Asset Management Plan

Town of Amherstburg

Date: June 30, 2025

2025

Acknowledgements

We would like to acknowledge the efforts of all Town staff, who were involved in the development of this Plan and were invaluable in providing both the quantitative and qualitative data required to inform this comprehensive corporate plan.

Without the strategic guidance provided by Council, the oversight of the Asset Management Executive and Steering Committees, and the support of all staff responsible for managing the City's extensive network of assets, this document would not have been possible.

This collaboration highlights the importance of incorporating sound asset management principles into the regular business processes of the Town.

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Key Statistics

Replacement cost of asset portfolio

$1.7 billion

Replacement cost of infrastructure per household (2021 census)

$184,984 (2021)

Percentage of assets in fair or better condition

75%

Percentage of assets with assessed condition data

50%

Annual capital infrastructure deficit

$11.3 million

Recommended timeframe for eliminating annual infrastructure deficit

10 years

Target reinvestment rate

1.9%

Actual reinvestment rate
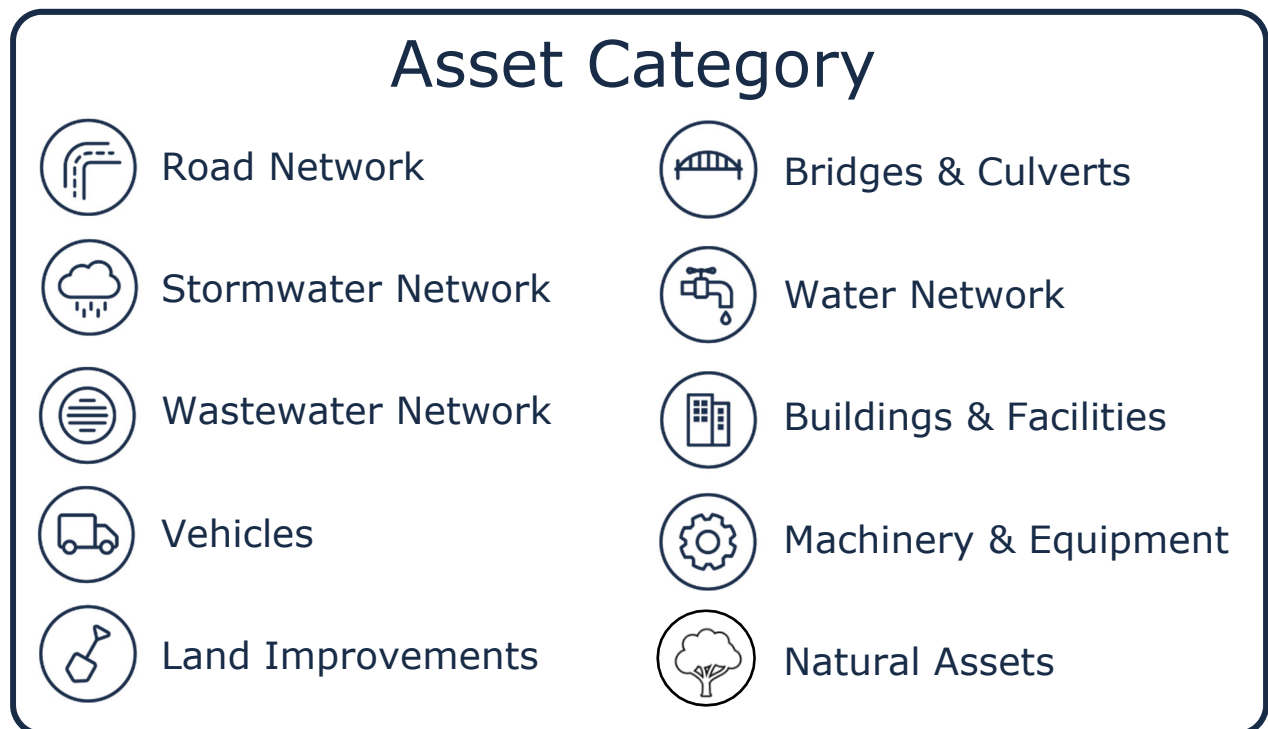
0.8%

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Executive Summary

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

Scope

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

This Asset Management Plan (AMP) include the following asset categories:

Asset Category

- Road Network
- Stormwater Network
- Wastewater Network
- Vehicles
- Land Improvements
- Bridges & Culverts
- Water Network
- Buildings & Facilities
- Machinery & Equipment
- Natural Assets

With the development of this AMP, the Town has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2025. There are continued legislated obligations to update the AMP every 5 years thereafter.

Findings

The overall replacement cost of the asset categories included in this AMP totals $1.7 billion.
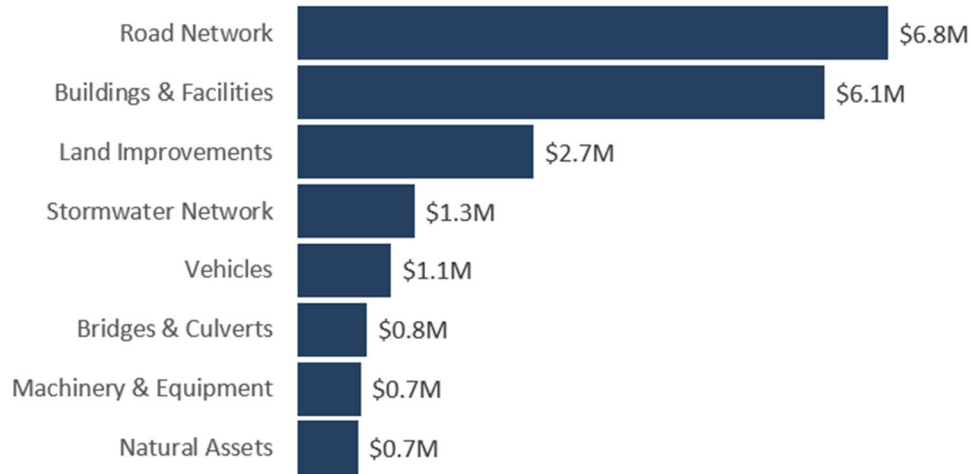
75% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 50% of assets. For the remaining 50% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (paved roads and storm pipes) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the adopted level of service.

In order to maintain the Level of Service at the same level as the 2022 AMP (Council's adopted LOS), the Town's capital requirements are projected to be $20.2 million for tax levy assets. Based on the annual average from the 5-year capital plan, the Town is committing approximately $8.9 million towards capital projects per year. As a result, there is currently an annual funding gap of $11.3 million.

Annual Capital Required for Adopted LOS
$20,235,339

Category	Value
Road Network	$6.8M
Buildings & Facilities	$6.1M
Land Improvements	$2.7M
Stormwater Network	$1.3M
Vehicles	$1.1M
Bridges & Culverts	$0.8M
Machinery & Equipment	$0.7M
Natural Assets	$0.7M

It is important to note that this AMP represents a snapshot in time and is based on the best available processes, data, and information at the Town. Any data released prior to or after this document may show differences as information changes.

More specifically, this plan does not take into account any possible replacement cost increases in the future due to recent threat of tariffs from the United States. There is no point in speculating what changes will occur at this time. However, it should be noted that future costing may be greatly affected by these geopolitical forces and will need to be assessed in future asset management updates.

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

Annual Deficit per Household $1,229

Recommendations

A financial strategy was developed to address the annual capital funding gap for tax funded assets. The following graphics shows annual tax change required to move towards eliminating the Town's infrastructure deficit based on a 10-year plan:

Tax-Funded
ASSETS

Average Annual Tax
Levy Increase
(added to 1.6% levy)
2.5%

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

- Update data consistently to maintain a complete and accurate dataset
- Develop a condition assessment strategy with a regular schedule for priority assets.
- Review and update lifecycle management strategies
- Develop and regularly review short- and long-term plans to meet capital requirements
- Continue to measure current levels of service and identify financial strategies to meet adopted levels of service

1 Introduction & Context

Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio
- The Town's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management
- An asset management plan is a living document that should be updated regularly to inform long-term planning
- Ontario Regulation 588/17 outlines several key milestones and requirements for asset management plans in Ontario up to July 1, 2025 and beyond.

1.1 An Overview of Asset Management

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

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

Total Cost of Ownership

| Build 20% | Operate, Maintain, and Dispose 80% |
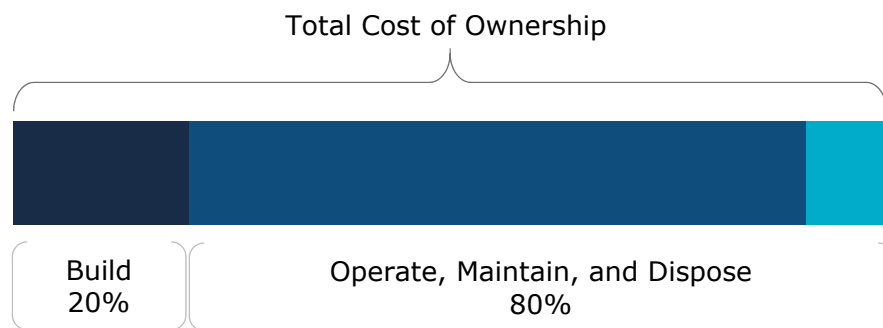
These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

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

1.1.1   Asset Management Policy

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

The Town adopted their Asset Management Policy on February 13th, 2013, in accordance with Ontario Regulation 588/17. The most recent revision was approved on July 8, 2024, meeting the legislated requirement to update the policy at least every 5 years.

1.1.2   Asset Management Strategy

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

Approved by the Asset Management Executive committee, the Asset Management Steering Committee has developed a 4-year asset management strategy to improve asset management activities throughout the corporation.

1.1.3   Asset Management Plan

The asset management plan (AMP) presents the outcomes of the Town's asset management program and identifies the resource requirements needed to achieve a defined level of service. The AMP typically includes the following content:

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

The AMP is a living document that should be updated regularly as additional asset and financial data becomes available. This will allow the Town to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

1.2 Key Concepts in Asset Management

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

1.2.1 Lifecycle Management Strategies

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

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

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

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

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

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

1.2.2 Risk Management Strategies

Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community than that of others. For example, the failure of an asset that affects health & safety of the community poses a higher risk than an asset that fulfils a recreational need. These high-value assets should receive funding before others.

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

This AMP includes a high-level evaluation of asset risk and criticality. Council approved the risk measurement criteria on July 8th, 2024. The risk assessment tool sets out consistent measurement criteria to be used across the corporation for the likelihood and consequence of failure of the asset.

AMHERSTBURG

Measurement Criteria for the Risk Assessment Tool - July 8, 2024

Probability					
Rating - Descriptor	**1 - Rare**	**2 - Unlikely**	**3 - Possible**	**4 - Likely**	**5 - Almost Certain**
Description - *Frequency or approximate probability*	May only occur in certain conditions. Every 10 + years or 0% to 10%	Could occur some time. Every 5 to 10 years or 10% to 40%	Might occur at some time. Every 3 to 5 years or 40% to 60%	Will probably occur in most circumstances. Every 2 to 3 years or 60% to 90%	Almost certain to occur. Annually or more frequently or 90% to 100%

Consequence						
	Rating - Descriptor	**1 - Minimal**	**2 - Minor**	**3 - Moderate**	**4 - Major**	**5 - Severe**
H&S	**Health & Safety** - *injuries to staff, public or vendors*	No treatment required	Minor injury requiring medical treatment	Serious injury requiring medical treatment	Permanent disability or widespread illness	Death
Damages & Liability	**Legal Liability** - *incur $ (claims, lawsuits etc)*	< $25K	$25K-100K	$100K-250K	$250K-1M	> $1M
	Physical Assets - *replacement of*	Replaceable worth < $25k	Replaceable worth $25k-100k	Replaceable worth $100k-250k	Replaceable worth $250k-1M	Replaceable worth over $1M or significant asset is irreplaceable
	Environment - *damage to*	Negligible event, non-permanent impact requiring no clean-up measures	Minor event, non-permanent impact requiring very little clean up effort @ $25K-100K	Major event, some permanent impact requiring moderate clean-up effort @ $100K-250K	Major event, some permanent impact requiring extensive clean-up effort @$250K-1M	Severe event, permanent impact requiring significant clean-up @ > $1M
Operational Impact	**Quality** - *Impact or disruptions to overall quality of service delivered* **	Limited impact to quality of discretionary service	Moderate or localized impact to quality of discretionary service OR Limited impact to quality of essential service or a major project	Serious disruption to quality of discretionary service OR Moderate or localized impact to quality of essential service or a major project	Inability to provide an discretionary service OR Significant, sustained impact to quality of essential service or a major project	Inability to provide an essential service or complete a major project.
	Budget - *cost overuns for service or project*	< $25K	$25K-100K	$100K-250K	$250K-1M	> $1M
	Funding - *loss of external funding (eg grants, leasing revenue, user fees)*	< $25K	$25K-100K	$100K-250K	$250K-1M	> $1M
Regulation & Reputational Impacts	**Public Trust / Media Attention** - *negative attention*	Limited attention by media	Local media coverage, department official fielding media questions	Regional media coverage, significant impact on public confidence that damages Town's image	National or Provincial media coverage, external agency inquiry, major impact on public confidence that is difficult to regain	Significant National or Provincial media coverage, external agency criminal investigation, sustained serious loss of confidence in management of Town
	Governance - *management oversight*	Some unfavourable comments by governing body (I.e. Management or Council)	Criticism by governing body (I.e. Management or Council)	Request for change recommendations by governing body (I.e. Management or Council)	Senior governing body demanding immediate changes to status quo (I.e. Federal or Provincial)	Senior governing body imposing temporary leadership (I.e. Federal or Provincial)
	Legislative - *violation of legislation*	Infraction of legislation with limited penalties (under $25k)	Minor infraction of legislation ($25K-100K)	Moderate infraction of legislation ($100K-250K)	Major violation of legislation with signficant penalties ($500k-$1M), high profile trial	Multiple major violations of legislation with significant penalties (over $1M), public inquiry & high profile trial

**Note: Evaluate small & med. project risks based on impact to affected discretionary or essential service.

Each asset type was evaluated using the council approved risk assessment tool to assign a consequence of failure score. The probability of failure score was based on available asset condition/age data. The risk score was determined based on these two factors. These risk scores can be used to prioritize maintenance, rehabilitation and replacement strategies for critical assets.

1.2.3   Levels of Service

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

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

Community Levels of Service

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

Technical Levels of Service

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

For core asset categories (roads, bridges and culverts, water, wastewater, stormwater) the Province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP. For non-core asset categories, the Town has determined the technical metrics that will be used to determine the technical level of service provided. These metrics can be found in the Levels of Service subsection within each asset category.

Current and Proposed Levels of Service (LOS)

As per O. Reg. 588/17, the town was required to establish proposed levels of service for the 2025 AMP. On July 8th, 2024, council approved that Level of Service targets would remain as defined in the 2022 AMP. This will now be referred to as the adopted LOS.

This AMP will measure the current level of service provided to the community and model the adopted levels of service at various funding strategies. The Town will identify a lifecycle management and financial strategy which allows this target to be achieved.

1.3 Ontario Regulation 588/17

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

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

2019

Strategic Asset Management Policy

2024

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

2022

Asset Management Plan for Core Assets with the following components:

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

2025

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

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

O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2025. Next to each requirement a page or section reference is included in addition to any necessary commentary.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1 - 11.1, 12-13	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1 – 11.1, Appendix E 2	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.2 – 13.2	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.2 – 11.2, Appendix E 3.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.2.1 – 11.2.1, App E 3.1	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.5 – 13.5	Complete
Current performance measures in each category	S.5(2), 2	4.5 – 13.5	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.3 – 13.3	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	14.1-14.2	Complete
Proposed levels of service for the next 10 years	S.6(1), 1	3.5	Complete
Explanation of why levels of service are appropriate	S.6(1), 2	3.5	Complete
Proposed performance levels for the next 10 years	S.6(1), 3	4.3 – 11.3 Appendix E 4.2	Complete
Lifecycle management & financial strategy for proposed levels of service for next 10 years.	S.6(1), 4 (i-v)	15.3.3 Appendix D 4-6	Complete
Lifecyle activities for proposed levels of service	S.6(1), 4 (i)	4.3-13.3	Complete
Estimate of annual costs of lifecycle activities for each of the 10 years	S.6(1), 4 (ii)	4.3 – 11.3 Appendix D	Complete

Annual funding available for lifecycle activities	S.6(1), 4 (iii)	Appendix C Appendix D	Complete
If funding shortfall for lifecycle activities, which activities will be done and how to manage risk for those that are not	S.6(1), 4 (iv)	15.3.4	Complete
How growth informed the preparation of lifecycle management and financial strategy	S.6(1), 5	14.2	Complete

2 Scope and Methodology

Key Insights

- This asset management plan includes 10 asset categories and is divided between tax-funded and rate-funded categories
- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation
- Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life

2.1 Asset Categories Included in this AMP

This asset management plan for the Town of Amherstburg is produced in compliance with Ontario Regulation 588/17. The July 2025 deadline under the regulation—the third of three AMPs—requires analysis of core assets (roads, bridges and culverts, water, wastewater, and stormwater) and non-core assets.

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

Asset Category	Source of Funding
Road Network	
Bridges & Culverts	
Stormwater Network	
Buildings & Facilities	
Vehicles	Tax Levy
Machinery & Equipment	
Land Improvements	
Natural Assets	
Water Network	
Wastewater Network	User Rates

2.2   Deriving Replacement Costs

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

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

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

When performing projections for future funding requirements, a 3% CPI was used. This conservative estimate forms a balance between the federal target inflation rate of 2% and recent higher inflation rates of 3-6%.

2.3   Estimated Useful Life and Service Life Remaining

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

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

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

2.4   Reinvestment Rate

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

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

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

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

2.5   Deriving Asset Condition

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

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

Condition	Description	Criteria	Service Life Remaining (%)
Very Good	Fit for the future	Well maintained, good condition, new or recently rehabilitated	80-100
Good	Adequate for now	Acceptable, generally approaching mid-stage of expected service life	60-79
Fair	Requires attention	Signs of deterioration, some elements exhibit significant deficiencies	40-59
Poor	Increasing potential of affecting service	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20-39
Very Poor	Unfit for sustained service	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	0-19

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition.
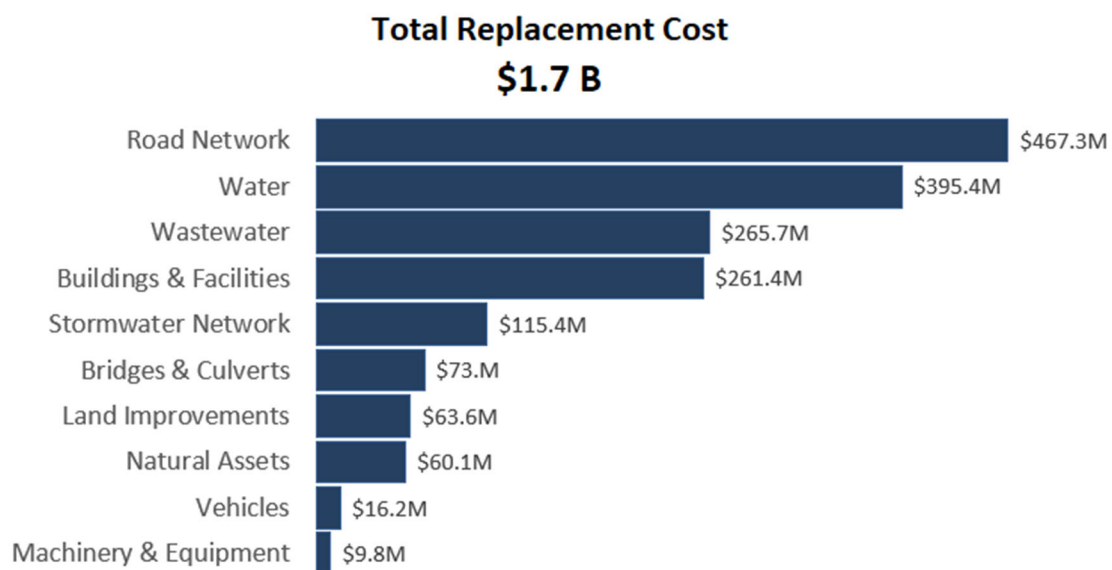
3 Portfolio Overview

Key Insights

- The total replacement cost of the Town's asset portfolio is $1.7 billion
- The Town's target re-investment rate is 1.9%, and the actual re-investment rate is 0.8%, contributing to an expanding infrastructure deficit
- 75% of all assets are in fair or better condition
- 13% of assets are projected to require replacement in the next 10 years
- Annual funding required to sustain the adopted Level of Service (LOS) total $20.2 million per year across all tax levy assets
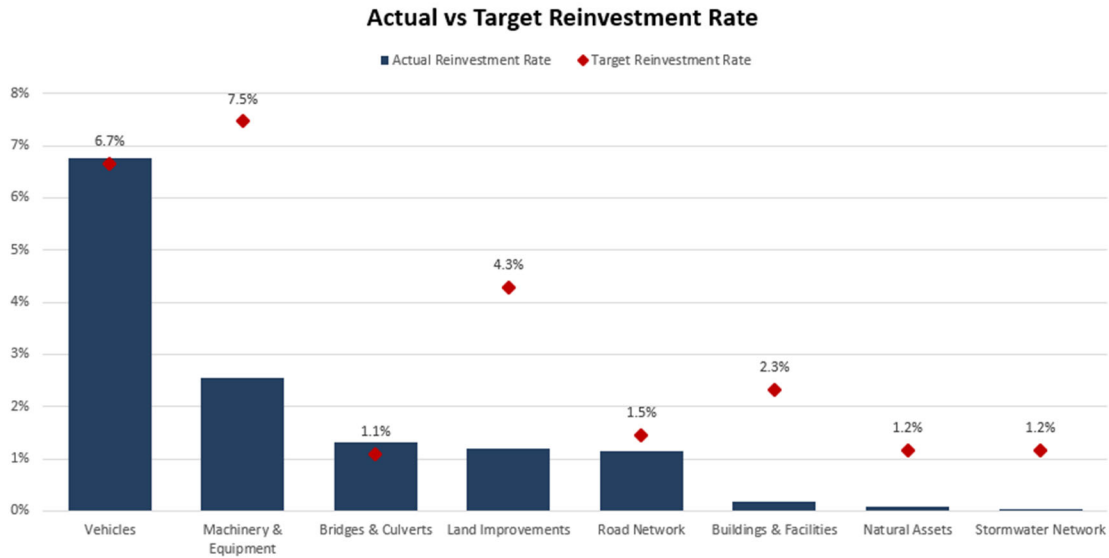
3.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of $1.7 billion based on inventory data from 2024. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Total Replacement Cost
$1.7 B

Category	Cost
Road Network	$467.3M
Water	$395.4M
Wastewater	$265.7M
Buildings & Facilities	$261.4M
Stormwater Network	$115.4M
Bridges & Culverts	$73.M
Land Improvements	$63.6M
Natural Assets	$60.1M
Vehicles	$16.2M
Machinery & Equipment	$9.8M

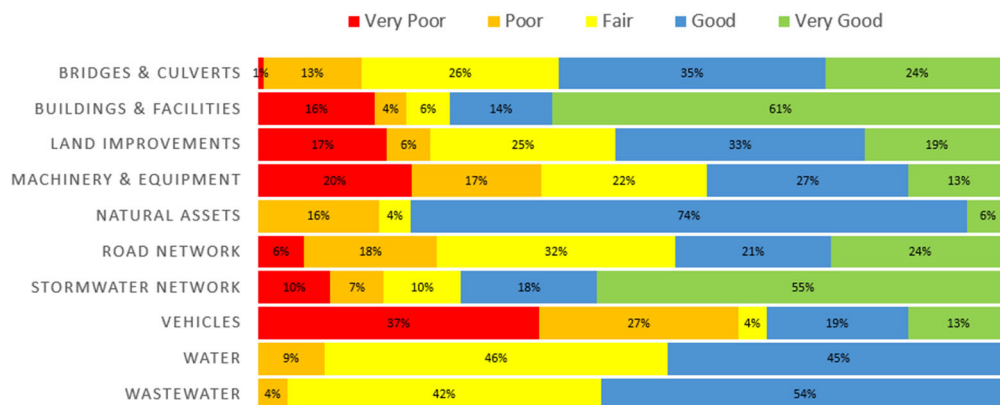# 3.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To sustain the adopted Levels of Service (LOS), from the 2022 AMP LOS, the Town should be allocating approximately $20.2 million annually for tax levy assets, for a target reinvestment rate of 1.9 %. Actual funding on infrastructure, based on average annual spend from the 5-year capital plan totals approximately $8.9 mil for an actual reinvestment rate of 0.8%

Actual vs Target Reinvestment Rate

■ Actual Reinvestment Rate   ◆ Target Reinvestment Rate

Asset Category	Actual	Target
Vehicles	6.7%	6.7%
Machinery & Equipment	2.5%	7.5%
Bridges & Culverts	1.3%	1.1%
Land Improvements	1.2%	4.3%
Road Network	1.1%	1.5%
Buildings & Facilities	0.2%	2.3%
Natural Assets	0.1%	1.2%
Stormwater Network	0.0%	1.2%

The target reinvestment rate shows the required funding to sustain the adopted Level of Service. The actual reinvestment rate shows the average annual funding from the current 5-year capital plan. It should be noted that these funding levels may be adjusted between asset categories from year to year depending on the asset replacement needs.

