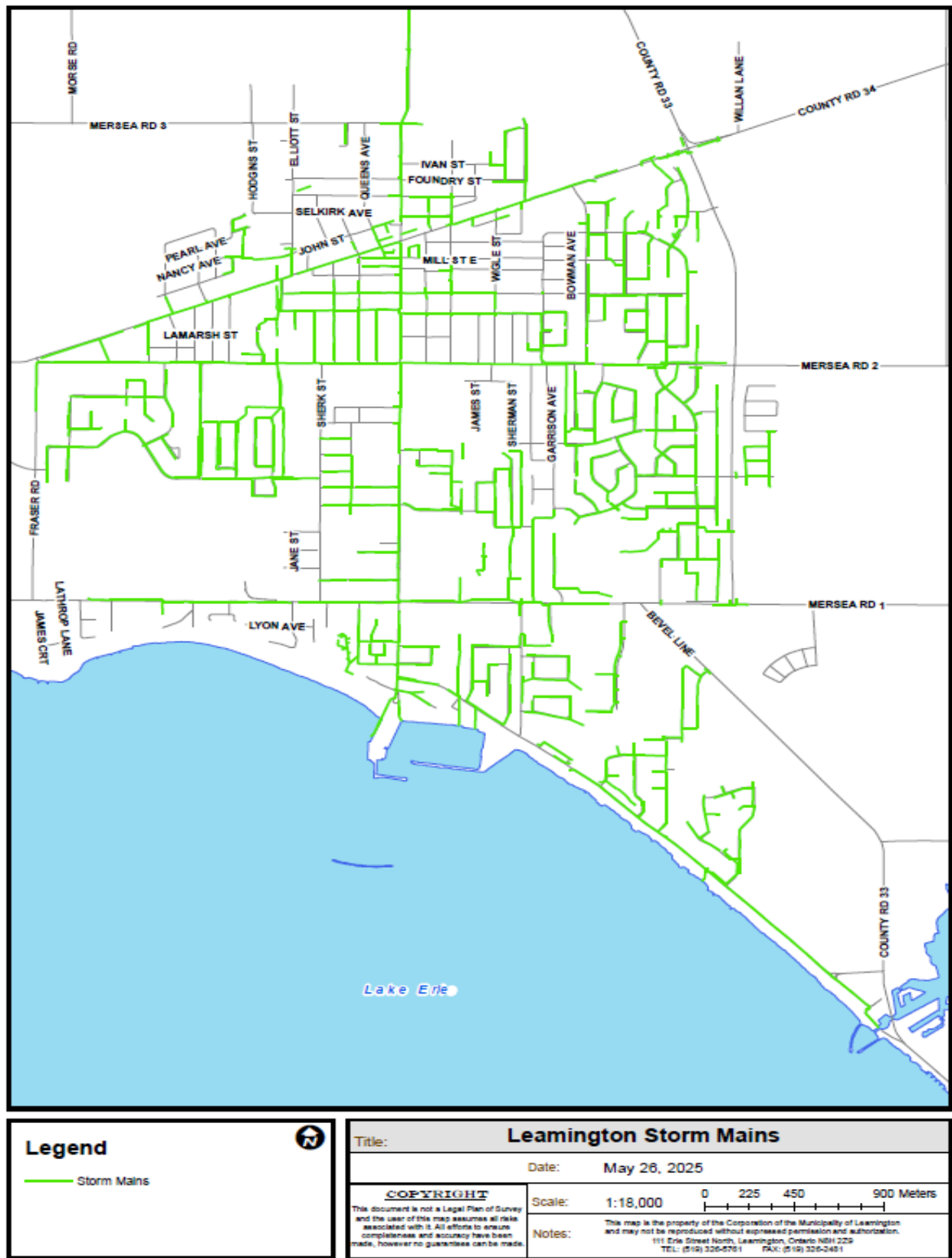
Sewer Network – Combined Mains Map



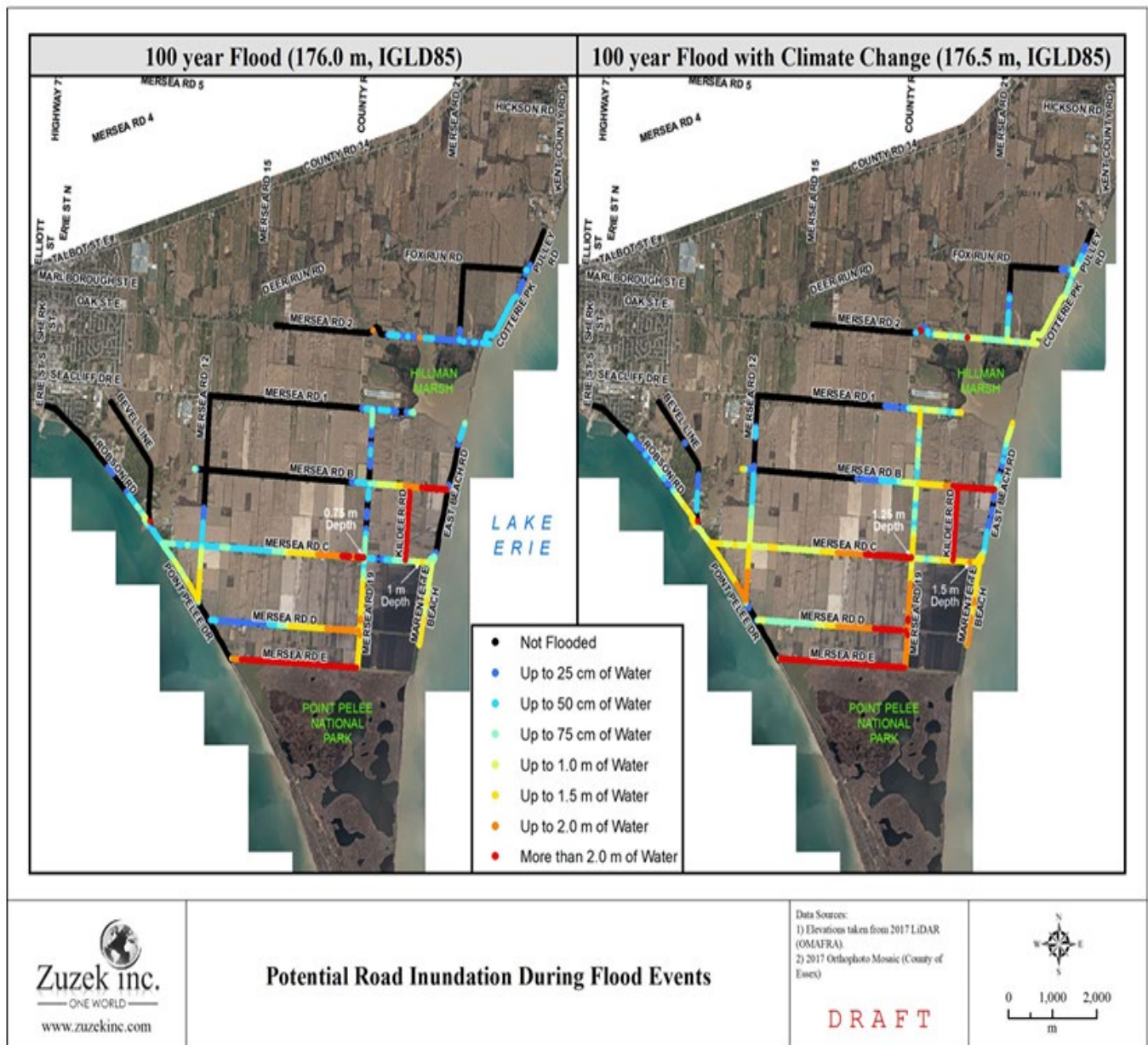
Sewer Network – Sanitary Mains Map



Sewer Network – Storm Mains Map



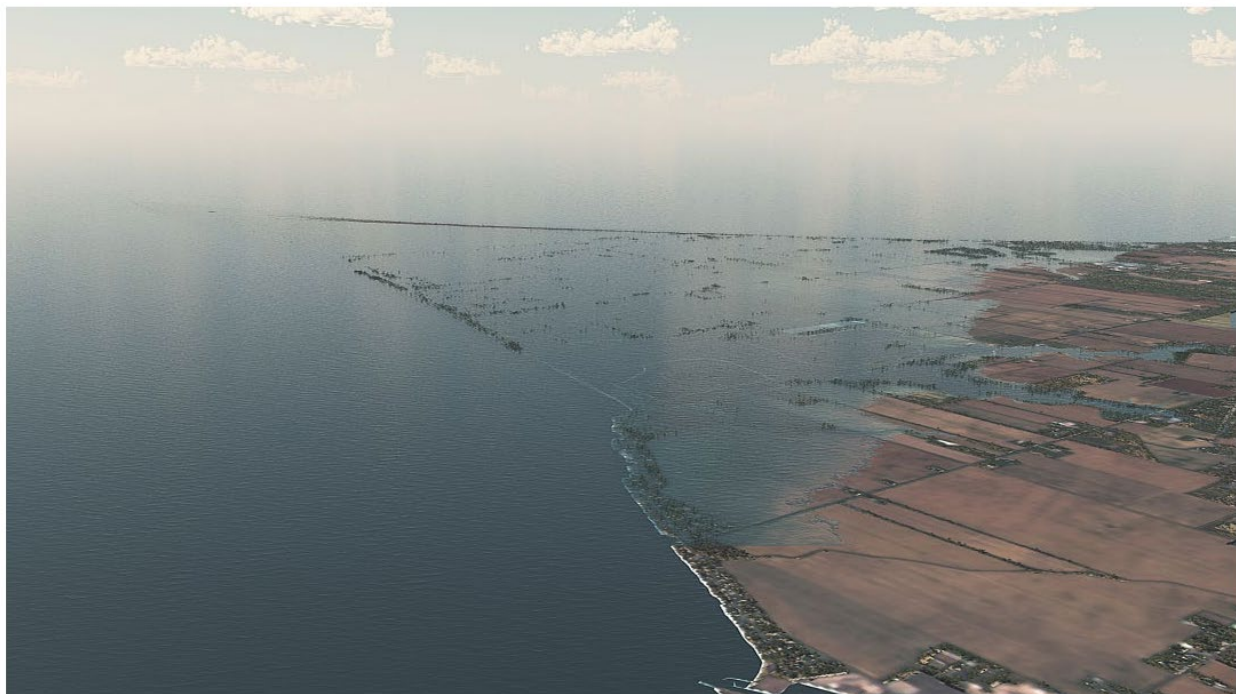
100-Year Flood – Road Inundation



100-Year Flood – Lake Level of 176 m



100-Year Flood With Climate Change – Lake Level of 176.5m



Appendix C: Risk Rating Criteria

Probability of Failure (PoF)

AMP Category	Risk Criteria	Criteria Weighting	Value / Range	PoF Score
Road Network (Roads)	Condition	70%	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
	Surface Material	30%	Concrete	1
			Asphalt Concrete, HCB	2
			LCB	4
			Gravel	5
Bridges & Culverts	Condition	60%	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5
	Timing Needs	20%	10+ Years	2
			5-10 Years	3
			3-5 Years	4
			1-3 Years	5
	Structural Material	20%	PC, RC	2
			CSP, PR	3
			W-S	4

AMP Category	Risk Criteria	Criteria Weighting	Value / Range	PoF Score
Water Mains	Asset Age (Years)	60%	0-20	1
			21-40	2
			41-60	3
			61-80	4
			81-100	5
	Pipe Material	40%	PVC	1
			High-Pressure Concrete	2
			Ductile Iron	3
			Cast Iron	4
			Asbestos Cement	5
Sanitary (Mains)	Asset Age (Years)	60%	0-20	1