3.3   Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 75% of tax levy assets in Amherstburg are in fair or better condition. The average condition of tax levy assets is 64%(Good). This estimate relies on both age-based and field condition data.

Legend: ■ Very Poor   ■ Poor   ■ Fair   ■ Good   ■ Very Good

Asset Category	Very Poor	Poor	Fair	Good	Very Good
BRIDGES & CULVERTS	1%	13%	26%	35%	24%
BUILDINGS & FACILITIES	16%	4%	6%	14%	61%
LAND IMPROVEMENTS	17%	6%	25%	33%	19%
MACHINERY & EQUIPMENT	20%	17%	22%	27%	13%
NATURAL ASSETS		16%	4%	74%	6%
ROAD NETWORK	6%	18%	32%	21%	24%
STORMWATER NETWORK	10%	7%	10%	18%	55%
VEHICLES	37%	27%	4%	19%	13%
WATER		9%	46%	45%	
WASTEWATER		4%	42%	54%	

This AMP relies on assessed condition data for 50% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	Road Surfaces	100%	2021 Road Needs Study, plus recent rehabilitation & replacements
	Sidewalks, Signalized Crossings	100%	Staff Assessments
	All other	0%	Age-based
Bridges & Culverts	All	100%	2024 OSIM Report
Storm Water Network	Stormwater Pipes	0%	Age-based
	Stormwater Ponds	100%	Staff Assessments
	Municipal Drains	0%	Age-based
	All other	0%	Age-based
Buildings	Buildings	49%	2020 Building Condition Assessment of 19 out of 39 buildings; augmented by staff input
	Municipal Parking Lots	100%	Staff Assessments
Vehicles	All	0%	Age-based
Machinery & Equipment	All	0%	Age-based
Natural Assets	Trees	100%	Staff Assessments
	All	0%	Age-based
Water Network	All	100%	Good/Fair/Poor - OWCA AMP
Wastewater Network	All	100%	Good/Fair/Poor - OCWA AMP

3.4   Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 13% of the Town's assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix A.

3.5   Proposed Level of Service (LOS) – Adopted by Council

As per O. Reg. 588/17, the Town is required to establish proposed levels of service for the 2025 AMP.

On July 8th, 2024, Council received the "2024 Asset Management Update" which sought Council's direction on proposed Levels of Service for the 2025 Asset Management Plan. Council had the option to consider setting a higher, or lower, level of service on some or all assets or to affirm the current LOS targets remain as our target for the 2025 AMP.

As per Council Resolution 20240708-010, Council approved that Level of Service targets for the 2025 AMP would remain as defined in the 2022 AMP. Sustaining the condition allocation from the 2022 AMP is a valid target for the municipality particularly since it will be some time before the Town has eliminated its funding gap. Therefore, proposed levels of service are to remain consistent with 2022 levels of service. Since Council has already made the decision for the proposed level of service, it will be referred to as the Adopted Level of Service within this Asset Management Plan.

In addition, this decision was appropriate based on the level of asset management data maturity. The organization needed to focus on inventory of assets and did not have the ability to provide data to support the effects of changes to the LOS. The Town of Amherstburg has updated the data in the centralized asset management software and is implementing a maintenance system to capture maintenance work against the assets. Moving forward, data will be consistently updated to make better use of the available tools
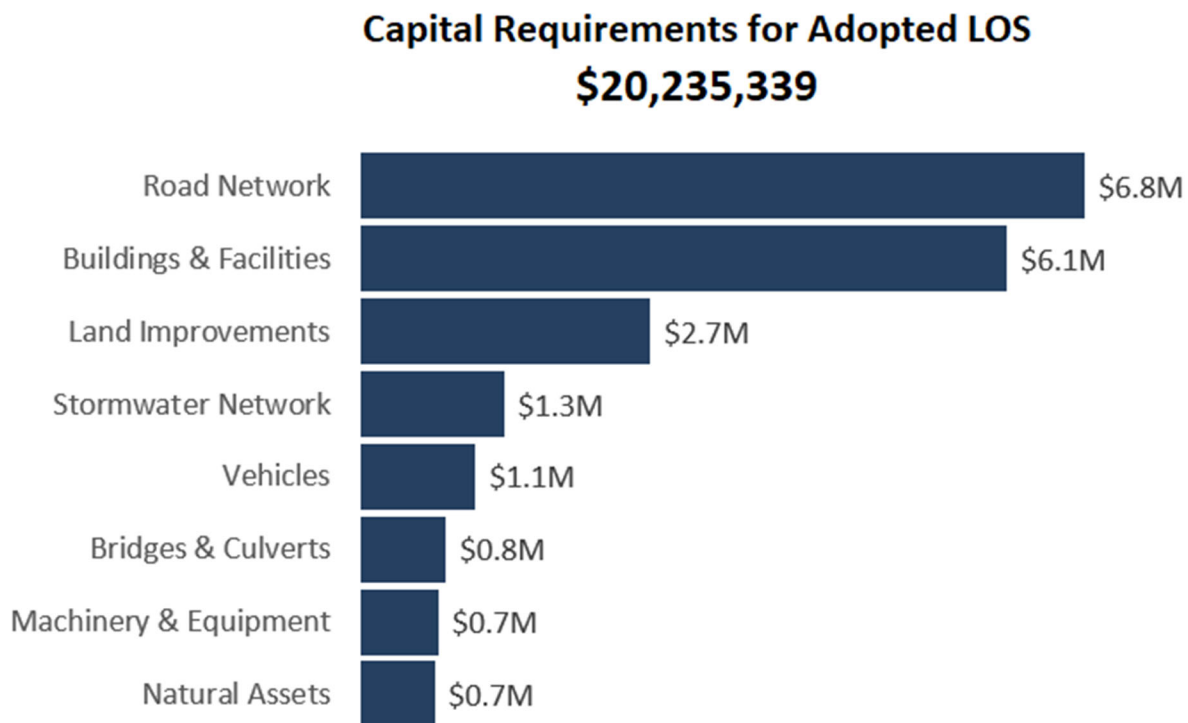
In many areas, maintaining the proposed/adopted LOS is not immediately achievable without additional funding. The municipality should continue the financial strategy of annually increasing the funding for asset reserves.

Each asset section contains the level of funding, condition and risk of the assets associated with the council adopted levels of service. In addition, the adopted levels of service from the 2022 AMP are listed in order to compare to current levels of service, as detailed in sections 4.2-13.2.

Appendix C shows the condition levels over the next 10 years that are predicted with no changes to the current level of funding as defined by the 5 Year Capital Plan - Average Annual spending.
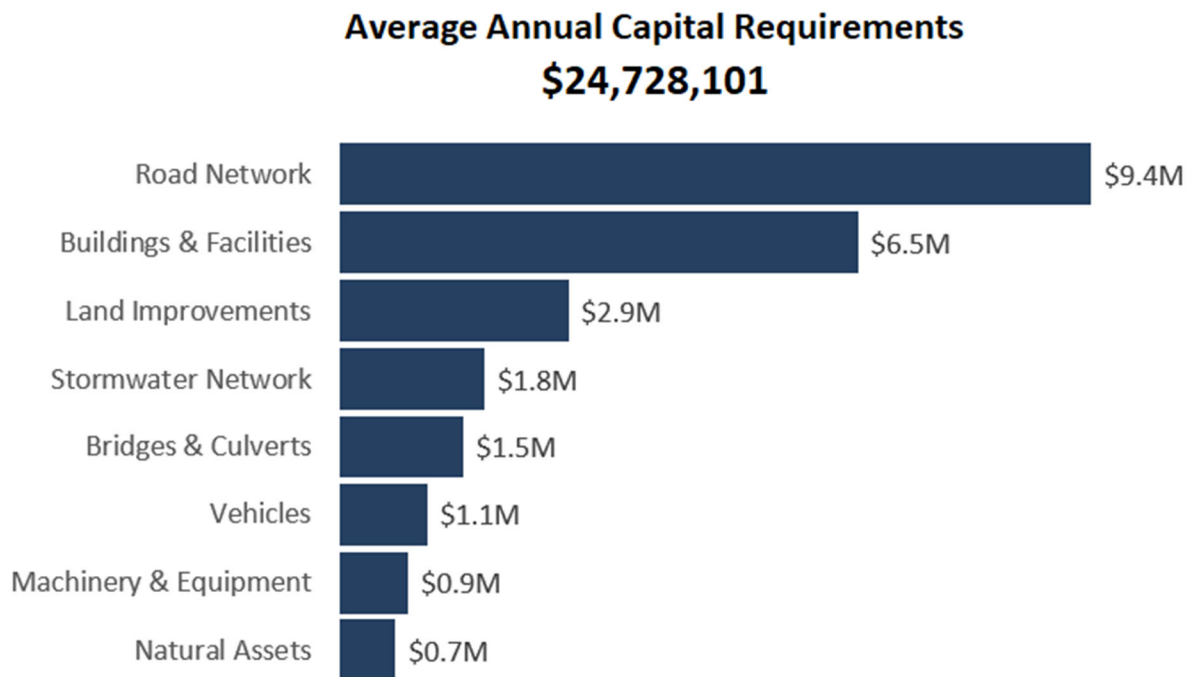
3.6 Adopted LOS Capital Requirements

The funding required to address the adopted Level of Service in order to maintain the 2022 AMP levels of service of condition and levels of risk has been projected. This is a lower level of service than Average Annual Requirements since some assets will need to be kept past the end of their useful life or have delayed replacement. The Town would need to allocate approximately $20.2 million annually to maintain the adopted LOS.
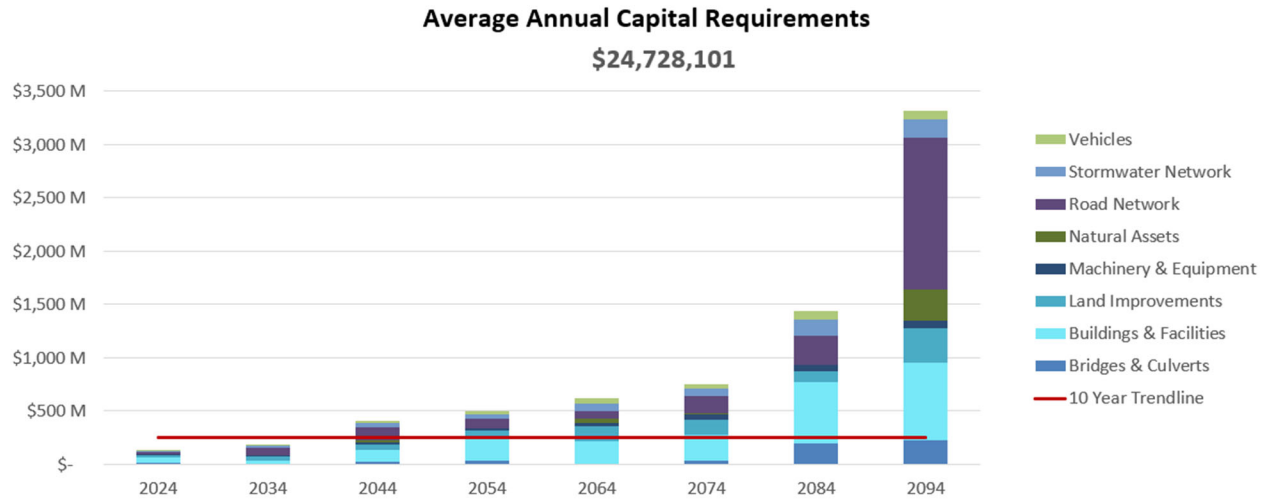
Capital Requirements for Adopted LOS
$20,235,339

Asset	Requirement
Road Network	$6.8M
Buildings & Facilities	$6.1M
Land Improvements	$2.7M
Stormwater Network	$1.3M
Vehicles	$1.1M
Bridges & Culverts	$0.8M
Machinery & Equipment	$0.7M
Natural Assets	$0.7M

3.7 Average Annual Capital Requirements

The development of a long-term capital forecast should include both asset rehabilitation and replacement requirements. The annual average requirement needed to meet the funding level to replace the assets when they have reached the end of their useful life has been projected. Note that this represents a higher level of service than the adopted LOS and requires higher funding levels in order to meet this higher level of service.

Average Annual Capital Requirements
$24,728,101

Category	Amount
Road Network	$9.4M
Buildings & Facilities	$6.5M
Land Improvements	$2.9M
Stormwater Network	$1.8M
Bridges & Culverts	$1.5M
Vehicles	$1.1M
Machinery & Equipment	$0.9M
Natural Assets	$0.7M

With the development of asset-specific lifecycle strategies that include the timing and cost of future capital events, the Town can produce an accurate long-term capital forecast. The following graph identifies capital requirements over the next 80 years in order to fund asset replacement at end of life. The forecasted requirements are aggregated into 10-year bins.

Average Annual Capital Requirements

$24,728,101

Legend:
- Vehicles
- Stormwater Network
- Road Network
- Natural Assets
- Machinery & Equipment
- Land Improvements
- Buildings & Facilities
- Bridges & Culverts
- 10 Year Trendline

4 Road Network

The road network is a critical component of the provision of safe and efficient transportation services. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including sidewalks, streetlights, signalized crossings, right-of-way (ROW) structures & right-of-way (ROW) trails.

The state of the infrastructure for the road network is summarized in the following table.

Replacement Cost	Condition	Adopted LOS Annual Requirement
$467 million	Fair (59 %)	$6.8 million

4.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Town's road network inventory. The average annual requirement projects the necessary funding to replace the asset when it is due for replacement at the end of its useful life. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)
Asphalt Road Surface (Rural)	75.1 km	$ 63,829,880	$ 1,759,821
Gravel Road Surface	33.6 km	$ 482,362	$ 24,118
Multi-Type Road Surface (Urban)	103.7 km	$ 337,286,399	$ 5,916,991
ROW Structures	12	$ 460,000	$ 9,600
ROW Trails	20	$ 7,941,089	$ 132,351
Sidewalks	68.9 km	$ 18,372,359	$ 612,412
Signalized Crossings	8	$ 2,950,000	$ 73,556
Streetlights	2,157	$ 12,677,500	$ 422,583
Tar & Chip Road Surface	31.8 km	$ 23,329,833	$ 445,575
Total		**$ 67,329,422**	**$ 9,397,008**

Total Replacement Cost
$467.3 M

Multi-Type Road Surface (Urban)	$337.3M
Asphalt Road Surface (Rural)	$63.8M
Tar & Chip Road Surface	$23.3M
Sidewalks	$18.4M
Streetlights	$12.7M
ROW Trails	$7.9M
Signalized Crosssings	$3.M
Gravel Road Surface	$0.5M
ROW Structures	$0.5M

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

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

Increase from 2022 AMP	Cost
New Assets	$66,682,152
Replacement $ Increase	$177,616,271
Total	$244,298,422

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs of existing assets.

4.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Yrs)	Average Age (Years)	Average Condition
Asphalt Road Surface (Rural)	25-75	29.1	Good (63%)
Gravel Road Surface	N/A	N/A	Fair (49%)
Multi-Type Road Surface (Urban)	25-75	20.0	Fair (59%)
ROW Structures	50	15.3	Good (68%)
ROW Trails	60	10.4	Very Good (82%)
Sidewalks	30	N/A	Good (74%)
Signalized Crossings	25-45	33.9	Good (60%)
Streetlights	30	39.5	Poor (22%)
Tar & Chip Road Surface	15-54	26.8	Poor (37%)
AVERAGE		41.0	Fair (59%)

Note: Gravel roads typically do not have an estimated useful life since they are reconditioned rather than replaced. Sidewalk data is based on assessed condition and does not currently have data on the age of the asset. There is no install date for 30% of streetlight data.

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.
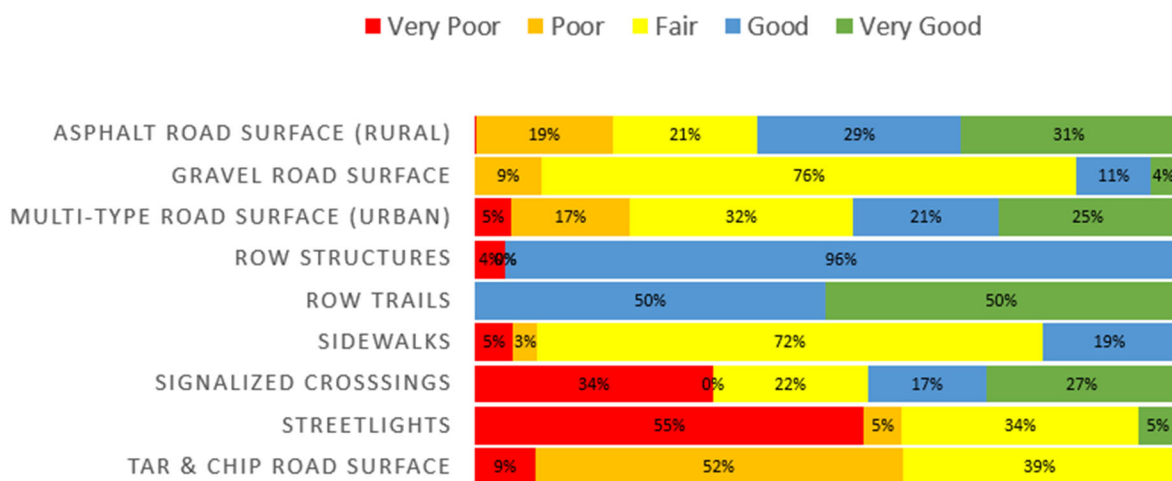
To ensure that the Town's road network continues to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation, and replacement activities is required to increase the overall condition of the roads.

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

4.2.1   Current Approach to Condition Assessment

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

- A Road Needs Study was completed in 2021 that included a detailed assessment of the condition of each road segment. Road rehabilitations and replacements that were completed after 2021 have been updated in the data to reflect current condition. The next Road Needs Study is planned for 2026. The Town is currently determining a suitable frequency going forward, to complete future Road Needs Studies.
- A new sidewalk condition assessment program was developed in 2024. This allows condition assessments to be determined in conjunction with the summer sidewalk inspection for cracks and trip hazards.
- Signalized crossings, including traffic lights and pedestrian crossings, have been assessed for condition by staff.
- The Road Network is assessed by internal staff on an as-needed basis, primarily to identify maintenance requirements.
- Streetlights, ROW trails & ROW structures do not currently have an inspection process in place. They are assessed on an as-needed basis.

In this AMP the following rating criteria is used to determine the current condition of road segments and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

This scale has been adjusted from the previous 2022 Asset Management Plan to align with the assessment scale used by the third party consultant who completed the condition assessment and most other scales within the asset management plan. The previous 2022 AMP scale had an inflated range for the Very Poor, Poor and Fair as (0-40), (40-50), (50-70) respectively. The previous scale would have unduly characterized the roads segments as being in a poorer condition than warranted. The mischaracterization has been remedied in this iteration of the AMP.

4.2.2   Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
54%	59%	⬆

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

4.3　Lifecycle Management Strategy

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

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of Rural-Collector Roads, Tar & Chip Roads, and Urban-Semi Urban Roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Rural-Collector Roads		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Maintenance	5 Years (Repeated while in good condition)
Single Lift Mill and Pave	Rehabilitation	65 Condition
Double Lift Mill and Pave	Rehabilitation	55 Condition
Cold in Place and Overlay	Rehabilitation	40 Years
Single Lift Mill and Pave 2	Replacement	54 Years
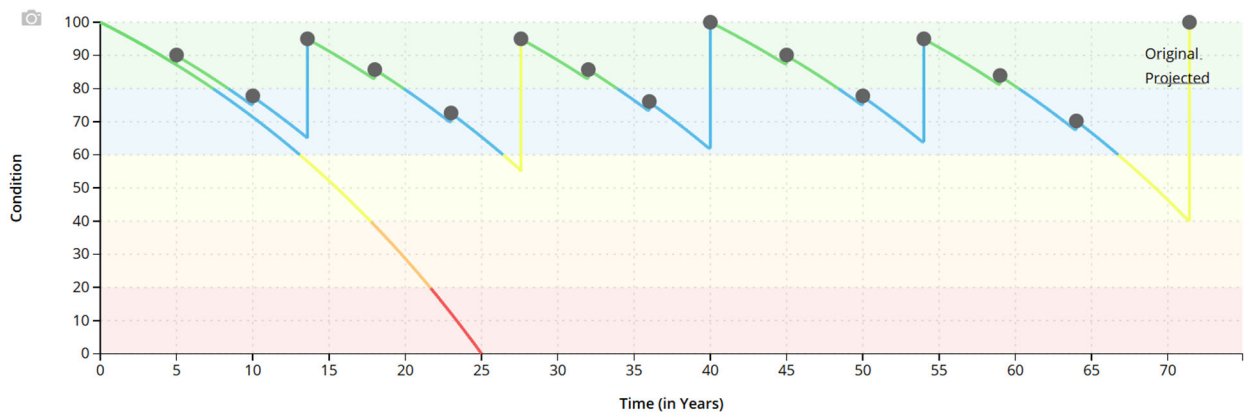
Tar & Chip Roads		
Event Name	**Event Class**	**Event Trigger**
Single Surface Treatment 1	Maintenance	10 Years
Double Surface Treatment 1	Maintenance	20 Years
Single Surface Treatment 2	Maintenance	30 Years
Double Surface Treatment 2	Maintenance	40 Years
Full Reconstruction	Replacement	0 Condition
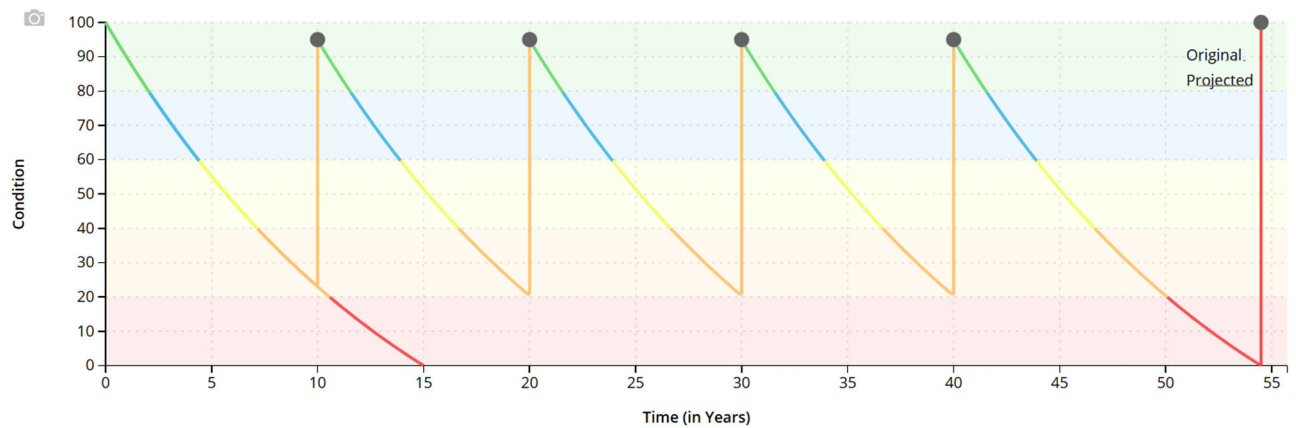
Urban – Semi Urban Roads		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Maintenance	5 Years (Repeated while in good condition)
Single Lift Mill and Pave 1	Rehabilitation	65 Condition
Double Lift Mill and Pave	Rehabilitation	55 Condition
Full Depth Asphalt Removal and Overlay	Rehabilitation	42 Years
Single Lift Mill and Pave 2	Rehabilitation	55 Years
Full Reconstruction	Replacement	30 Condition
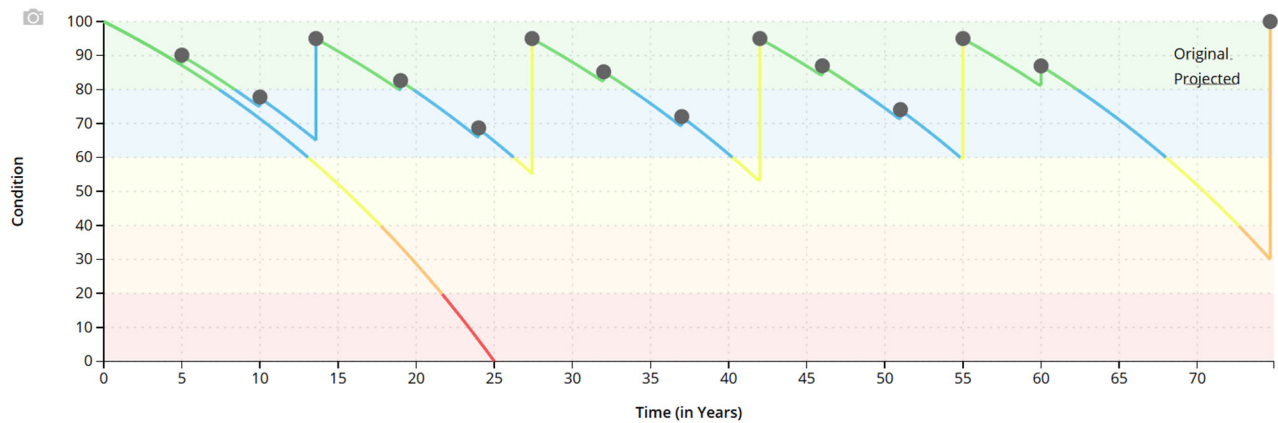
The projected cost of lifecycle activities that would need to be undertaken over the next 10 years to maintain the current assets can be found in Appendix A.

4.3.1　Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

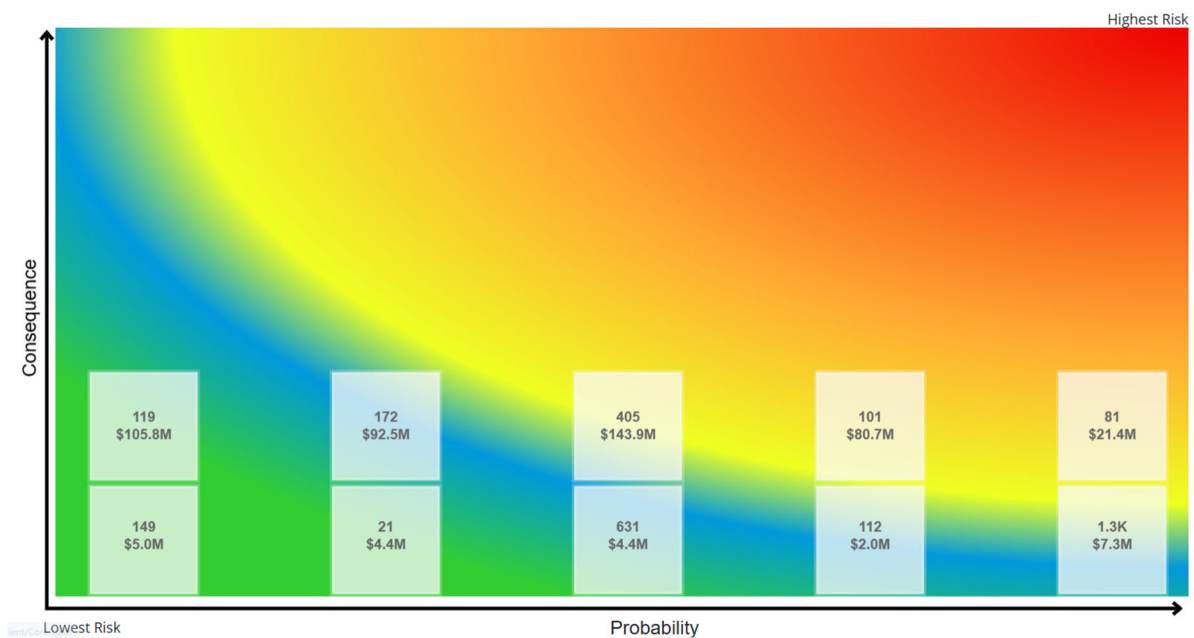| 2022 AMP Average Condition (Adopted LOS)	54%
Adopted LOS Annual Requirement	$6,797,518

The graph below contains the level of funding and forecast condition and risk of the assets associated with the proposed levels of service for the next 100 years. In instances where the condition is less than the proposed LOS, the assets have not reached the end of their useful life and are not due for replacement.
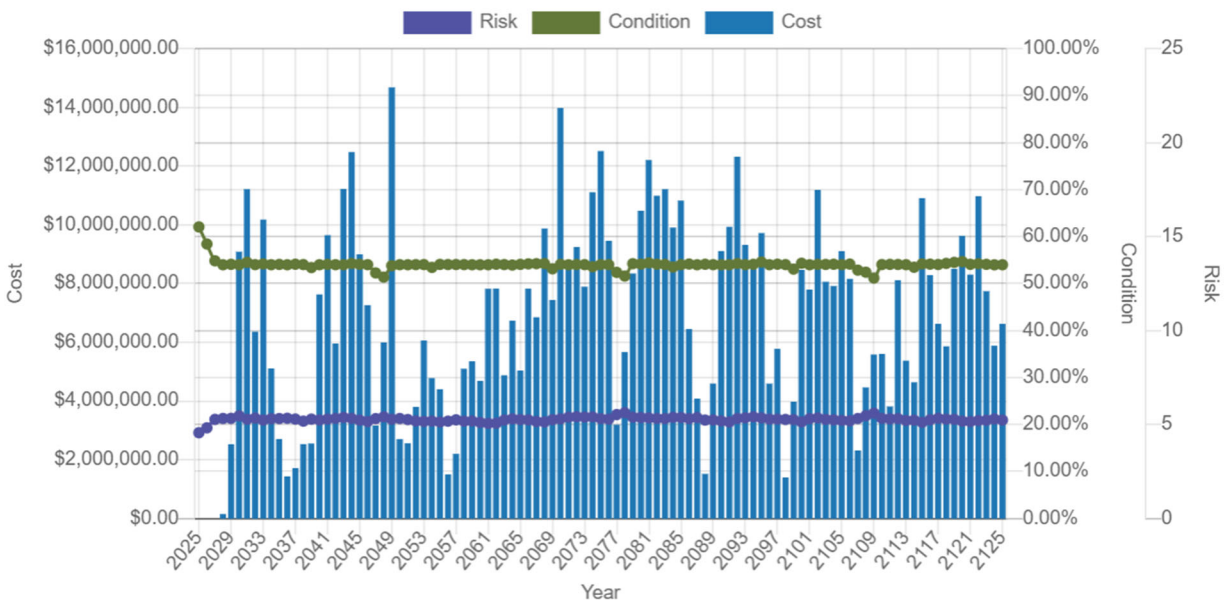
4.4   Risk & Criticality

4.4.1   Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

4.4.2   Risks to Current Asset Management Strategies

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

Aging Infrastructure

Aging infrastructure is the most significant risk Amherstburg faces, as many sections of road are approaching their useful life. This requires timely renewal programs to ensure that roads are in a suitable condition to accommodate traffic loading. Historically, Amherstburg has managed roads reactively, and is now currently developing proactive maintenance and renewal programs. A proactive lifecycle strategy will extend the life of roads and reduce the risk of unexpected failures.

4.5 Levels of Service

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

4.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix B
Safe & Regulatory	Description of minimum maintenance standards for road network (road surfaces and sidewalks) and Winter Maintenance Level of Service Policy	The Town complies with the Minimum Maintenance Standards at a minimum, and goes above the minimum mintenance standards in many cases for the road network.
Quality	Description or images that illustrate the different levels of road class pavement condition	The Town completed a Road Management Study in 2021 in coordination with Golder Associates Ltd. Every road section received a surface condition rating (0-100) based on the types, severities and densities of the distress observed. The PCI is rated on a scale from 0 to 100, with 0 being very poor and 100 being excellent. The PCI aligns with the AMP condition levels.

4.5.2   Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0.01 km/ km^2
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	00.97 km/ km^2
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	1.64 km/km^2
	# of O&M FTEs per 10km of road network	0.29 FTE per 10km
Safe & Regulatory	% of signs inspected for reflectivity	100%
Affordable	Winter control costs / lane-km	$412/lane-km
	Annual capital reinvestment rate	1.1%
Quality	Average pavement condition index for paved roads in the municipality	54%
	Average surface condition for unpaved roads in the municipality (e.g. excellent, good, fair, poor)	Fair

4.6   Recommendations

Condition Assessment Strategies

- Although many of the streetlight bulbs have been replaced, the majority of poles are still original assets. The Town should proactively assess street lights to understand the true life remaining of the poles.

Lifecycle Management Strategies

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

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- The roads capital renewal backlog should be resourced and prioritized using the risk frameworks developed.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

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

5 Bridges & Culverts

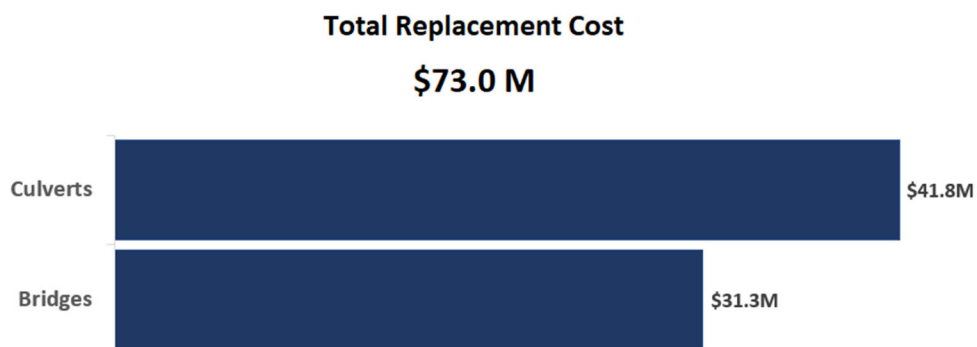Bridges and culverts represent a critical portion of the transportation services provided to the community.

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

Replacement Cost	Condition	Adopted LOS Annual Requirement
$73.0 million	Good (72%)	$0.8 million

5.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Town's bridges and culverts inventory. The average annual requirement projects the necessary funding to replace the asset when it is due for replacement at the end of its useful life. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)	
Bridges	25	$31,260,000	$	471,451
Culverts	83	$41,766,000	$	1,071,802
Total		**$73,026,000**	**$**	**1,543,253**

Total Replacement Cost

$73.0 M

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

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

Increase from 2022 AMP	Cost
New Assets	$4,658,820
Replacement $ Increase	$7,749,180
Total	**$12,408,000**

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs.

5.2   Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost, utilizing the bridge condition index (BCI) scores from the 2024 OSIM report.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Bridges	75-80	47.1	Good (75%)
Culverts	25-80	35.5	Good (74%)
Average		**38.3**	**Good (74%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.
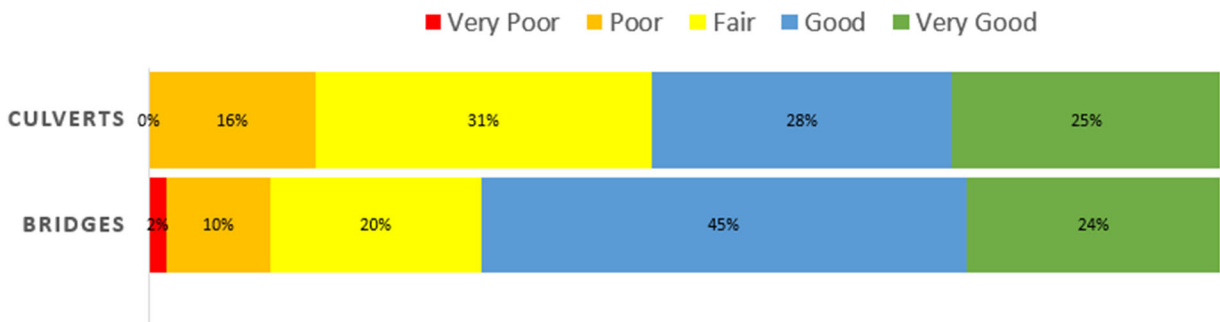
Note: Very poor condition bridge has been taken out of service.

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

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.

5.2.1   Current Approach to Condition Assessment

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

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 meters are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM)

In this AMP, the following rating criteria is used to determine the current condition of bridges and culverts and forecast future capital requirements:

Condition	Rating
Very Good	85-100
Good	70-84
Fair	60-69
Poor	30-59
Very Poor	0-29

5.2.2   Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
67%	74%	⬆

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

5.3 Lifecycle Management Strategy

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

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)

5.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

2022 AMP Average Condition (Adopted LOS)	67%
Adopted LOS Annual Requirement	$801,482

The graph below contains the level of funding and forecast condition and risk of the assets associated with the proposed levels of service for the next 40 years. In instances where the condition is less than the proposed LOS, the assets have not reached the end of their useful life and are not due for replacement.
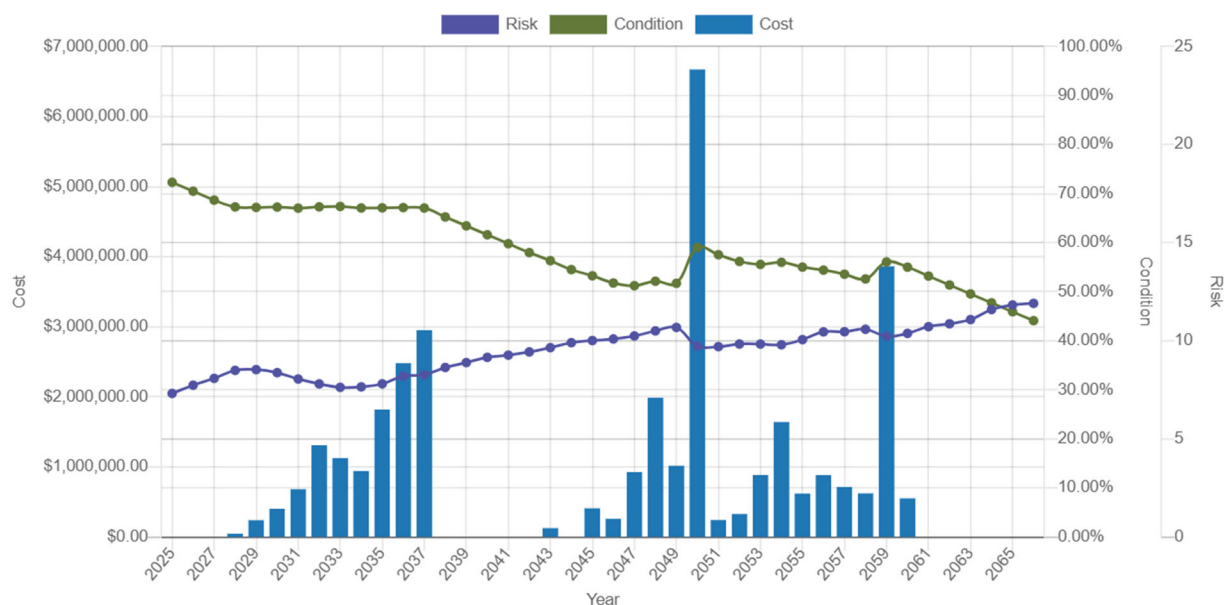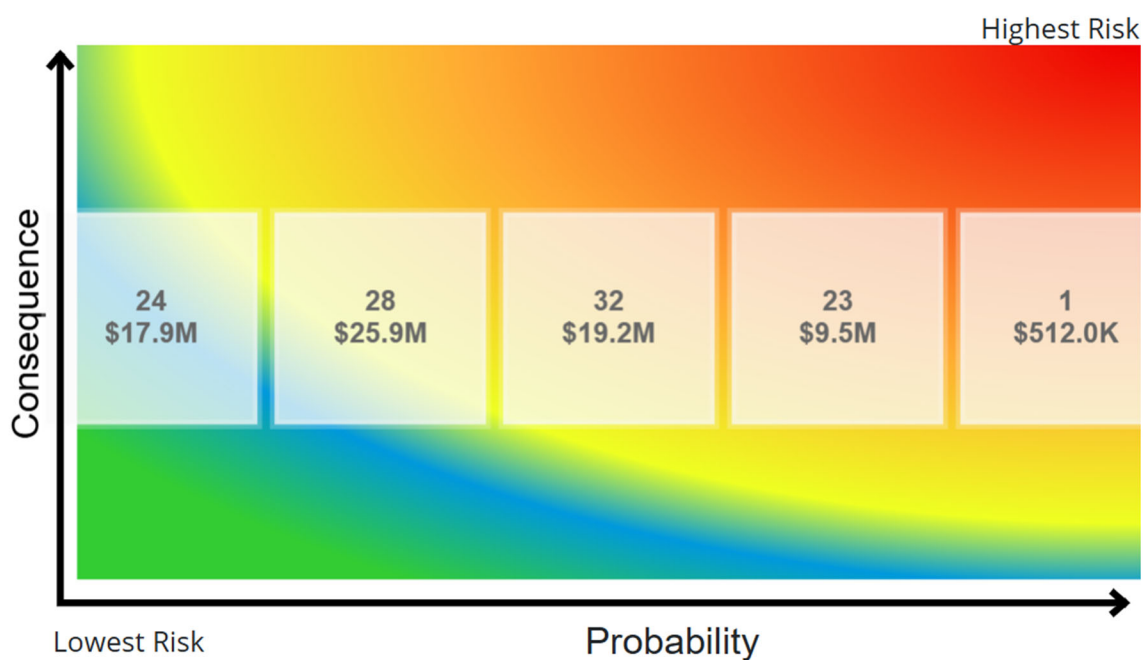

Note: This does not take into account required maintenance activities that will be required as part of future OCIM inspections.

5.4   Risk & Criticality

5.4.1   Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

5.4.2 Risks to Current Asset Management Strategies

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

Aging Infrastructure & Capital Funding Strategies

Amherstburg owns and maintains a significant number of structural bridges and culverts, which many are approaching the end of their service life. Rehabilitating these structures are costly, often requiring external grant funding, such as the Ontario Community Infrastructure Fund (OCIF). Uncertainty with senior government could pose a risk of deferring critical repairs. Prioritizing bridges that are higher risk can optimize the limited funding available.

5.5 Levels of Service

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

5.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of the municipal transportation network. None of the Town's structures have loading or dimensional restrictions meaning that most types of vehicles, including heavy transport, emergency vehicles, and cyclists can cross them without restriction.
Quality	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	See Appendix B (One bridge in very poor condition has been removed from service)

5.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Scope	% of bridges in the Town with loading or dimensional restrictions	0
	# of FTEs per 10 structures	0.65
Safe & Regulatory	% of bridges and structural culverts inspected every two years	100%
Affordable	Annual capital reinvestment rate	1.3%
Quality	Average bridge condition index value for bridges in the Town	70
	Average bridge condition index value for structural culverts in the Town	72

5.6   Recommendations

Data Review/Validation

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

Risk Management Strategies

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

Lifecycle Management Strategies

- This AMP assumes that the Town will undertake the reconstruction and renewal activities specified in the 2024 OSIM report, during the recommended timelines. The Town should update these projections to account for coordination opportunities, resourcing, and true project costs.
- The Town should develop a projection of lifecycle costs associated with bridges and culverts to include in the analysis of future funding requirements

Levels of Service

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

6 Stormwater Network

The Town is responsible for owning and maintaining a stormwater network of storm mains, catch basins, municipal drain (MD) pumping stations and other supporting infrastructure.