			21-40	2
			41-60	3
			61-80	4
			81-100	5
	Pipe Material	40%	PVC	1
			Asbestos Cement, Concrete	4

AMP Category	Risk Criteria	Criteria Weighting	Value / Range	PoF Score
Storm (Mains)	Asset Age (Years)	60%	0-20	1
			21-40	2
			41-60	3
			61-80	4
			81-100	5
	Pipe Material	40%	BOSS 2000, HDPE, PVC, VC	1
			Aluminum Steel Non-Corrugated, CSP	3
			Asbestos Cement, Concrete	4

Consequence of Failure (CoF)

AMP Category	Risk Classification	Risk Criteria	Value / Range	CoF Score
Road Network (Roads)	Replacement Cost	60%	\$0 - \$5,000	1
			\$5,001 - \$20,000	2
			\$20,001 - \$50,000	3
			\$50,001 - \$100,000	4
			\$100,001 +	5
	Road Class	30%	No Street Class	1
			Local	2
			Collector	3
			Arterial	4
	Posted Speed (km/hr)	10%	0-40	1
			41-50	2
			51-60	3
			61-70	4
			80 +	5
Bridges & Culverts	Replacement Cost	100%	\$0 - \$50,000	1
			\$50,001 - \$300,000	2
			\$300,001 - \$600,000	3
			\$600,001 - \$900,000	4
			\$900,001 +	5

AMP Category	Risk Classification	Risk Criteria	Value / Range	CoF Score
Water Mains	Replacement Cost	50%	\$0 - \$5,000	1
			\$5,001 - \$20,000	2
			\$20,001 - \$50,000	3
			\$50,001 - \$200,000	4
			\$200,001 +	5
	Pipe Size (mm)	30%	0 - 200	1
			201 - 400	2
			401 - 500	3
			501 - 600	4
			600 +	5
	Asset Type	20%	Rural	3
Sanitary Mains	Replacement Cost	60%	\$0 - \$5,000	1
			\$5,001 - \$20,000	2
			\$20,001 - \$50,000	3
			\$50,001 - \$500,000	4
			\$500,001 +	5
	Pipe Size (mm)	40%	0 - 150	1
			151 - 250	2
			251 - 450	3
			451 - 750	4
			751 +	5

AMP Category	Risk Classification	Risk Criteria	Value / Range	CoF Score
Storm Mains	Replacement Cost	60%	\$0 - \$5,000	1
			\$5,001 - \$20,000	2
			\$20,001 - \$50,000	3
			\$50,001 - \$200,000	4
			\$200,001 +	5
	Pipe Size (mm)	40%	0 - 250	1
			251 - 450	2
			451 - 750	3
			751 - 1,050	4
			1,051 +	5

Appendix D: Condition Assessment Guidelines

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

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the Municipality'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 Municipality'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 Municipality 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 Municipality 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 Municipality 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 Municipality should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:

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