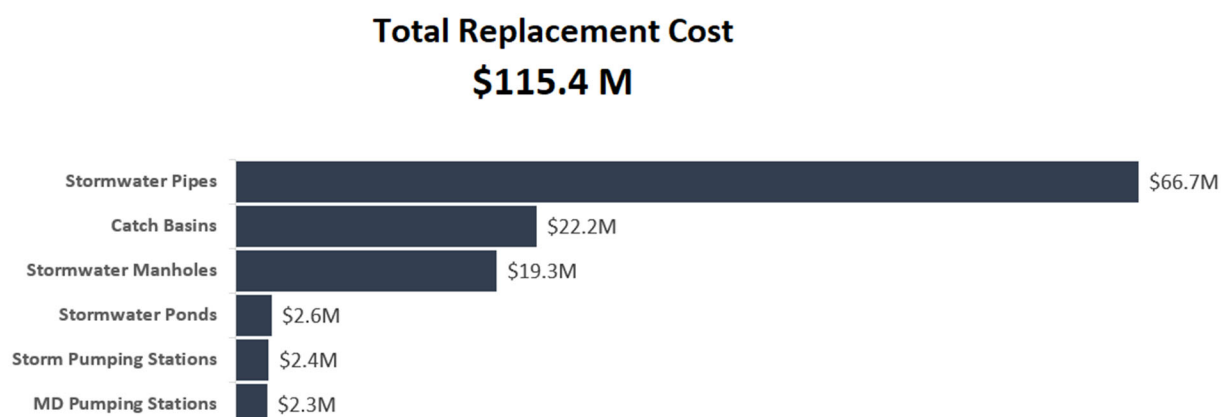The state of the infrastructure for the stormwater network is summarized in the following table.

Replacement Cost	Condition	Adopted LOS Annual Requirement
$115 million	Good (72%)	$1.3 million

6.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Town's stormwater network inventory. The average annual requirement projects the necessary funding to replace the asset when it is due for replacement at the end of its useful life. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)
Catch Basins	2,959	$ 22,192,500	$ 443,850
MD Pumping Stations	8	$ 2,272,680	$ 56,654
Storm Pumping Stations	2	$ 2,400,000	$ 50,800
Stormwater Manholes	1,283	$ 19,260,000	$ 256,800
Stormwater Pipes	107.3 km	$ 66,696,534	$ 872,783
Stormwater Ponds	13	$ 2,600,000	$ 130,000
TOTAL		**$ 115,421,714**	**$ 1,810,887**

Note: Municipal drain (MD) pumping station costs reflect only the Town of Amherstburg's financial obligation for the municipal drain.

Total Replacement Cost
$115.4 M

Stormwater Pipes	$66.7M
Catch Basins	$22.2M
Stormwater Manholes	$19.3M
Stormwater Ponds	$2.6M
Storm Pumping Stations	$2.4M
MD Pumping Stations	$2.3M

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

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

| Increase from 2022 AMP	Cost
New Assets	$10,799,701
Replacement $ Increase	$46,828,013
Total	**$57,627,714**

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs

6.2 Asset Condition & Age

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

Asset Segment	Estimate Useful Life (Yrs)	Average Age (Years)	Average Condition
Catch Basins	50	29.8	Fair (44%)
Municipal Drain Pumping Stations	50	37.7	Poor (27%)
Storm Pumping Stations	50	18.5	Good (63%)
Stormwater Manholes	75	32.4	Fair (57%)
Stormwater Pipes	75	25.9	Very Good (88%)
Stormwater Ponds	100	70.3	Good (67%)
AVERAGE		**29.4**	**Good (72%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.
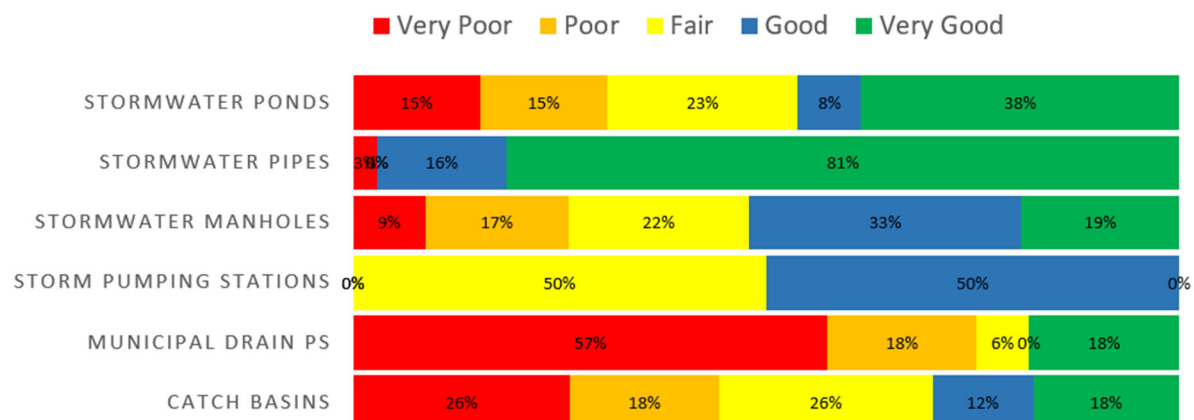
To ensure that the Town's stormwater network continues to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the stormwater network.

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.

6.2.1   Current Approach to Condition Assessment

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

- CCTV inspections have been performed on a majority of storm mains in the system.
- There are no formal condition assessment programs in place for the stormwater network

In this AMP the following rating criteria is used to determine the current condition of stormwater assets and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

6.2.2 Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
61%	72%	⬆

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

6.3 Lifecycle Management Strategy

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

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

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

Activity Type	Description of Current Strategy
Maintenance	CCTV inspections have been completed on approximately 60% of the stormwater pipes to identify required maintenance and condition of the pipes.
Preventative Maintenance	System flushing is performed 20% annually
Rehabilitation/ Replacement	Relining of pipes is considered as an option instead of replacement only on busier roads
	Pumping stations require a pump replacement halfway through their estimated useful life.

The following lifecycle strategy has been developed as a proactive approach to managing the lifecycle of Stormwater pipes. Instead of allowing the storm pipes to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of the pipes at a lower total cost.

| Stormwater Pipes		
Event Name	Event Class	Event Trigger
Storm Pipe Flushing	Maintenance	Once Every 5 Years
Storm Pipe Re-lining	Rehabilitation	Once over its lifetime (at 65 years)
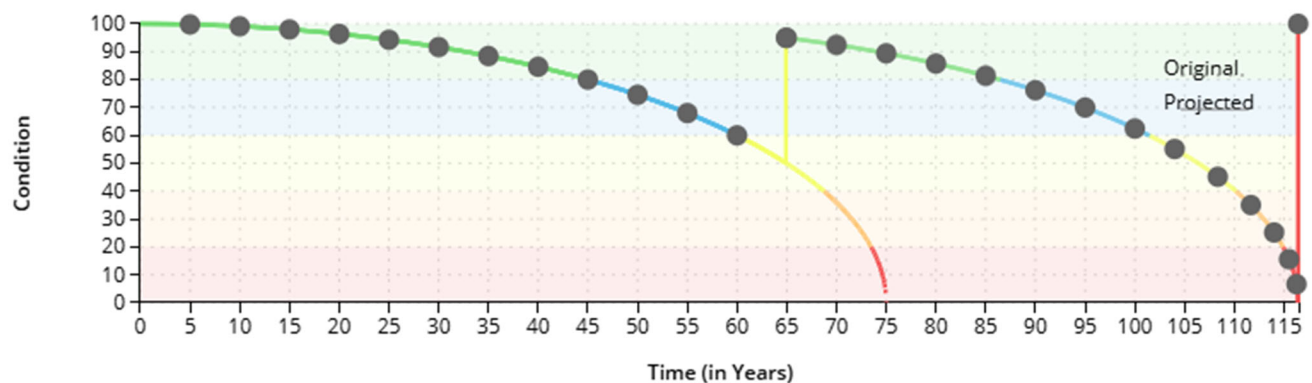
The projected cost of lifecycle activities that would need to be undertaken over the next 10 years to maintain the current assets can be found in Appendix A.

6.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

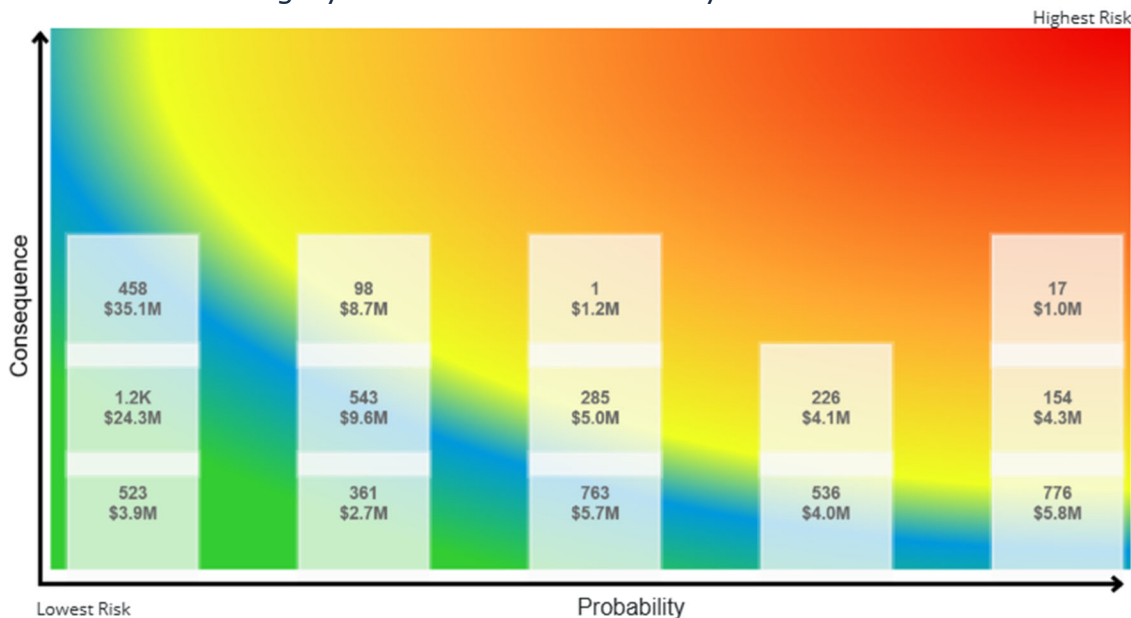| 2022 AMP Average Condition (Adopted LOS)	61%
Adopted LOS Annual Requirement	$1,346,190

The graph below contains the level of funding and forecast condition and risk of the assets associated with the adopted levels of service for the next 100 years. In instances where the condition is less than the adopted LOS, the assets have not reached the end of their useful life and are not due for replacement.
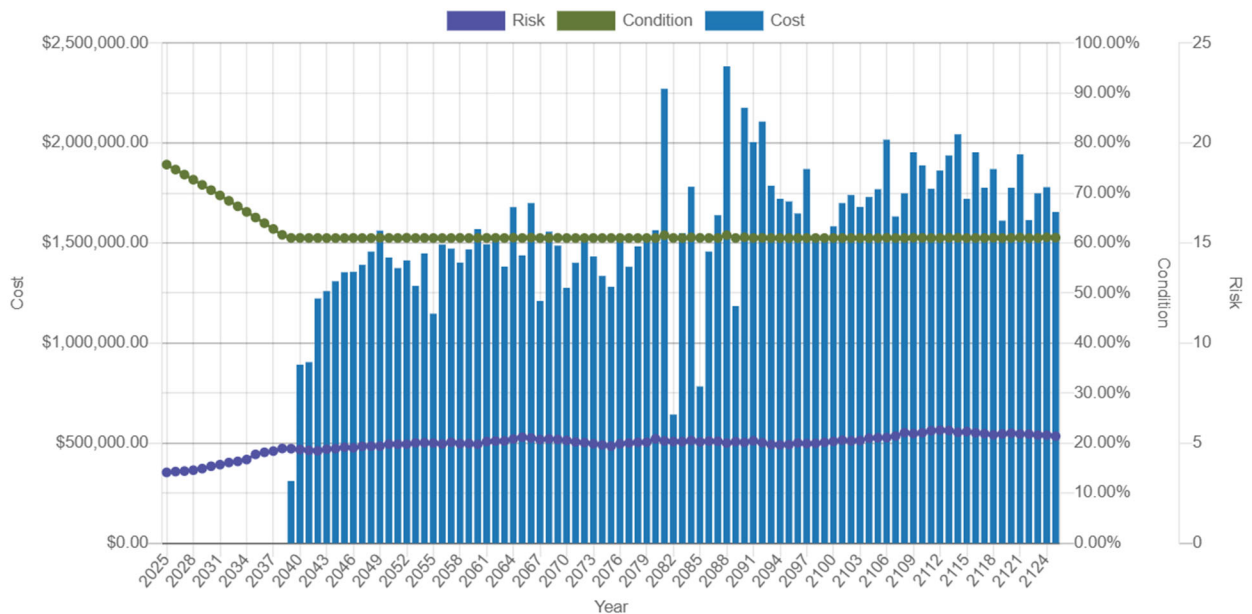
6.4 Risk & Criticality

6.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

Town staff should review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

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

6.4.2 Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events

Climate change and extreme weather are the biggest risk factors when managing the stormwater network. During heavy rainfall events, stormwater can infiltrate into the wastewater system, effectively reducing the capacity of these pipes. Planning for these uncertain events is critical.

6.5 Levels of Service

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

6.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include map, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater system	See Appendix B

6.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Accessible & Reliable	% of residents serviced by stormwater network	100%
	# of O&M FTEs / 10 km of Sewers	0.66 FTE per 10km
Safe & Regulatory	% of properties in municipality resilient to a 100-year storm	TBD
	% of the municipal stormwater management system resilient to a 5-year storm	TBD
Affordable	Annual capital reinvestment rate	0.01%
Sustainable	% of the stormwater network that is in good or very good condition	73%
	% of the stormwater network that is in poor or very poor condition	17%
	Condition Assessment Cycle (report as a percentage. For example, if the network is assessed every 4 years, report as 25%)	10%

6.6 Recommendations

Condition Assessment Strategies

- The system-wide assessment of the condition of all assets in the stormwater network through CCTV inspections should continue. These inspections are anticipated to be completed in the next few years.

Risk Management Strategies

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

Lifecycle Management Strategies

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

Levels of Service

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

7 Buildings & Facilities

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

- administrative offices
- public library
- recreation centres
- fire stations and associated offices and facilities
- parks buildings (eg washrooms)
- public works garages and storage sheds
- police station
- municipal parking lots

The state of the infrastructure for the buildings and facilities is summarized in the following table.

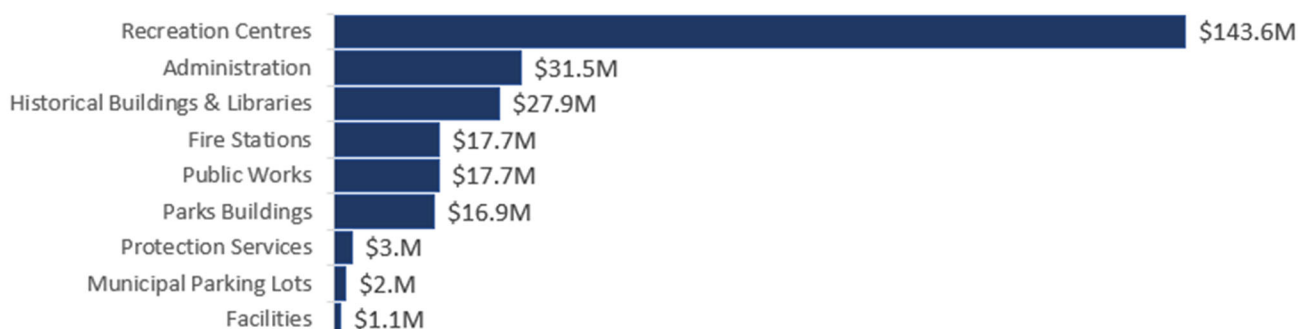| Replacement Cost	Condition	Adopted LOS Annual Requirement
$261 million	Good (69%)	$6.1 million

7.1   Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Town's buildings and facilities inventory. The annual capital requirement for end of useful life replacement projects funding to replace the asset when it is due for replacement. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Water and wastewater buildings are not included in this section. Since they are funded through water & wastewater rates, they are grouped in the Water and Wastewater sections respectively.

Asset Segment	Quantity*	Replacement Cost	Average Annual Requirement (end of life)
Administration	2 (104)	$ 31,509,087	$ 765,508
Facilities	1 (34)	$ 1,107,999	$ 19,505
Fire Stations	2 (108)	$ 17,733,918	$ 1,266,460
Historical Buildings & Library	7 (111)	$ 27,856,443	$ 589,975
Municipal Parking Lots	7	$ 1,980,000	$ 79,200
Parks Buildings	16 (207)	$ 16,884,442	$ 314,842
Protection Services	1 (61)	$ 3,009,332	$ 65,611
Public Works	7 (125)	$ 17,661,682	$ 334,077
Recreation Centres	3 (162)	$ 143,648,469	$ 3,040,052
TOTAL	**46 (912)**	**$ 261,391,372**	**$ 6,475,230**

*Note: Assets/components within the building are indicated in brackets

Total Replacement Cost
$261.4 M

Category	Cost
Recreation Centres	$143.6M
Administration	$31.5M
Historical Buildings & Libraries	$27.9M
Fire Stations	$17.7M
Public Works	$17.7M
Parks Buildings	$16.9M
Protection Services	$3.M
Municipal Parking Lots	$2.M
Facilities	$1.1M

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

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

Increase from 2022 AMP	Cost
New Assets	$19,588,525
Replacement $ Increase	$50,732,847
Total	**$70,321,372**

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs.

7.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost, utilizing staff assessments and updates to the 2021 Building Condition Assessment.

Asset Segment	Estimate Useful Life (Yrs)	Average Age (Years)	Average Condition
Administration	20	31.0	Fair (49%)
Facilities	15-60	37.3	Very Good (85%)
Fire Stations	25	43.8	Fair (51%)
Historical Buildings	20	53.5	Fair (43%)
Municipal Parking Lots	20-25	75.0	Poor (29%)
Parks Buildings	20	35.4	Good (68%)
Protection Services	15-50	36.5	Fair (59%)
Public Works	15-30	41.2	Good (61%)
Recreation Centres	20-75	22.0	Very Good (83%)
AVERAGE		**36.1**	**Good (69%)**

*** Due to the fact that the Libro Recreation Centre is a relatively new building with a high replacement value, the percentage reflected as 'Good' above does not paint an accurate picture of the condition of many of our facilities. Many buildings do not have components (roof, HVAC, windows etc) inventoried, which could decrease the overall condition level. It should also be noted that, due to limited information and high turnover of staff, the building inventory in the last AMP was not accurately captured. The current AMP adds an additional 20 buildings to the current inventory (not including water/wastewater buildings).

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.
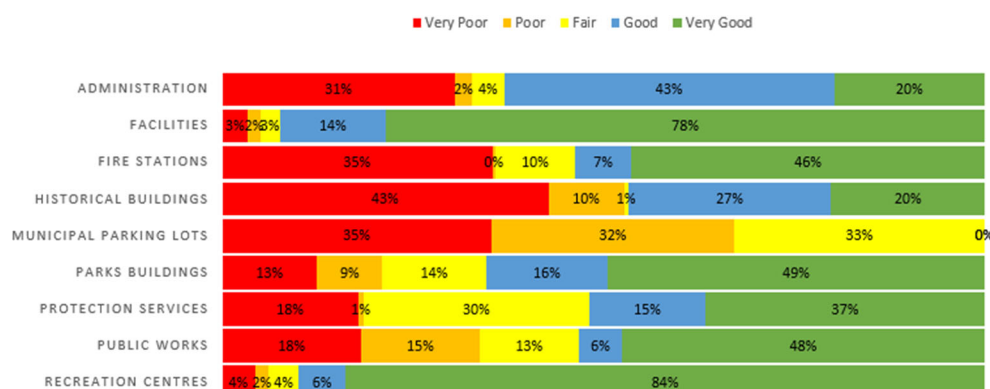
To ensure that the Town's buildings and facilities continues to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the buildings and facilities.

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.

7.2.1 Current Approach to Condition Assessment

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

- A detailed third-party facility condition assessment was undertaken in 2021 for 19 of the 39 buildings (not including water and wastewater). The overall condition, costs, and recommended work is summarized at a building component level for only 19 buildings in the current inventory. The Town is currently considering updating the data to complete building condition assessments on the remaining buildings. The Town will also implement a suitable frequency to undertake these assessments into the future.
- Municipal buildings are subject to internal inspections on an as-needed basis. Health and safety inspections are undertaken monthly.

In this AMP the following rating criteria is used to determine the current condition of buildings & facilities and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

7.2.2 Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
76%	69%	⬇

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

7.3 Lifecycle Management Strategy

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

| Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Municipal buildings are subject to internal inspections on an as-needed basis. Health and safety inspections are undertaken monthly.
	Maintenance activities are undertaken as a result of internal inspections, prioritizing activities related to health and safety, and regulatory compliance.
	A detailed third-party facility condition assessment was undertaken in 2021 for 19 buildings. However, this is not all of the Town's buildings. The Town will need to undertake these assessments at a prescribed interval in the future. Building condition assessments should be scheduled for the remaining buildings to have a complete picture of the asset management needs of the components of the building.
Replacement	A Space Needs study has been completed and approved in principle in 2024. The Town will need to finalize which buildings will be deemed surplus and take into account the recommendations of the study. These decisions will impact the next 5-20 years of capital planning for facilities.

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

7.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

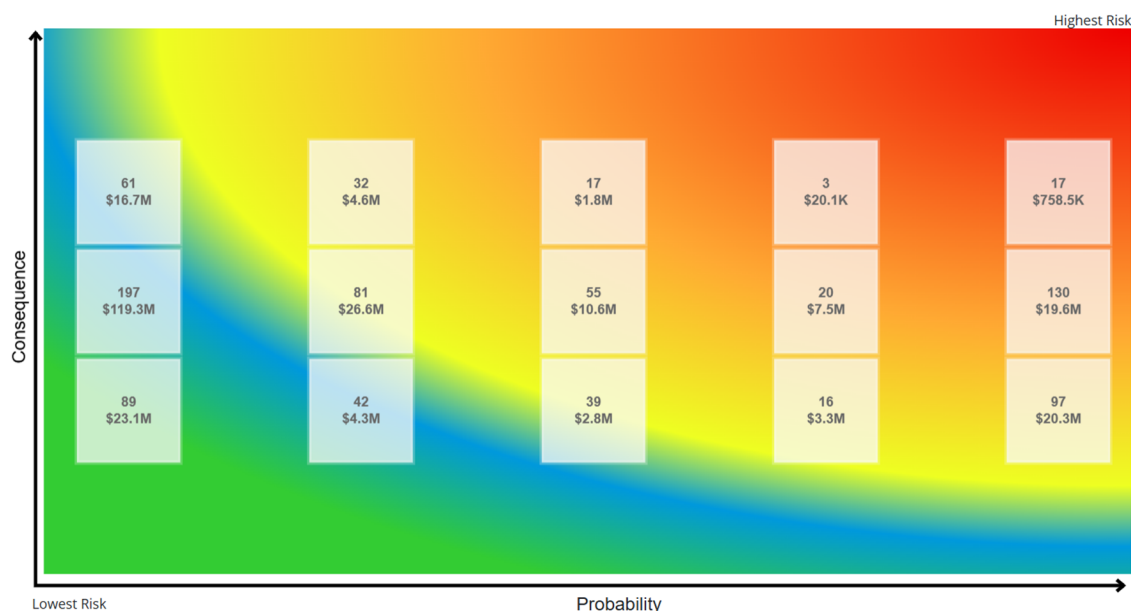| 2022 AMP Average Condition (Adopted LOS)	76%
Adopted LOS Annual Requirement	$6,068,942

The graph below contains the level of funding and forecast condition and risk of the assets associated with the adopted levels of service for the next 100 years. In instances where the condition is less than the adopted LOS, the assets have not reached the end of their useful life and are not due for replacement.
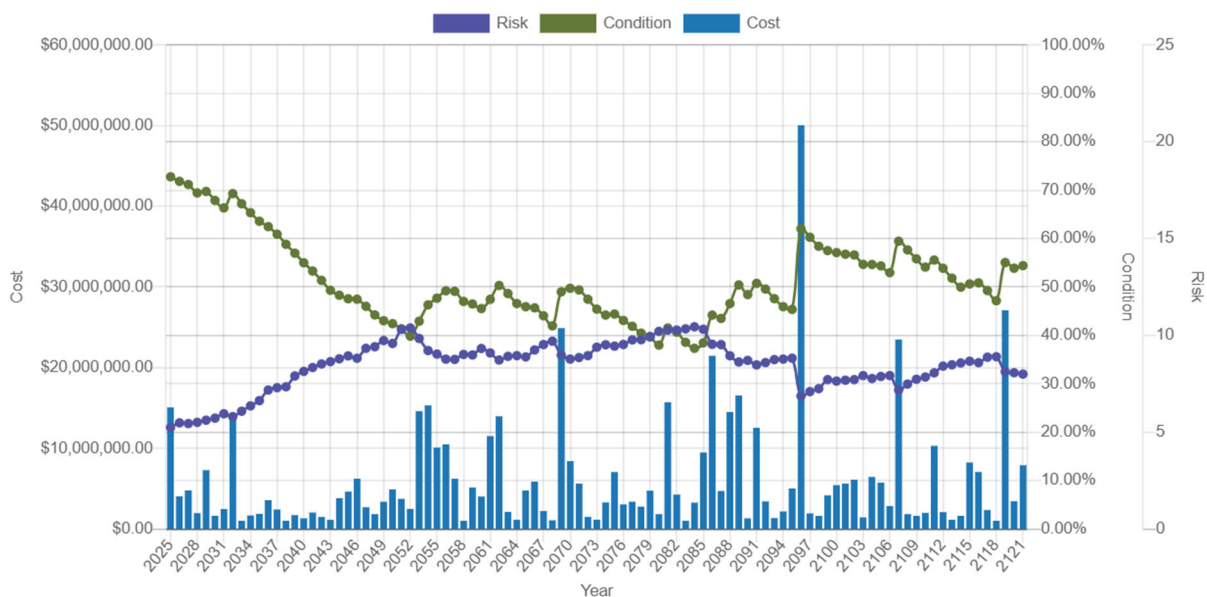
7.4 Risk & Criticality

7.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

7.4.2 Risks to Current Asset Management Strategies

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

Aging Infrastructure

Aging Infrastructure is an issue. Many buildings are in need of costly repairs.

Available Data

Staff have noted that lack of reliable records/data is the largest risk factors when managing the facilities portfolio. A building condition assessment for only 19 of 39 buildings was captured in 2019. This study identified significant requirements however lacked data for the remaining 20 facilities and their components (roofs, windows, HVAC etc) leaving a large gap in information to satisfy funding projections.

Heritage Infrastructure

The Town currently owns 3 designated heritage buildings which carry with it an elevated cost for replacement as compared to non-heritage buildings. It is difficult to source replacement materials for these buildings and any work that must be completed comes with an elevated cost. Delays in repair lead to compounded issues as these buildings continue to age and replacement materials are no longer available or difficult to source.

Legal Liability

As with any aging infrastructure, the risk and legal liability increases as condition deteriorates.

Impact to Services

Failure to properly maintain our current buildings will result in decreased level of service as some buildings may need to be taken out of service due to health/safety and liability concerns resulting from lack of repair.

7.5 Levels of Service

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

7.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Safe & Regulatory	Description of monthly and annual facilities inspection process	Refer to Section 7.3
Sustainable	Description of the current condition of municipal facilities and the plans that are in place to maintain or improve the provided level of service	Buildings are generally in fair condition. Findings from the 2024 Space Needs study will need to be taken account in future budgets.

7.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Sustainable	Average annual reinvestment rate (%)	0.2%
	% of buildings and facilities having a comprehensive building condition assessment over the last (10) years	50% of buildings*
	% of facilities that are in good or very good condition	74%
	% of facilities that are in poor or very poor condition	20%

*NOTE: does not include Water/Wastewater buildings or structures.

7.6 Recommendations

Reinvestment Rate

- With a reinvestment rate of only 0.2% a year resulting in a $6.1 million deficit annually, these statistics radically highlight the deficiencies in the area in order to meet even a basic level of service.   Consideration should be given to increase the reinvestment rate to 2.3% in order to properly maintain current infrastructure.

Replacement Costs

- Building replacement costs have changed significantly since the 2021 assessment. New estimated replacement costs have been included in this AMP, but staff should continue to review and refine replacement cost estimates to ensure projected capital needs remain valid.

Condition Assessment Strategies

- Conduct building condition assessments for remaining buildings to create an inventory of the components of the buildings that will need maintenance and replacement throughout the life of the building. Many of these components (eg. roofs, parking lots, HVAC, windows) are costly assets in their own right. Assessment will also provide condition and replacement costs of those assets so that asset management can be properly scheduled.
- Continue the building condition assessment program so that all buildings are captured on a 5-10 year cycle to capture changes in condition and replacement value.

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.

Surplus Divestment

- Devise a plan to divest any surplus infrastructure in line with the Space Needs Study in order to improve efficiencies and lower long-range maintenance costs. By selling properties that can be declared surplus, a reinvestment can be made to the upkeep and maintenance of existing infrastructure.

8 Vehicles

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

- fire rescue vehicles to provide emergency services
- heavy, light, and medium duty vehicles to support public works operations
- vehicles to support other municipal departments such as buildings, by-law, and parks and facilities

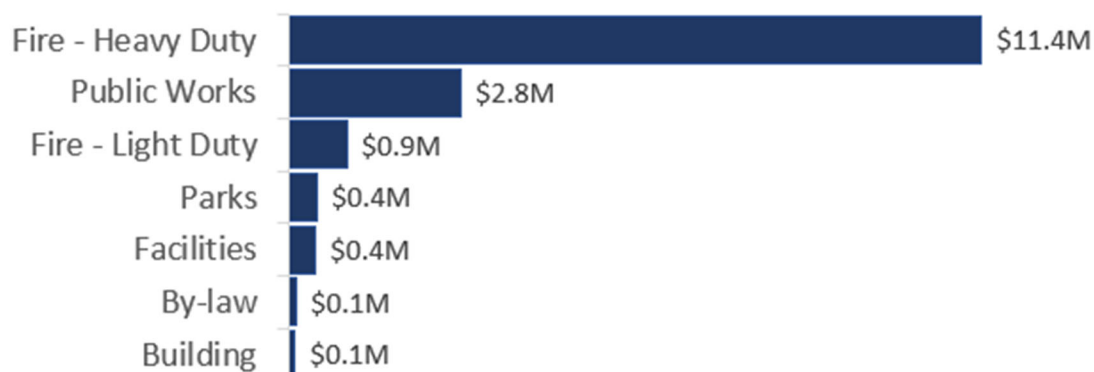The state of the infrastructure for the vehicles is summarized in the following table.

Replacement Cost	Condition	Adopted LOS Annual Requirement
$16.2 million	Poor (39%)	$1 mil

8.1 Asset Inventory & Costs

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Town's vehicles. The average annual requirement projects the necessary funding to replace the asset when it is due for replacement at the end of its useful life. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)
Building	2	$ 90,000	$ 9,000
By-law	2	$ 100,000	$ 10,000
Facilities	5	$ 425,000	$ 42,500
Fire - Heavy Duty	7	$ 11,400,000	$ 570,000
Fire - Light Duty	14	$ 939,000	$ 134,308
Parks	8	$ 445,000	$ 44,500
Public Works	23	$ 2,817,031	$ 281,703
TOTAL	**61**	**$ 16,216,031**	**$ 1,092,011**

Total Replacement Cost
$16.2 M

Fire - Heavy Duty	$11.4M
Public Works	$2.8M
Fire - Light Duty	$0.9M
Parks	$0.4M
Facilities	$0.4M
By-law	$0.1M
Building	$0.1M

Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements. Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

| Increase from 2022 AMP	Cost
New Assets	$568,870
Replacement $ Increase	$6,165,161
Total	**$6,734,031**

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs.

8.2 Asset Condition & Age

The table below identifies the current average condition and source of available condition data for each asset segment. The average condition (%) is a weighted value based on replacement cost. Vehicle condition is rated using age and useful life.

Asset Segment	Estimate Useful Life (Yrs)	Average Age (Years)	Average Condition
Building	10	4.8	53%
By-Law	10	1.0	90%
Facilities	10	4.6	48%
Fire - Heavy Duty	20	11.8	40%
Fire - Light Duty	5-40	11.6	21%
Parks	10	3.8	62%
Public Works	10	8.8	34%
AVERAGE		**8.4**	**39%**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.
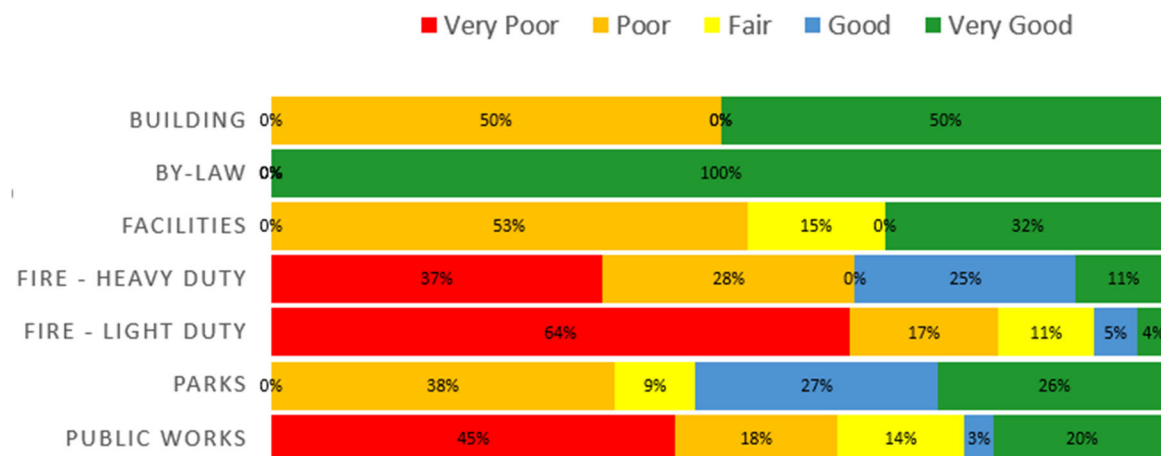
To ensure that the Town's vehicles continue to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the vehicles.

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.

8.2.1   Current Approach to Condition Assessment

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

- Visual inspections on vehicles are completed and documented as part of circle inspections.
- CVOR vehicles have detailed inspections on an annual basis. Non-CVOR vehicle inspections have less formality and are completed mainly for safety on a regular basis.
- Fire apparatus on trucks have annual pump testing from emergency vehicle technicians. Pump functionality is tested on a regular basis in-house.

In this AMP the following rating criteria is used to determine the current condition of vehicles and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

8.2.2   Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
49%	39%	⬇

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

8.3 Lifecycle Management Strategy

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

| Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Currently, most maintenance of the fire vehicles are completed by 3rd party mechanics. Most maintenance for the remaining fleet are completed by in-house mechanics. Repair recommendations are considered.
	Oil changes are completed based on mileage driven or at least annually.
	License stickers, and registration if needed under CVOR, are completed on an annual basis.
	Tire changes, fluid top-up, minor component changes, such as wipers, are completed on an as needed basis.
	Visual inspections on vehicles are completed and documented as part of circle inspections. CVOR vehicles have detailed inspections on an annual basis. Non-CVOR vehicle inspections have less formality and are completed mainly for safety on a regular basis.
	Most maintenance for fire apparatus is completed by 3rd party mechanics. Repair recommendations are considered. Fire small fleet is maintained by in-house mechanics. Fire apparatus pumps & components, emergency lighting, ground ladders and aerial devices have annual pump testing from emergency vehicle technicians. Pump functionality is tested on weekly basis in-house. All apparatus receive an annual Commercial vehicle inspection by certified truck mechanics. A non-destructive test (NDT) is also conducted on Aerial devices on a 5-year schedule.
Replacement	Fire department pumpers and tankers are replaced at the end of a 20-year lifecycle, fire support vehicles are replaced are replaced on a 7-year cycle.
	Generally, vehicles are replaced on a 10-yr cycle except for specialized and emergency service vehicles.

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

8.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

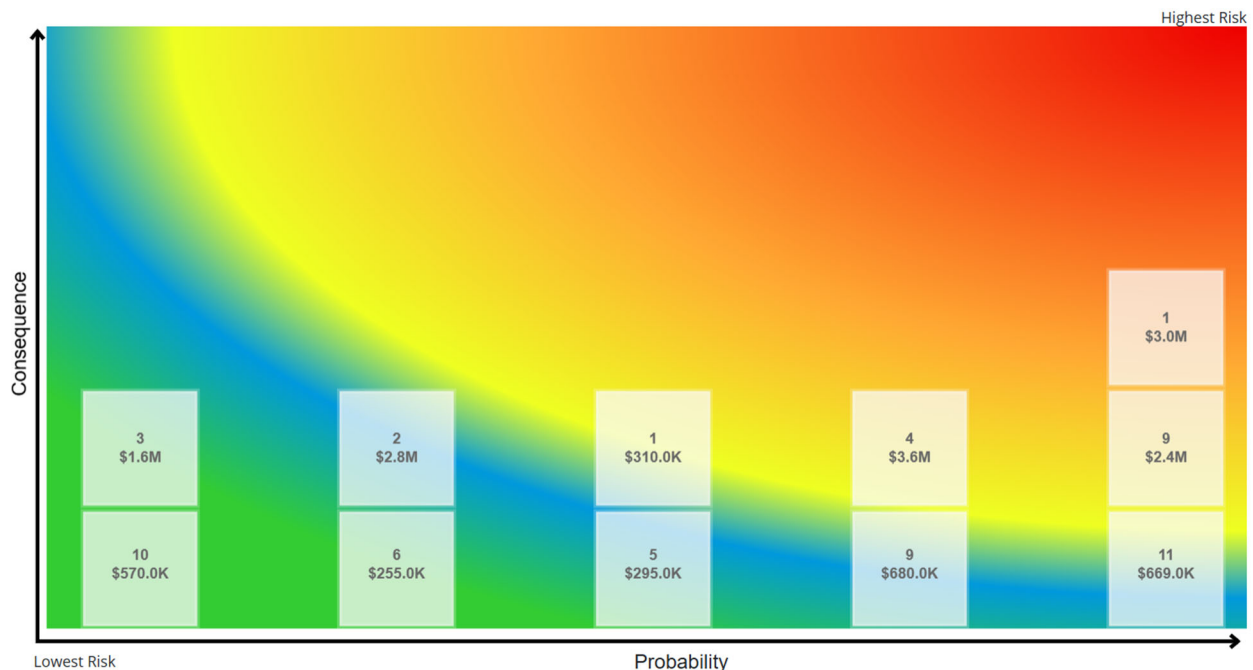|	
2022 AMP Average Condition (Adopted LOS)	49%
Adopted LOS Annual Requirement	$1,079,582

The graph below contains the level of funding and forecast condition and risk of the assets associated with the adopted levels of service for the next 20 years. In instances where the condition is less than the adopted LOS, the assets have not reached the end of their useful life and are not due for replacement.
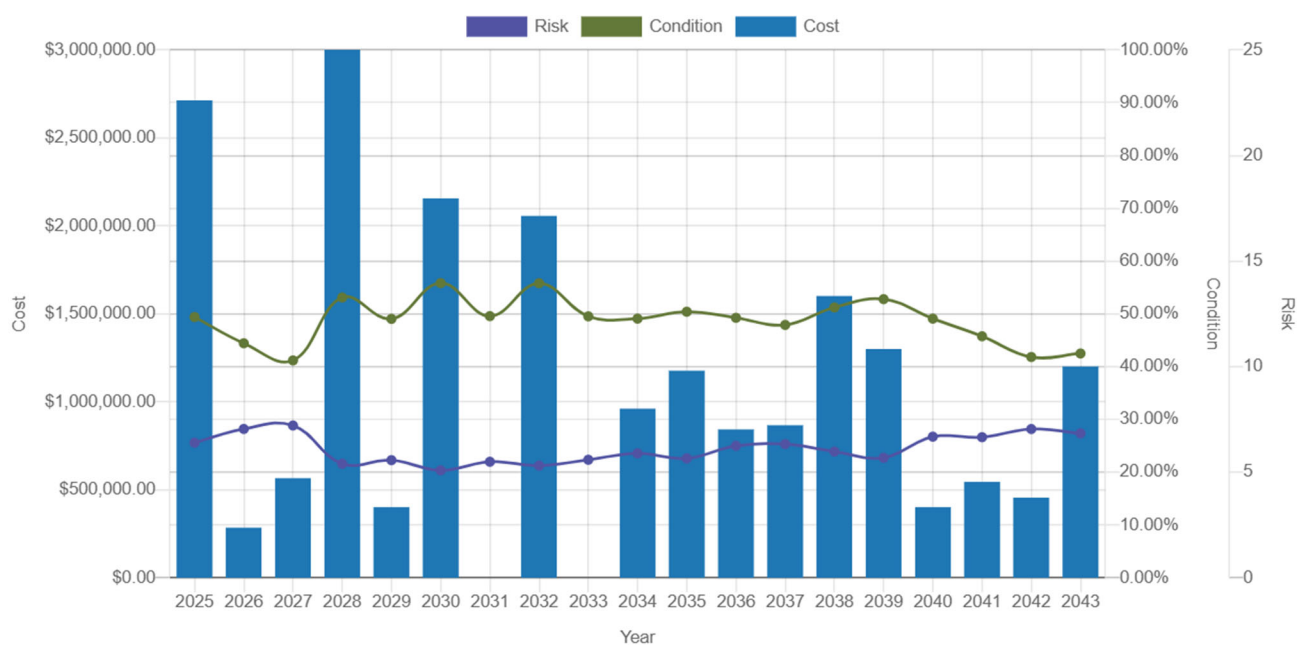
8.4 Risk & Criticality

8.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

8.4.2 Risks to Current Asset Management Strategies

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

Aging Infrastructure
Many vehicles are approaching their estimated useful lives (EUL). As vehicles age the operations and maintenance costs rise, resulting in larger budgets to maintain the fleet. With a lack of a vehicle maintenance program or fleet maintenance policy, this could translate to increased financial ramifications.

8.5 Levels of Service

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

8.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2021)
Safe & Regulatory	Description of the vehicle inspection process undertaken each year	Refer to Section 8.3
Sustainable	Description of the current condition of vehicles and the plans that are in place to maintain or improve the provided level of service	Refer to Section 8.2 & 8.3

8.5.2   Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Accessible & Reliable	# of heavy duty public works vehicles	9
	# of tanker trucks	3
	# of pumper trucks	3
	% of vehicles with preventative maintenance overdue	0%
Safe & Regulatory	% of regulated MTO maintenance inspections complete	100%
	# of fleet vehicles involved in a collision per year	1.67
	# of vehicles safety inspections per year per vehicle per year	1
Sustainable	Average annual reinvestment rate	6.8%
	% of vehicles with less than 3 years remaining	36%
	% of fleet assets with 7 or more years remaining	52%

8.6 Recommendations

Condition Assessment Strategies

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

Risk Management Strategies

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

9 Machinery & Equipment

In order to maintain the high quality of public infrastructure and support the delivery of core services, Town staff own and employ various types of machinery and equipment.

Keeping machinery and equipment in an adequate state of repair is important to maintain a high level of service.
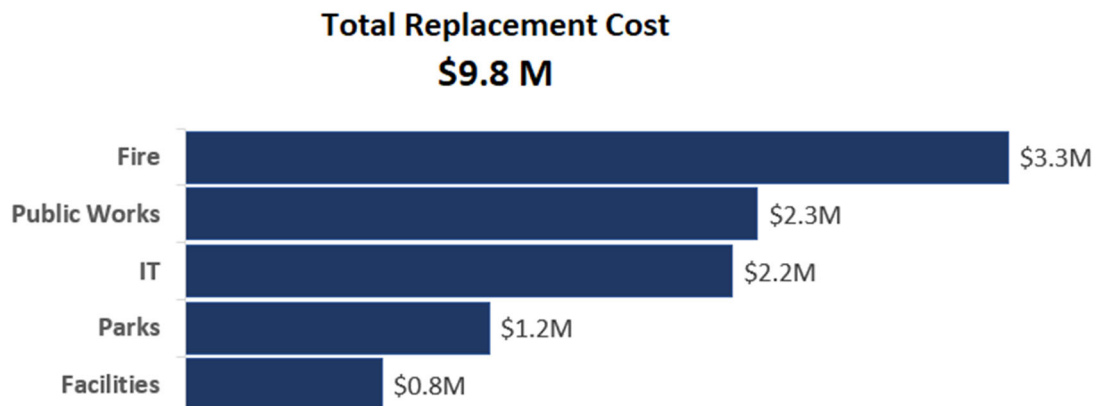
The state of the infrastructure for the machinery and equipment is summarized in the following table.

Replacement Cost	Condition	Adopted LOS Annual Requirement
$9.8 million	Fair (50%)	$0.73 mil

9.1   Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Town's machinery and equipment inventory.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)
Facilities	13	$ 785,309	$ 79,491
Fire	675	$ 3,287,165	$ 240,071
IT	169	$ 2,185,200	$ 225,069
Parks	47	$ 1,213,228	$ 118,010
Public Works	106	$ 2,286,427	$ 192,076
TOTAL	**1,006**	**$ 9,757,329**	**$ 854,716**

Total Replacement Cost
$9.8 M

Fire	$3.3M
Public Works	$2.3M
IT	$2.2M
Parks	$1.2M
Facilities	$0.8M

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

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

Increase from 2022 AMP	Cost
New Assets	$1,500,000
Replacement $ Increase*	$895,329
Total	**$2,395,329**

*Note: This asset category had a number of assets removed that were below a minimum value threshold.

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs.

9.2 Asset Condition & Age

The table below identifies the current average condition and source of available condition data for each asset segment. The average condition (%) is a weighted value based on replacement cost. Some fire equipment assets have condition assessments available; however, most assets rely on age and useful life.

Asset Segment	Estimate Useful Life (Yrs)	Average Age (Years)	Average Condition
Facilities	6-10	6.0	70%
Fire	5-40	8.0	51%
IT	3-20	5.3	43%
Parks	5-20	13.0	27%
Public Works	10-20	35.9	61%
AVERAGE		**13.3**	**50%**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.
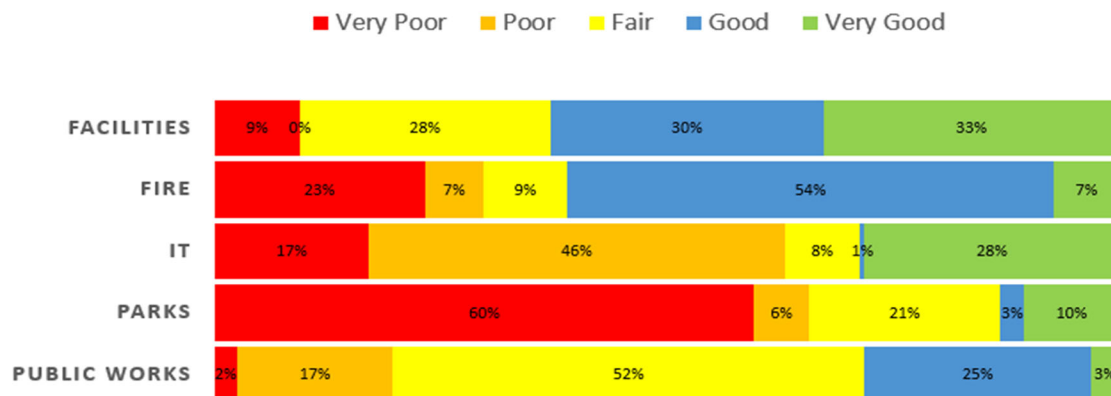
To ensure that the Town's machinery and equipment continues to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the machinery and equipment.

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.

9.2.1   Current Approach to Condition Assessment

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

- Public Works equipment is generally inspected and maintained on a seasonal, or as-needed basis. Significant equipment, such as plow blades, are managed for functionality as per the Minimum Maintenance Standards (MMS). However, there is no formal condition assessment program in place.
- Parks & Facilities' equipment is inspected every spring. Smaller equipment is inspected on a daily basis as they are used. However, the Zambonis are inspected annually, and sent to the manufacturer for an overhaul if required.
- SCBAs are subject to annual bench testing to ensure functioning as per National Fire Protection Agency (NFPA) requirements.

In this AMP the following rating criteria is used to determine the current condition of machinery & equipment and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

9.2.2   Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
43%	50%	⬆

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

9.3 Lifecycle Management Strategy

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

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

| Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Public Works equipment is generally inspected and maintained on a seasonal, or as-needed basis. Some of the larger units have daily or weekly maintenance performed by staff.
	Parks equipment is inspected every Spring. Smaller equipment is inspected on a daily basis as they are used. However, the Zamboni is inspected twice annually, and sent to the manufacturer for an overhaul if required.
	Hoisting, chains, strapping and auto-extrication equipment tested annually by third party. SCBA testing equipment calibrated and tested annually by third party. Fire hose tested annually in house to NFPA standards.
Replacement	The replacement of machinery & equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks. All major equipment is replaced on a 15-year cycle. Backhoes are in a 12-year cycle between Water/Wastewater, Roads and Parks. Minor equipment is replaced as needed.
	Bunker gear is replaced on a 10-year cycle based on NFPA and manufacturer requirements.
	IT assets are generally replaced on a 5-year cycle. The specific timing of replacement considers obsolescence.

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

9.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

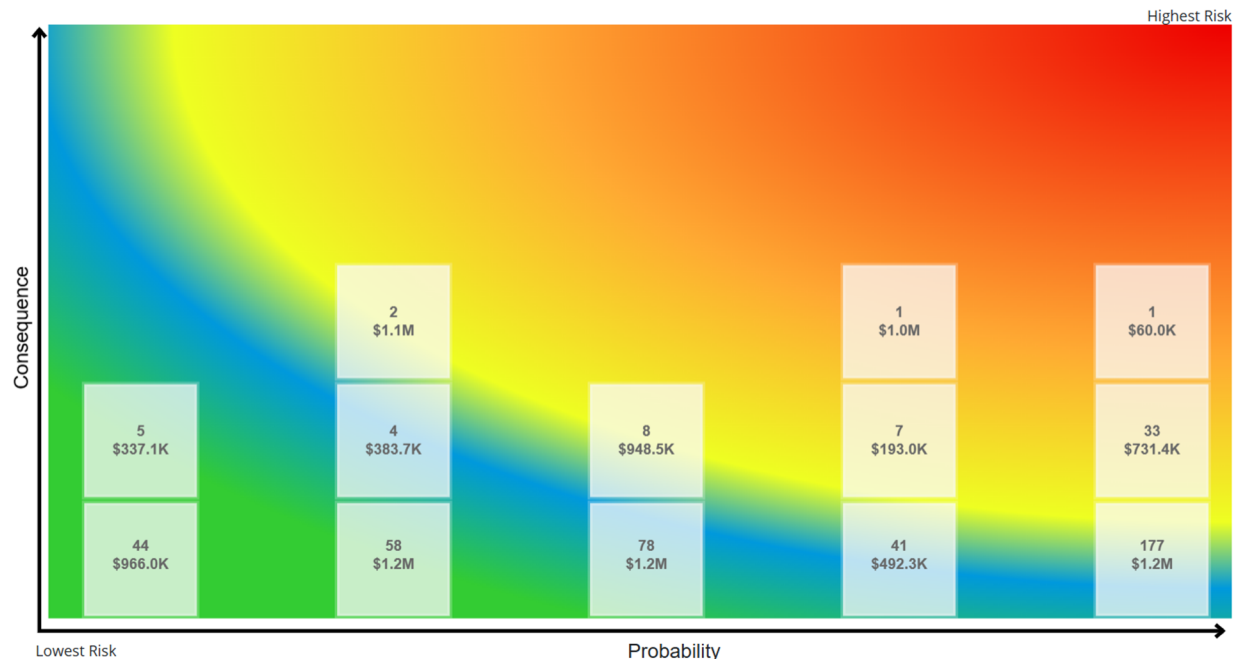| 2022 AMP Average Condition (Adopted LOS)	43%
Adopted LOS Annual Requirement	$728,316

The graph below contains the level of funding and forecast condition and risk of the assets associated with the adopted levels of service for the next 25 years. In instances where the condition is less than the adopted LOS, the assets have not reached the end of their useful life and are not due for replacement.
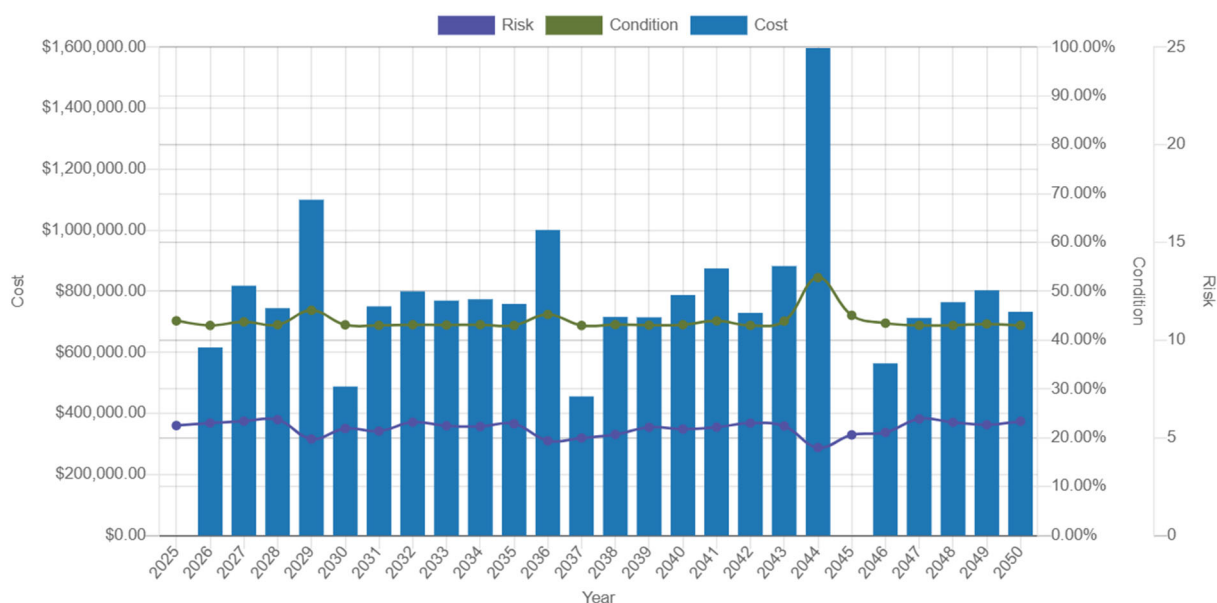
9.4 Risk & Criticality

9.4.1   Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

9.4.2 Risks to Current Asset Management Strategies

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

Lifecycle Management Strategies

Equipment and machinery do not have a maintenance policy. Without a planned, proactive approach, these assets are at risk of requiring higher operations and maintenance costs as they age.

9.5 Levels of Service

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

9.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Accessible & Reliable	Description of redundancies available to ensure equipment is available for operations	Multiple pieces of equipment are available at various stations if required. Preventative maintenance and inspections are completed periodically and after each use to ensure equipment is available for operations.
Safe & Regulatory	Description of the work undertaken to ensure equipment is in good operating order	Refer to Section 9.3
Sustainable	Description of the current condition of equipment and the plans that are in place to maintain or improve the provided level of service	There have been significant initiatives to improve the levels of service for equipment. In Public Works, an additional fleet mechanic was added in 2024 to assist with required maintenance of equipment. For Fire, a large portion of equipment (eg SCBAs, nozzles etc) has been updated in recent years and are replaced on a regular schedule. Hoses are tested annually and replaced as required.

9.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Accessible & Reliable	% of equipment with preventative maintenance overdue	0%
	% of Assets where Age > Useful Life (IT)	43%
	Ratio of service requests resolved comparted to total number of service requests	TBD[1]
Safe & Regulatory	% of regulated MTO maintenance and inspections activities completed	100%
	# of workplace injuries due to equipment issues	0%
	# of equipment safety inspections per year completed for safety and protective equipment (Fire)	55 - SCBA units certified annually. 90 sets of Bunker Gear (Coats, pants, hood) inspected and tested at least once annually.
Sustainable	Average annual reinvestment rate of equipment and IT assets	2.6%
	% of assets in poor or very poor condition	38%
	% of assets in good or very good condition	40%

[1] The Town is currently configuring their work order and service request system. This measure may be available in future iterations of the Plan.

9.6 Recommendations

Condition Assessment Strategies

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

Risk Management Strategies

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

Levels of Service

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

10 Land Improvements

The Town of Amherstburg owns a number of assets that are considered land improvements. This category includes:

- Park amenities
- Play spaces & sports fields
- Fencing
- Structures (eg gazebos)
- Miscellaneous landscaping and other assets

The state of the infrastructure for the land improvements is summarized in the following table.
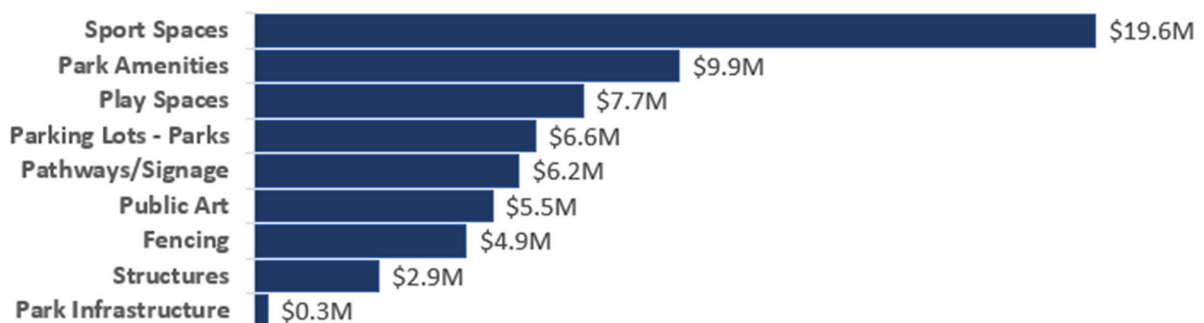
Replacement Cost	Condition	Adopted LOS Annual Requirement
$63.6 million	Good (60%)	$2.72 mil

10.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Town's land improvements inventory. The average annual requirement projects the necessary funding to replace the asset when it is due for replacement at the end of its useful life. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)
Fencing	17	$ 4,940,873	$ 247,044
Park Amenities	141	$ 9,909,168	$ 354,495
Park Infrastructure	2	$ 300,000	$ 12,000
Parking Lots - Parks	21	$ 6,550,108	$ 319,505
Pathways/Signage	31	$ 6,168,035	$ 254,896
Play Spaces	14	$ 7,650,000	$ 465,000
Public Art	10	$ 5,540,000	$ 112,250
Sport Spaces	31	$ 19,630,000	$ 1,001,500
Structures	16	$ 2,889,140	$ 90,392
TOTAL	**283**	**$ 63,577,324**	**$ 2,857,083**

Total Replacement Cost
$63.6 M

Asset Segment	Cost
Sport Spaces	$19.6M
Park Amenities	$9.9M
Play Spaces	$7.7M
Parking Lots - Parks	$6.6M
Pathways/Signage	$6.2M
Public Art	$5.5M
Fencing	$4.9M
Structures	$2.9M
Park Infrastructure	$0.3M

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

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

| Increase from 2022 AMP	Cost
New Assets	$11,612,197
Replacement $ Increase	$13,730,127
Total	**$25,342,324**

It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs.

10.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost. The majority of land improvement assets use staff judgement to determine condition scores.

Asset Segment	Estimate Useful Life (Yrs)	Average Age (Years)	Average Condition
Fencing	20	23.8	Fair (59%)
Park Amenities	5-50	11.2	Good (78%)
Park Infrastructure	25	18.7	Poor (30%)
Parking Lots - Parks	20	33.2	Fair (41%)
Pathways/Signage	20-25	17.6	Fair (47%)
Play Spaces	20	16.9	Fair (53%)
Public Art	15-50	18.3	Very Good (82%)
Sport Spaces	15-30	39.1	Fair (58%)
Structures	25-75	48.3	Fair (58%)
AVERAGE		**20.0**	**Good (60%)**

The graph below visually illustrates the average condition for each asset segment on a very good to very poor.
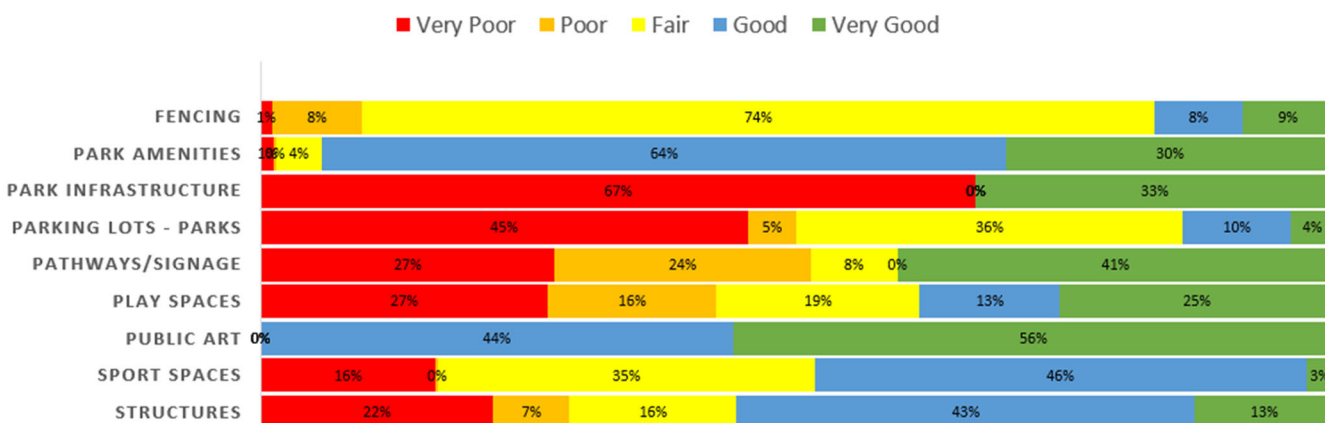
To ensure that the Town's land improvements continues to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the 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.

10.2.1 Current Approach to Condition Assessment

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

- Parks are subject to weekly inspections using internal resources. Play structures are inspected for CSA compliance monthly.
- Sports fields are inspected monthly, or in response to user group planning and weather conditions that affect their use.

In this AMP the following rating criteria is used to determine the current condition of road segments and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

10.2.2 Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
62%	60%	⬇

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

10.3 Lifecycle Management Strategy

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

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

| Activity Type	Description of Current Strategy
Maintenanace / Rehabilitation	Parks are subject to weekly inspections using internal resources. Play structures are inspected for CSA compliance monthly.
	Sports fields are inspected monthly, or in response to user group planning.
	Parks are subjected to scheduled mowing and landscaping, prescribed by asset usage and season.
Replacement	The 2018 Parks Master Plan outlined high level objectives for the parks system and was updated beginning in 2024/2025. The current strategy provides short, medium and long term goals based on the needs of the community in response to data collected. Many of the Towns playgrounds have been replaced since the last AMP with the implementation of lifecycle replacment program. Many of the Town's sports courts and parking lots are in need of maintenance and investment and would also benefit from a lifecycle replacement program.

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

10.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

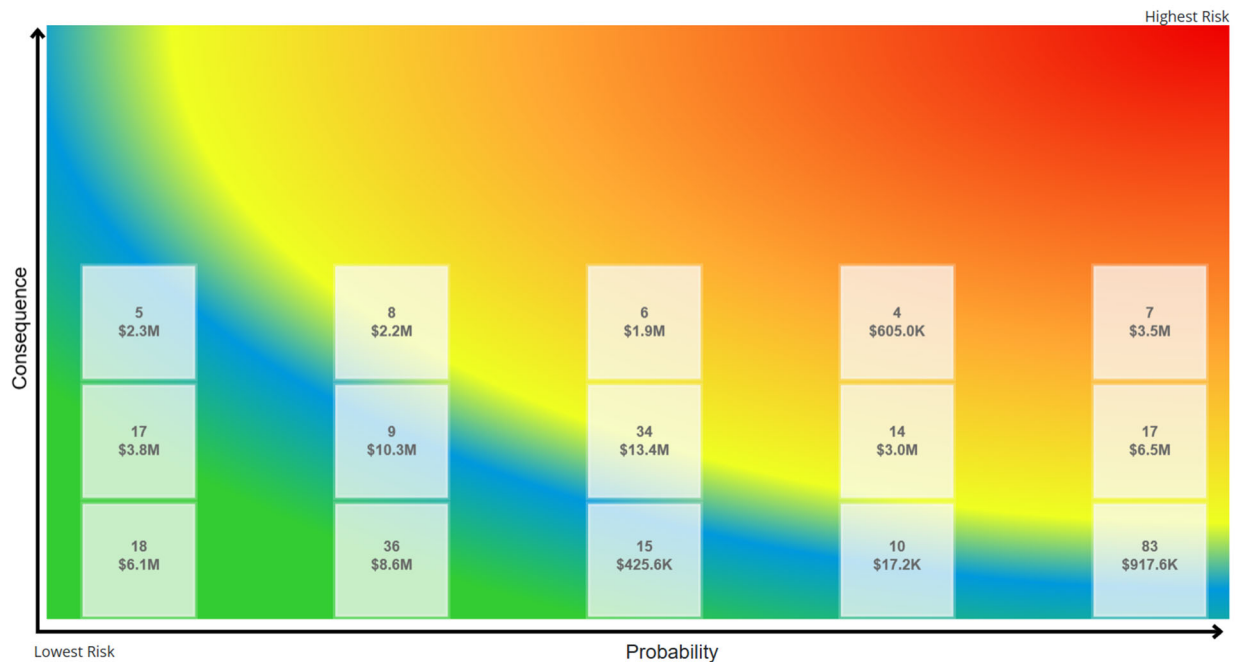| 2022 AMP Average Condition (Adopted LOS)	62%
Annual Required Funding to Maintain Adopted LOS	$2,719,839

The graph below contains the level of funding and forecast condition and risk of the assets associated with the adopted levels of service for the next 50 years. In instances where the condition is less than the adopted LOS, the assets have not reached the end of their useful life and are not due for replacement.
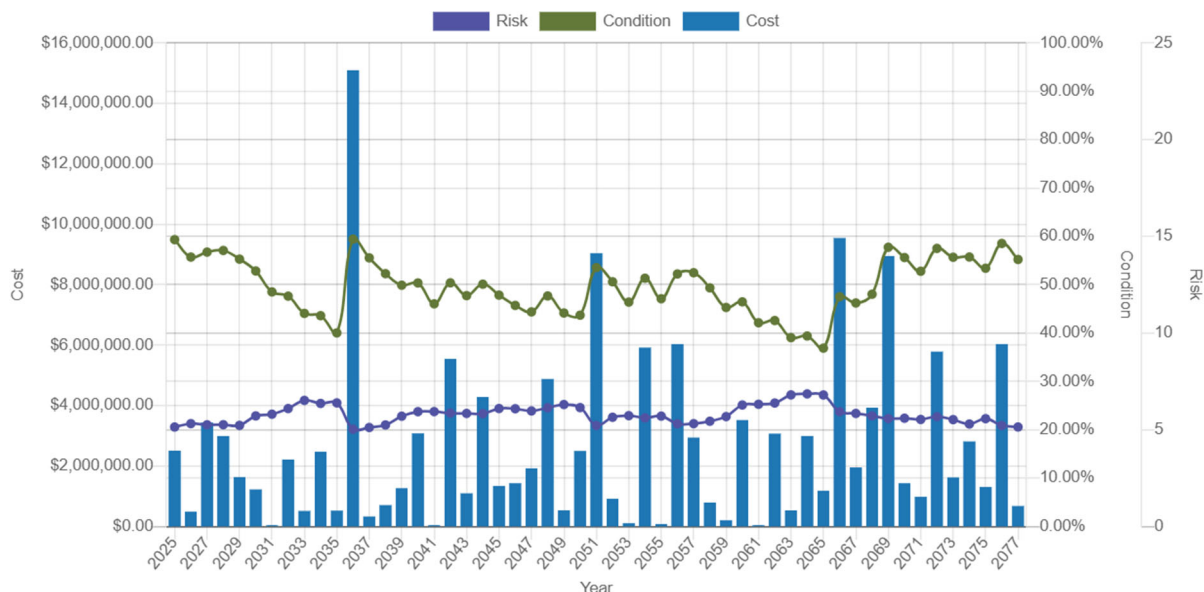
10.4 Risk & Criticality

10.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

10.4.2 Risks to Current Asset Management Strategies

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

Aging Infrastructure

The 2022 AMP captured the Towns parks and recreational infrastructure which was minimally invested in over the past 20 plus years. Limited budgets and replacement of assets compounded with age, wear and tear has led to compromised recreational infrastructure including playgrounds, sports courts, parking lots, lighting etc. A lifecycle replacement program has been implemented for playgrounds identifying all 13 playgrounds and 1 splash pad of which Town has successfully replaced 6. Ongoing Capital and Operating investment is required to replace and maintain recreational infrastructure to ensure quality level of service that is safe and reliable.

AODA Compliance

Managing accessibility and community expectations can be challenging due to the plethora of requests with limited resources. The Parks Master Plan public engagement sessions proved one of the most highly used features within a park are recreational pathways. Due to limited funding and the expense of this infrastructure, there are relatively few sidewalks and connections within parks. Implementation of these linear assets over time will help connectivity within parks, mitigating these concerns and will offer a better level of service in order to maintain high quality parks that are accessible for all.

Community Expectations

Trends in parks come and go and many requests for specialized infrastructure come from the community. However, there is minimal evidence investing in specialized infrastructure for various sports is founded.

Claim Liability

As recreational infrastructure ages and if it is not maintained, the Town's risk and liability increases. In order to mitigate this risk, it is important that all recreational assets are accounted for in a maintenance management program.

10.5 Levels of Service

The following tables identify the Town's current level of service for land improvement assets. These metrics include the performance measures that the Town has selected for this AMP.

10.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Safe & Regulatory	Description of the parks inspection process and timelines for inspections	Parks are subject to weekly inspections using internal resources. Play structures are inspected for CSA compliance monthly. Sports fields are inspected monthly, or in response to user group planning.

10.5.2 Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the land improvement assets.

Service Attribute	Technical Metric	Current LOS (2024)
Safe & Regulatory	% of playground equipment inspected for CSA compliance	100%
	% of parks and recreation assets that are in good or very good condition	32%
Sustainable	% of parks and recreation assets that are in poor or very poor condition	47%
	Average Annual Reinvestment rate	1.2%

10.6 Recommendations

Condition Assessment Strategies

- Condition scores have been developed based on staff judgement. However, the Town should work towards developing a condition assessment program with specific condition rating criteria for critical assets to better ensure consistency and accuracy of condition ratings.

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

Capital Investment Program

- Create an on-going Capital and Operating investment program for the maintenance and replace of recreational infrastructure to ensure quality service levels are maintained that are safe and reliable.

11 Natural Assets

The Town of Amherstburg owns a number of assets that are considered natural assets. This category includes:

- Trees in the Right-Of-Way (ROW) and in parks.
- Shorewalls
- Naturalized Areas

The state of the natural assets is summarized in the following table:

Replacement Cost	Condition	Adopted LOS Annual Requirement
$60.1 million	Good (68%)	$0.7 million

11.1 Asset Inventory & Costs

The table below includes the quantity, replacement cost method, and annual capital requirements of each asset segment in the Town's natural assets inventory.
The average annual requirement projects the necessary funding to replace the asset when it is due for replacement at the end of its useful life. This is different than the Adopted LOS Annual Requirement, which is the required amount to meet the LOS adopted by Council and is found later in this chapter.

Asset Segment	Quantity	Replacement Cost	Average Annual Requirement (end of life)
Naturalized Areas	1	$ 20,000	$ 286
Shorewalls	6	$ 22,600,000	$ 322,857
Trees - Parks	1,539	$ 8,464,500	$ 84,645
Trees - ROW	5,275	$ 29,012,500	$ 290,125
TOTAL	**6821**	**$ 60,097,000**	**$ 697,913**
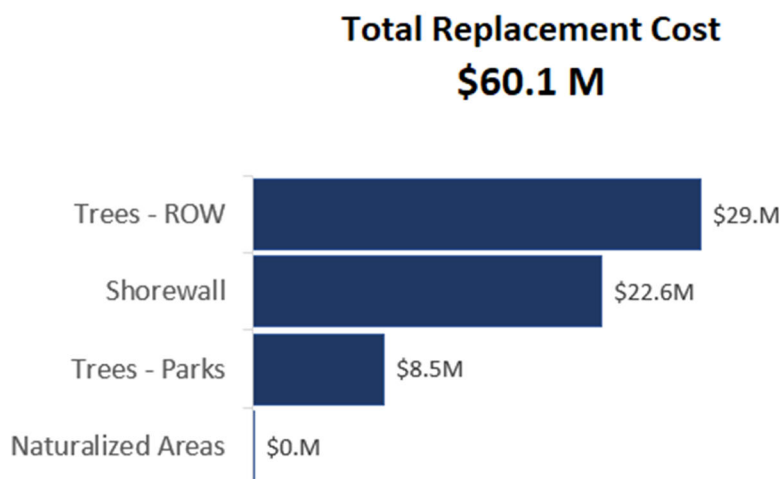
Total Replacement Cost
$60.1 M

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

Trees are an unusual asset in that their replacement cost is much less than their value. The replacement cost for a tree is only the cost to remove and replace it.

This is the Town's financial obligation when the tree needs to be removed at the end of useful life. The replacement cost outlined above should not mistaken for the value of the trees.

Increases to the replacement costs within the asset category can come from a variety of sources. Price increases due to inflationary or market pressures can contribute to higher replacement costs. In addition, entirely new assets may be added to the category. New assets can be built by the town or a developer and included in the asset inventory. Assets can be identified that were not included in the previous AMP.

The following information is a high-level estimation of the breakdown of the replacement cost increases attributed to either additional assets within the category or increases to the replacement costs of the previous assets:

Increase from 2022 AMP	Cost
New Assets	$60,097,000
Replacement $ Increase	N/A
Total	**$60,097,000**

 It is not meant to be a detailed asset for asset comparison between the AMPs; the intent is to give an approximate calculation of whether the increased replacement cost was a result of new assets added to the inventory or increases to the replacement costs.

11.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Yrs)	Average Age (Years)	Average Condition
Naturalized Areas	-	*	Very Good (97%)
Shorewalls	70	34.4	Good (60%)
Trees - Parks	100	*	Good (68%)
Trees - ROW	100	*	Good (68%)
AVERAGE		**34.4**	**Good (68%)**

Some of the natural assets (like trees) do not have a known age. As the forestry program continues to develop, one of the goals will be to estimate the approximate age of the trees in the ROW. For Parks, a goal is to identify trees that are in poor condition for removal so infill planting areas can be identified in order to increase the tree canopy in Amherstburg.

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale:
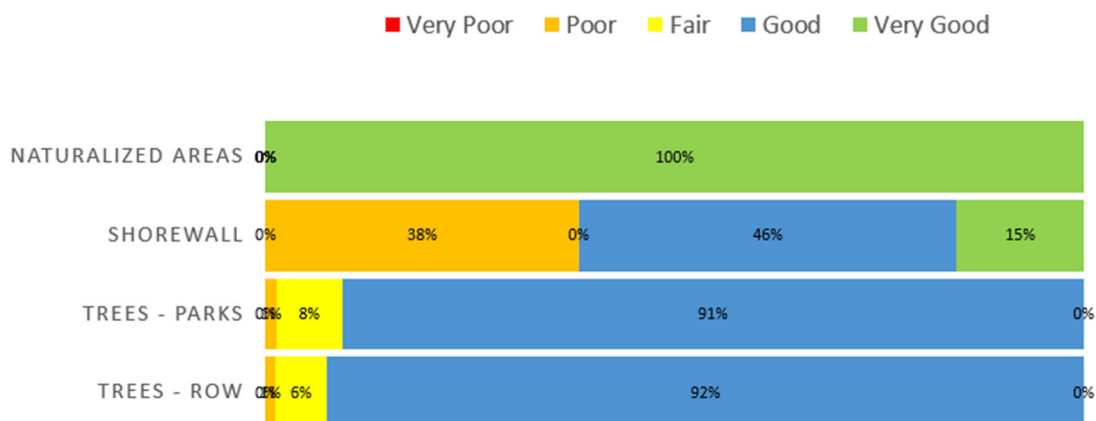
To ensure that the Town's natural assets continues to provide an acceptable level of service, the Town should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the natural assets.

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

11.2.1 Current Approach to Condition Assessment

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

- Trees are inspected every 5 years and assigned a condition rating of Good, Fair or Poor. Trees that are Fair or Poor are then inspected annually.
- The shorewall condition is determined based on its age.
- There are no formal condition assessment programs in place for the naturalized areas.

In this AMP the following rating criteria is used to determine the current condition of natural assets and forecast future capital requirements:

Condition	Rating
Very Good	80-100
Good	60-79
Fair	40-59
Poor	20-39
Very Poor	0-19

11.2.2 Asset Condition Changes

The condition of an asset will deteriorate over time. However, replacement of existing assets or lifecycle management strategies can improve the asset's condition. The following table shows the change in the asset categories' average condition since the 2022 Asset Management Plan:

2022 Condition	2025 Condition	Change
62%	68%	⬆

Note: There was not a Natural Assets Category in the 2022 AMP. Since one shorewall was identified in the Land Improvements category in the 2022 AMP and shorewalls are now grouped in the Natural Assets category, the 2022 AMP condition level for Natural Assets has been assumed to be the same as Land Improvements.

The projected condition for the asset category over a 10-year period with funding at the annual average of the current 5-year capital plan is found in Appendix C.

11.3 Lifecycle Management Strategy

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

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

| Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Trees within the Town are inspected annually based on their condition rating to determine required trimming maintenance and or removals.
Replacement	Shorewall replacement is prioritized based on age and material. An assessment and condition of the Towns shorewall and shorelines infrastructure is required to determine replacement cost and condition.
	Tree are replaced as needed based on the annual inspection.

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

11.3.1 Forecasted Capital Requirements to Maintain Adopted LOS

The forecasted average annual funding required to maintain the adopted Level of Service (LOS) is provided below. The annual funding is calculated over the length of time to ensure each asset has gone through one iteration of replacement.

2022 AMP Average Condition (Adopted LOS)	62%
Adopted LOS Annual Requirement	$693,470

The graph below contains the level of funding and forecast condition and risk of the assets associated with the adopted levels of service for the next 100 years. In instances where the condition is less than the adopted LOS, the assets have not reached the end of their useful life and are not due for replacement.
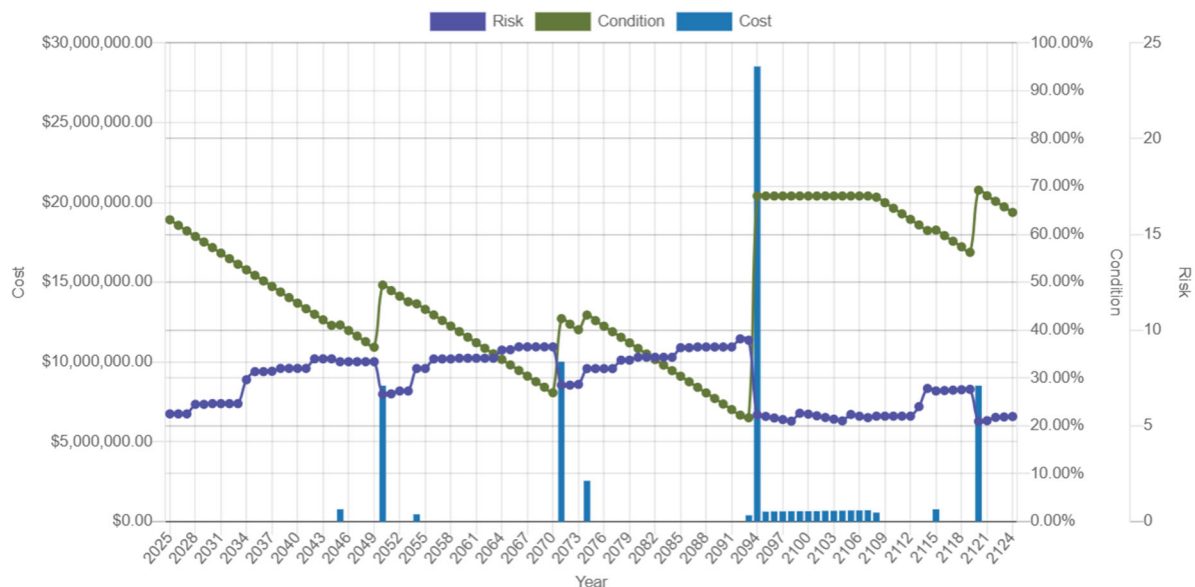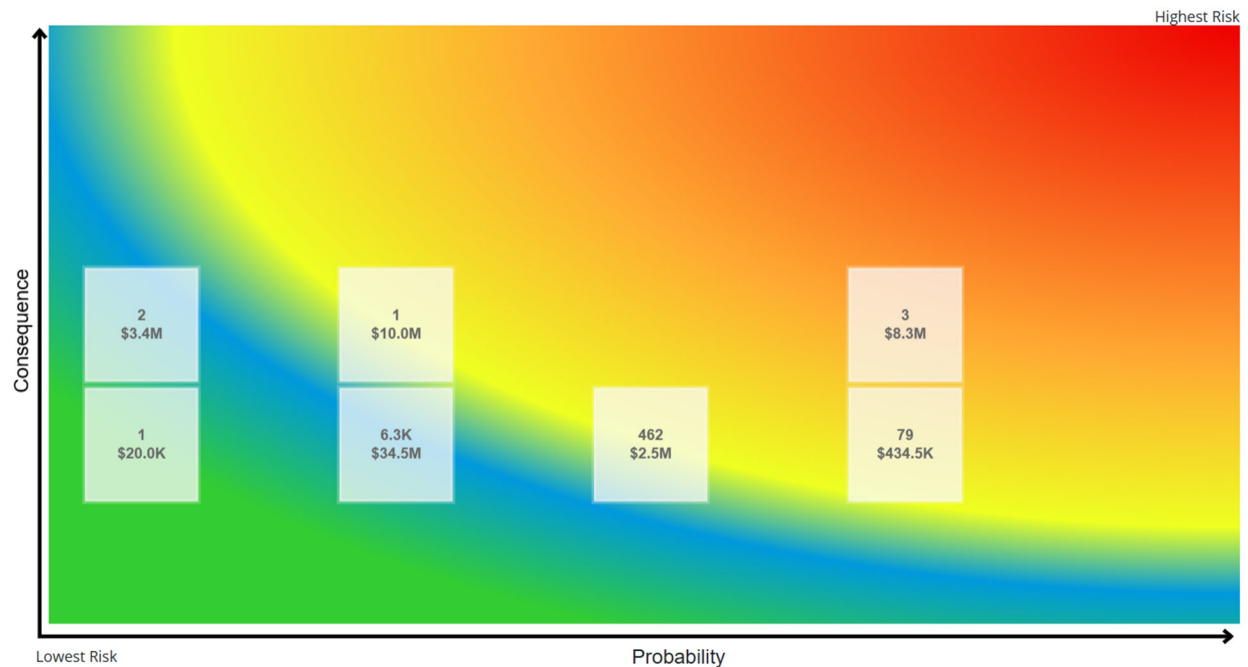

In the tree inventory, the age of the trees is not known. Therefore, the vast majority of tree replacements are shown as taking place around the year 2094 due to condition assessments. This limitation in the graph would be remedied once approximate age of trees were known.

11.4 Risk & Criticality

11.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.

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

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

11.4.2 Risks to Current Asset Management Strategies

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

Lifecycle Management Strategies

The Town's shorewall and shoreline infrastructure were not completely captured in the 2022 AMP. A current inventory and condition assessment are required to provide accurate data on replacement and ongoing maintenance of this asset.

11.5 Levels of Service

The following tables identify the Town's current level of service for natural assets. These metrics include performance measures that the Town has selected for this AMP.

11.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Safe & Regulatory	Description of the forestry inspection process and timelines for inspections	The entire tree inventory is inspected approximately every 5 years. Trees identified as fair condition or below are inspected annually,

11.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Reliability	Annual capital reinvestment rate	0.1%
	% of the natural assets that are in good or very good condition	80%
	% of the natural assets that are in poor or very poor condition	16%

11.6 Recommendations

Asset Inventory

- Natural and infrastructure park assets require updated inventory and condition assessment in order to continue to develop strategies and programs for long term maintenance and sustainability.

Replacement Costs

- In order to fund these assets with accurate replacement costs, ongoing inventory and condition assessment is continually required. The trees program within Amherstburg accurately captures the trees within the Town; however this inventory must be continually updated in order to reflect accurate data. Shorewall infrastructure requires a condition assessment and updated inventory in order to accurately capture replacement costs.
- The replacement cost for the trees in this asset management plan is only the cost to remove an old tree and plant 2 new ones. It does not take into account the "value" of the tree. A methodology to determine the value of the tree should be developed to assist in understanding how valuable a tree is to the Town.

Condition Assessment Strategies

- Identify and budget for condition assessment strategies for high value and high-risk natural assets (shorewalls).

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 that the Town has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.

12 Water Network

The Water Network provided by the Town includes the following:

- Amherstburg Water Treatment Plant
- Water Tower
- A distribution system consisting of watermains, valves, hydrants and other water equipment.

The state of the infrastructure for the water network is summarized in the following table.

Water	
Replacement Cost	**Condition**
$395.4 million	Fair (57%)

12.1 Water Asset Management

12.1.1 Water and Wastewater Rate Study (2023)

The 2023 Water and Wastewater rate study was completed by Ontario Clean Water Agency (OWCA,) dated January 12, 2024. The study was undertaken to provide a fiscally responsible charge for the users of the water and wastewater systems to fund the operating and capital expenditures for the respective services.

The rate study analyzed budgets, reserve funds & debt positions, asset maintenance data, current & forecasted consumption and growth. A copy of the report is found in Appendix D.

On January 29th, 2024 per CR 20240129-007, Council approved:

That:
1. The report from OWCA for the 2023 Amherstburg Water and Waste Water Rate Study BE RECEIVED for information.
2. That Council ADOPT the Recommendation for future rate increases as proposed in the report; and
3. Council DIRECT Administration to initiate a program to review Water and Wastewater rates every 3 years.

This rate is forecast to maintain appropriate reserve balances over the short to medium term while funding the necessary operating and capital expenditures.

Water rates will need to be re-visited prior to 2027 with an update of the water and wastewater asset management plan.

12.1.2 Water & Wastewater Asset Management Plan (2023)

In November 2023, OCWA completed an Asset Management Plan (AMP) specific to Water and Wastewater assets. The Water and Wastewater AMP analysed the replacement value, condition, funding, growth, risk, and financing strategy for water and wastewater assets in both plant and field locations. The contents of the plan informed the analysis and findings for the 2023 Water and Wastewater Rate Study.

A copy of the 2023 Water and Wastewater Asset Management Plan is attached in Appendix E. Information regarding water assets and the detailed asset management plans surrounding the assets can be found in the report.

Future Water and Wastewater AMPs should be formatted to align with the same reporting methodology so that consistency throughout the entire Asset Management Plan can be attained.

12.2 Asset Age

The table below identifies the average age and the estimated useful life for each asset segment.

Asset Segment	Estimate Useful Life (Yrs)	Average Age (Years)
Amherstburg Water Treatment	5-60	45
Water Distribution	20-75	35.5
AVERAGE		**36.5**

12.3 Lifecycle Management Strategy

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

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

Activity Type	Description of Current Strategy
Maintenance	Main flushing is completed on the network monthly (some areas are bimonthly)
	Annual valve turning program as well as hydrant inspections
Rehabilitation	A water relining program is not considered, as the network is relatively small and relining costs are significant.
Replacement	Watermain replacements are prioritized by age, material, diameter, and history of main breaks.
	The prioritized list of watermains is scheduled to align with work on the storm, wastewater, and roads networks

12.4 Risk & Criticality

12.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.
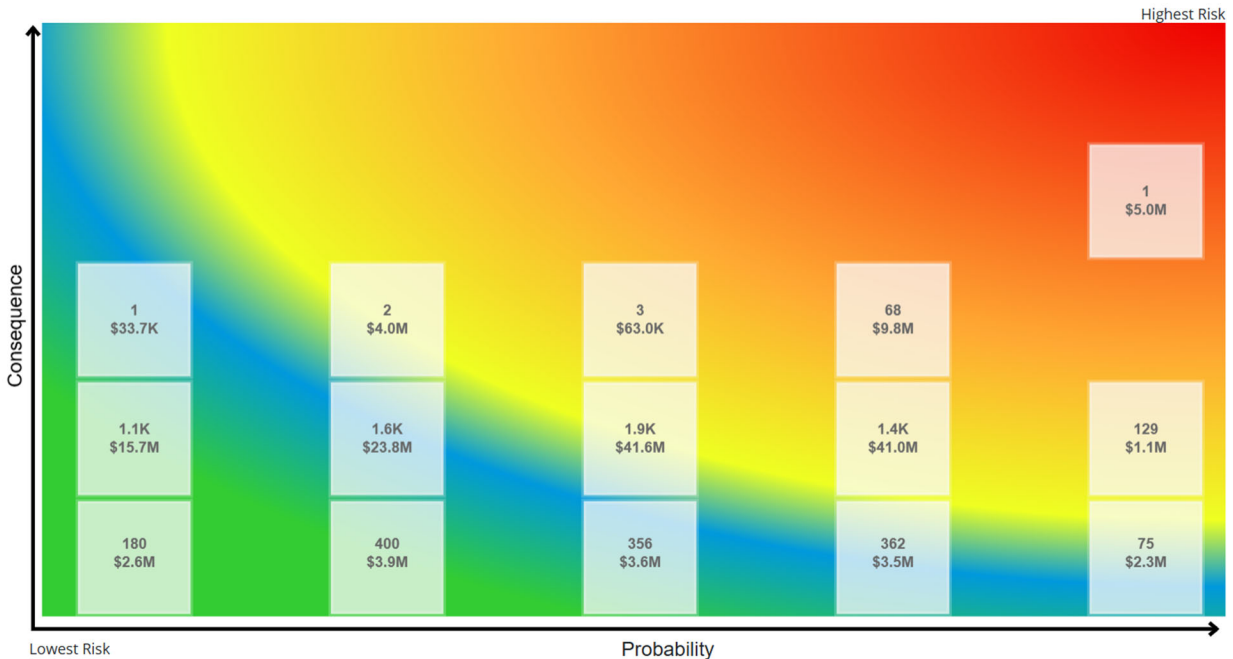
The identification of critical assets allows the Town to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

12.4.2 Risks to Current Asset Management Strategies

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

Infrastructure Design & Age

Both pipe material and aging infrastructure have been identified as the critical risk factors when managing the water network. Components of the treatment plant are deteriorating and have led to failures in recent years. Ductile iron pipes are a concern; these pipes are brittle, which have led to unexpected breakages in recent years. Further, iron pipes corrode and can lead to color and odour issues with the supplied water. Currently, ductile iron pipes are prioritized for replacement to mitigate these risks.

12.5 Levels of Service

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

12.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	See Appendix B
	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	See Appendix B
Reliability	Description of boil water advisories and service interruptions	Amherstburg generally has enough system pressure to prevent contamination during breaks, which usually does not require boil water advisories.

12.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2024)
Scope	% of properties connected to the municipal water system	96%
	% of fire hydrants and/or blow offs flushed annually	100%
	% of properties where fire flow is available	97.7%
Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0.02
	# of water quality customer complaints per capita related to the water system	0.03
	Annual capital reinvestment rate	0.7%
	% of the water system that is in good or very good condition	45%
	% of the water system that is in poor or very poor condition	9%

12.6 Recommendations

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk water network assets.

Asset Management Strategy

- Future Water and Wastewater AMPs should be formatted to align with the same reporting methodology so that consistency throughout the entire Asset Management Plan can be attained.

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.
- The current water and wastewater asset management plan was developed prior to the council approved risk assessment tool and uses a different methodology. Subsequent asset management plans should adopt the new council approved risk assessment tool.

13 Wastewater Network

The Wastewater Network provided by the Town includes the following:

- Amherstburg Wastewater Treatment Plant
- Big Creek Marsh Wastewater Treatment Plant
- Boblo Island Wastewater Treatment Plant (offline)
- McLeod Wastewater Treatment Plant
- A collection system consisting of pumping stations, manholes, sewer mains, vehicles and equipment.

The state of the infrastructure for the wastewater network is summarized in the following table.

Wastewater	
Replacement Cost	Condition
$265.7 million	Good (60%)

13.1 Wastewater Asset Management

13.1.1 Water and Wastewater Rate Study (2023)

The 2023 Water and Wastewater rate study was completed by Ontario Clean Water Agency (OWCA) dated January 12, 2024. The study was undertaken to provide a fiscally responsible charge for the users of the water and wastewater systems to fund the operating and capital expenditures for the respective services.

The rate study analyzed budgets, reserve funds & debt positions, asset maintenance data, current & forecasted consumption and growth. A copy of the report is found in Appendix D.

On January 29th, 2024 per CR 20240129-007, Council approved:

That:
1. The report from OWCA for the 2023 Amherstburg Water and Waste Water Rate Study BE RECEIVED for information.
2. That Council ADOPT the Recommendation for future rate increases as proposed in the report; and
3. Council DIRECT Administration to initiate a program to review Water and Wastewater rates every 3 years.

This rate is forecast to maintain appropriate reserve balances over the short to medium term while funding the necessary operating and capital expenditures.

Wastewater rates will need to be re-visited prior to 2027 with an update of the water and wastewater asset management plan.

13.1.2 Water & Wastewater Asset Management Plan (2023)

In November 2023, OCWA completed an Asset Management Plan (AMP) specific to Water and Wastewater assets. The Water and Wastewater AMP analysed the replacement value, condition, funding, growth, risk, and financing strategy for water and wastewater assets in both plant and field locations. The contents of the plan informed the analysis and findings for the 2023 Water and Wastewater Rate Study.

A copy of the 2023 Water and Wastewater Asset Management Plan is attached in Appendix E. Information regarding wastewater assets and the detailed asset management plans surrounding the assets can be found in the report.

Future Water and Wastewater AMPs should be formatted to align with the same reporting methodology so that consistency throughout the entire Asset Management Plan can be attained.

13.2 Asset Age

The table below identifies the average age and the estimated useful life for each asset category.

Asset Category	Estimate Useful Life (Yrs)	Average Age (Years)
McGregor Wastewater Treatment	5-80	31.5
McLeod Wastewater Treatment	5-80	26
Big Creek Wastewater Treatment	5-60	26
Boblo Island Wastewater Treatment	5-60	28
Edgewater Wastewater Treatment	5-80	17
Amherstburg Wastewater Treatment	5-80	16
Wastewater Collection	20-75	33.5
AVERAGE		**28.45**

13.3 Lifecycle Management Strategy

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

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

Activity Type	Description of Current Strategy
Maintenance	CCTV inspections occur on select sewer mains on a project basis currently
Preventative Maintenance	System flushing is performed on known flat areas
Rehabilitation	Relining is considered as an option instead of replacement at select locations. Pipes with known inflow and infiltration (I&I) issues are prioritized.

13.4 Risk & Criticality

13.4.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2024 inventory data.
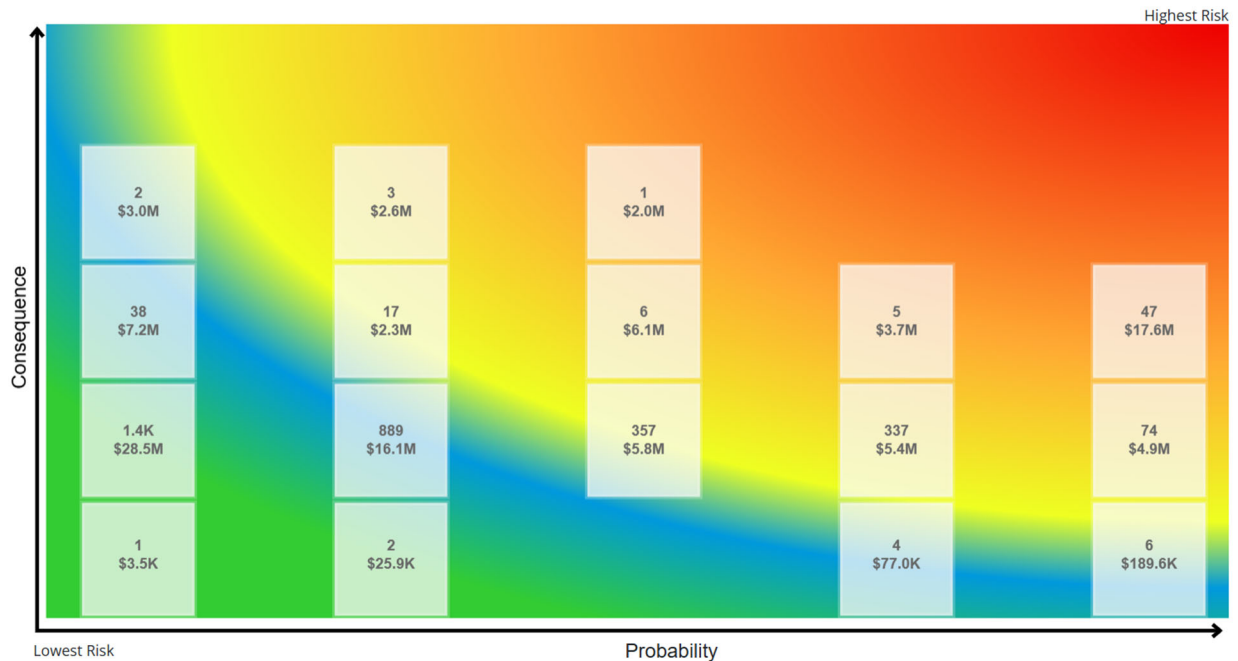
The identification of critical assets allows the Town to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

13.4.2 Risks to Current Asset Management Strategies

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

Climate Change & Extreme Events

With extreme weather events becoming more frequent, the town has experienced inflow & infiltration events from the stormwater system to the wastewater system. These events place a greater burden on the treatment plant since a greater volume of water needs to be treated. As a result, both the treatment plant and collection system will require upgrades to meet future demands.

13.5 Levels of Service

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

13.5.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2024)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system	See Appendix B
Reliability	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	The Town does not own any combined sewers
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	The Town does not own any combined sewers
	Description of how stormwater can get into wastewater sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter wastewater sewers due cross connections. Some stormwater is also able to enter the system from groundwater infiltration. The Town plans to investigate sources as part of a future program

Service Attribute	Qualitative Description	Current LOS (2024)
	Description of how wastewater sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration	A By-Law is in place in the Town which forces residents to disconnect
	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.

13.5.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2021)
Scope	% of properties connected to the municipal wastewater system	76.8%
	% of mainline sanitary sewers flushed annually	5%
	# of O&M FTEs per 10km of sewer	0.6
Reliability	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	N/A
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0.0005
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0.001
Performance	Capital re-investment rate	0.3%
	% of the wastewater system that is in good or very good condition	54%
	% of linear assets inspected annually	7.4%
	% of the wastewater system that is in poor or very poor condition	4%

13.6 Recommendations

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk wastewater network assets.

Asset Management Strategy

- Future Water and Wastewater AMPs should be formatted to align with the same reporting methodology so that consistency throughout the entire Asset Management Plan can be attained.

Risk Management Strategies

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

Lifecycle Management Strategies

- A trenchless re-lining strategy could extend the service life of wastewater mains at a lower total cost of ownership and should be investigated to extend the life of infrastructure at the lowest total cost of ownership.

14 Impacts of Growth

Key Insights

- Understanding the key drivers of growth and demand will allow the Town to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure
- Higher than historical levels of population and employment growth are expected
- The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service

14.1 Description of Growth Assumptions

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

14.1.1 The Corporation of the Town of Amherstburg Official Plan (February 2010)

The Town adopted a new Official Plan in 2010 to ensure conformance with the County of Essex Official Plan, and address matters of local planning interest. The Official Plan is a planning document for the purpose of guiding the future development of the Town of Amherstburg, which includes policies to direct the location and type of housing, industry, offices and sops, and streets, parks, transit, schools and recreational community facilities.

The Official Plan has been approved by the County of Essex on July 15, 2009 and the Ontario Municipal Board Approval Minutes of Settlement on February 3rd, 2010.

The Official Plan identifies area for new growth as areas that can be serviced with municipal sanitary sewer service and water supplies. The majority of the areas selected for future growth are extensions of established areas in order to efficiently provide services to residents of the community. The areas identified for residential development include the old Town of Amherstburg, lands south of the old Town, lands north of Texas Road, McGregor, Bois Blanc Island and Amherst Point. All these areas have sanitary sewer services available.

The majority of non-residential growth will be directed to the Town's Neighbourhood Commercial areas and General Commercial Areas, with some development permitted in Commercial Special Policy Areas, following the Commercial Land Use Designation Policies.

 A new Town of Amherstburg Official Plan is anticipated to be approved in 2025. It will use data from the recent County of Essex Official Plan (2024) and updated information for the municipality.

14.1.2 County of Essex Official Plan (October 2024)

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

The following table outlines the historical population, based on 2021 census data, and the population forecasts allocated to Amherstburg in the 2024 County of Essex Official Plan and 2022 Growth Analysis Report – Essex County.

Year	Population
2021	23,524
2026	26,400
2031	28,500
2041	32,700
2051	36,100

14.2 Impact of Growth on Lifecycle Activities and Financial Strategy

As part of the legislated requirements, the Town's asset management plan must include a discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.

Planning for forecasted population growth may require the expansion of existing infrastructure and services. There is some uncertainty about the quantity of growth due to the dynamic global geopolitical environment in 2025 and the impacts this could have on the global, North American, regional and local economies. Acknowledging the uncertainty about the larger-scale economies, the Town has the ability to create certainty over how development occurs and new growth-related assets are or are not created. The concept of "Compact Built Form" as defined in the Provincial Planning Statement (2024) could be applied to new development in Amherstburg. This could result in efficient use of land and shorter lengths of linear infrastructure that need to be operated, maintained, rehabilitated and replaced over their life-cycles. Compact built form contributes to minimizing both liabilities and

risks associated with the creation of growth-related assets.

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

There are currently no major additional assets that need to be forecast into the 5-10 year capital plan to account for growth. If growth remains at a moderate level, the current budgeting strategy can be maintained and will not alter the recommended financial strategy of a gradual increase to the reserve accounts through the asset management levy.   If unanticipated growth were to occur, projects would have to be re-prioritized within the budgeting process.

See Appendix F – 2024 Development Charges Study for additional planning information.

15 Financial Strategy

Key Insights

- The Town is committing approximately $8.9 million towards capital projects for tax levy assets per year as per the 5-year capital plan annual average funding
- Given the adopted Level of Service (LOS) annual capital requirement of $20.2 million for tax levy assets, there is currently a funding gap of $11.3 million annually
- For tax-funded assets, it is recommended to increase tax revenues by an additional 2.5% each year for the next 10 years to work towards achieving a sustainable level of funding to meet the adopted LOS
- For the water and wastewater network, the 2024 rate study approved by Council recommended increasing the water and wastewater rates annually for 2024-2026 and monitor real growth rates to inform future rate adjustments.

15.1 Financial Strategy Overview

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Town of Amherstburg 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 for Council's adopted level of service
    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. Canadian Community Building Fund
    b. Ontario Community Infrastructure Fund (OCIF)
    c. Specific project 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.

15.1.1 Annual Requirements & Capital Funding

Average Annual Requirements

The average annual requirements represent the amount the Town would need to allocate annually to each asset category in order to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. This full funding level allows for replacement when the assets reach the end of their useful life. If the Town wanted to raise their LOS to meet this threshold, the Town would need to allocate approximately $24.7 million annually to address capital requirements for the tax levy assets included in this AMP.

Average Annual Capital Requirements
$24,728,101

Category	Amount
Road Network	$9.4M
Buildings & Facilities	$6.5M
Land Improvements	$2.9M
Stormwater Network	$1.8M
Bridges & Culverts	$1.5M
Vehicles	$1.1M
Machinery & Equipment	$0.9M
Natural Assets	$0.7M
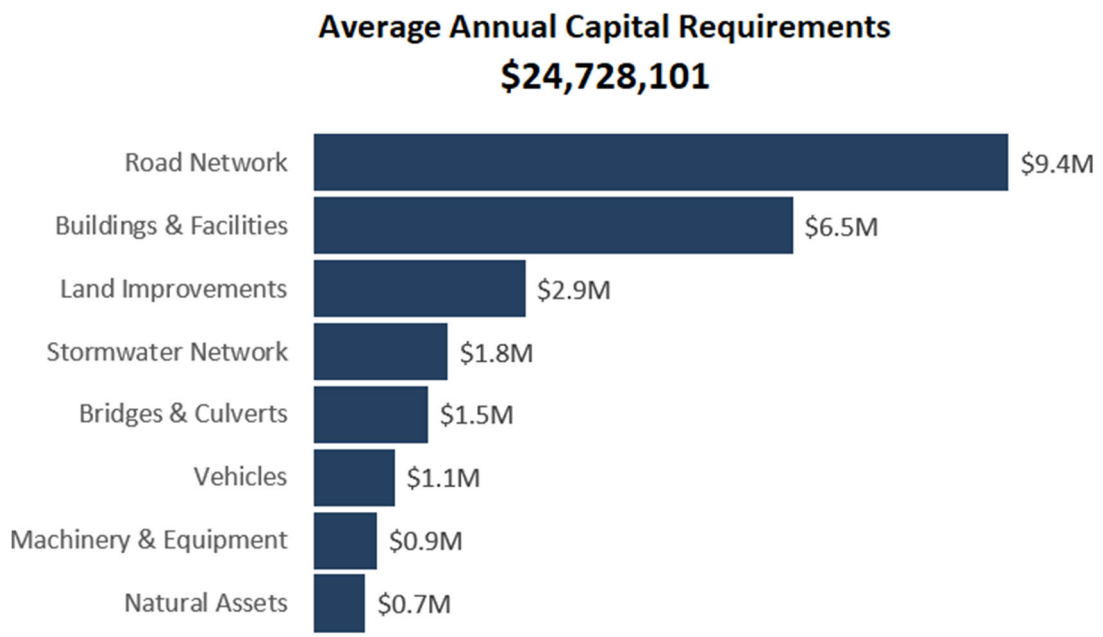
For most asset categories the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset.

However, for the Road Network and Stormwater Network, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Town's roads and stormwater mains respectively. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented:

1. **Replacement Only Scenario**: Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.

2. **Lifecycle Strategy Scenario**: Based on the assumption that lifecycle activities are performed at strategic intervals to extend the service life of assets until replacement is required.

Requirements for Adopted Level of Service (LOS)

The funding required for the adopted Level of Service to maintain the 2022 AMP levels of service of condition and levels of risk is shown below. This is a lower level of service than Average Annual Requirements since some assets will need to be kept past the end of their useful life or have delayed replacement. The Town would need to allocate approximately $20.2 million annually to maintain the adopted LOS.

Annual Capital Required for Adopted LOS
$20,235,339

Category	Amount
Road Network	$6.8M
Buildings & Facilities	$6.1M
Land Improvements	$2.7M
Stormwater Network	$1.3M
Vehicles	$1.1M
Bridges & Culverts	$0.8M
Machinery & Equipment	$0.7M
Natural Assets	$0.7M
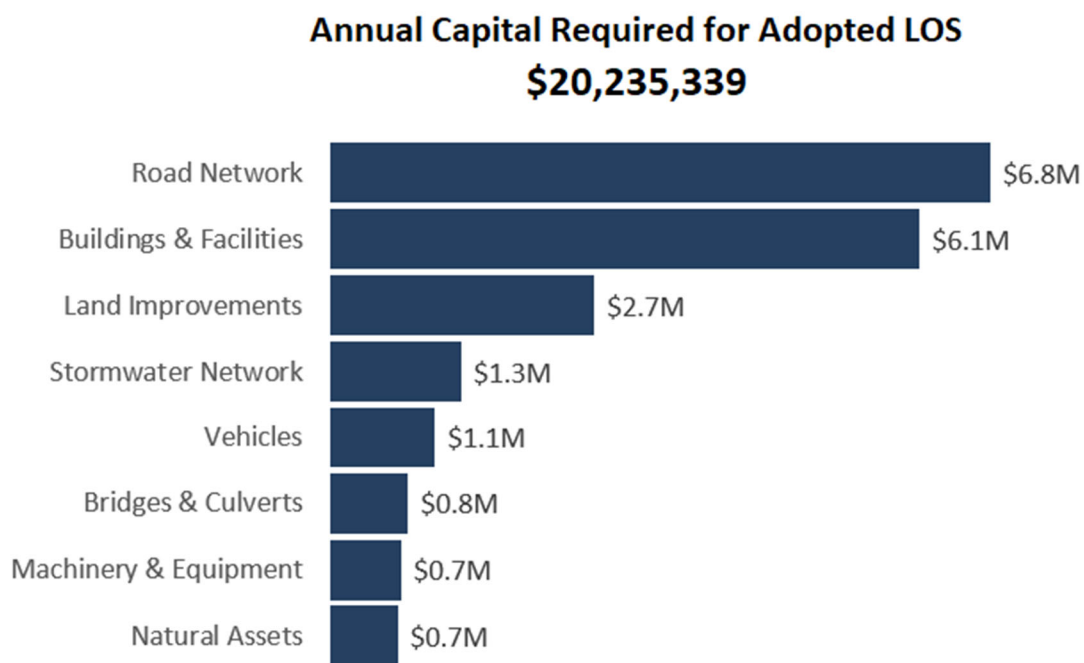
Annual Funding Available

The below table shows the current annual average projected spend for the 5-year capital plan. These numbers represent the total amounts approved in principle over the next 5 years in the 2025 capital budget and averaged to an annual amount. These allocations by asset category will change over the years, depending on what capital projects are prioritized year by year and what assets are in need of replacement. The allocation by asset segment should not be taken as absolute, instead only representative of the current funding allocation.

Asset Category	Projected 5-Year Average Annual Investment
Road Network	$ 5,370,460
Stormwater Network	$ 15,000
Bridges & Culverts	$ 962,000
Building & Facilities	$ 442,000
Machinery & Equipment	$ 249,940
Land Improvements	$ 756,000
Natural Assets	$ 50,000
Vehicles	$ 1,095,200
TOTAL	**$ 8,940,600**

Based on an annual average projected spend for the 5-year capital plan, the Town is committing approximately $8.9 million towards capital tax levy asset projects per year. Given the annual capital requirement of $20.2 million to meet adopted LOS, there is currently a funding gap of $11.3 million annually.

15.2 Funding Objective

15.2.1 Tax Funded Assets

Two scenarios have been developed: one that would enable Amherstburg to fund the average annual requirements and one that would move towards addressing funding for the adopted level of service shortfall. The scenarios are presented with a 10, 15 and 20-year timeline for the following assets:

Tax Funded Assets: Road Network, Storm Network, Bridges & Culverts, Buildings & Facilities, Machinery & Equipment, Natural Assets, Land Improvements and Vehicles.

15.2.2 Rate Funded Assets

Council has recently approved a funding strategy for the following assets:

Rate Funded Assets: Water & Wastewater

On January 12, 2024, council approved the 2023 Water and Wastewater rate study completed by Ontario Clean Water Agency (OWCA,). The study analyzed budgets, reserve funds & debt positions, asset maintenance data, current & forecasted consumption and growth.

The attached Water and Wastewater Rate Study report in Appendix D includes the recommended rate for funding. This rate is forecast to maintain appropriate reserve balances over the short to medium term while funding the necessary operating and capital expenditures.

Since the water and wastewater asset management funding strategy has been addressed through council directive with the rate study, the info has been included in this report for information purposes and to provide a single source for the 2025 AMP.

Water and wastewater rates will need to be re-visited prior to 2027 with an update of the water and wastewater asset management plan. Future Water and Wastewater AMPs should be formatted to align with the same reporting methodology so that consistency throughout the entire Asset Management Plan can be attained.

15.3 Financial Profile: Tax Funded Assets

15.3.1 Current Funding Position

The following tables show, by asset category, Amherstburg's annual capital expenditure requirements to meet adopted LOS and projected annual capital spend.

Asset Category	Adopted LOS Requirements	Projected 5-Year Average Annual Capital Spend
Road Network	$ 6,797,518	$ 5,370,460
Stormwater Network	$ 1,346,190	$ 15,000
Bridges & Culverts	$ 801,482	$ 962,000
Building & Facilities	$ 6,068,942	$ 442,000
Machinery & Equipment	$ 728,316	$ 249,940
Land Improvements	$ 2,719,839	$ 756,000
Natural Assets	$ 693,470	$ 50,000
Vehicles	$ 1,079,582	$ 1,095,000
	$ 20,235,339	$ 8,940,600

The average annual capital expenditure requirement for the above categories is $20.2 million. The average annual 5-year capital budget currently allocated to these assets for capital purposes is $8.9 million, leaving an annual deficit of $11.3 million. Put differently, these infrastructure categories are currently funded at 44% of their long-term requirements to meet adopted LOS.

The following table shows annual funding sources for assets. Some reserves are dedicated to specific assets and can only be utilized according to their restrictions.

Annual Funding Sources				
CCBF	OCIF	Taxes To Dedicated Reserves	Taxes to Reserves	Total Funding Sources
$ 1,200,850	$ 2,556,779	$1,384,462	$6,188,919	$9,946,548

Note: not including water and wastewater reserves and not including operating reserves. Therefore, total will not tie out to cash position on financial statements because not all reserves included.

15.3.2 Full Funding Requirements

In 2025, the Town of Amherstburg has annual budgeted tax revenues of $32 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 one-time tax increase for either of the two scenarios:

Funding Scenario	Requirement	5 Yr Average Annual Funding	Deficit	One-Time Tax Change Required for Full Funding
Average Annual Requirement	$24,728,101	$8,940,600	$15,787,501	49.3%
Capital Requirements for Adopted LOS	$20,235,339	$8,940,600	$11,294,739	35.3%

Note: The calculated annual increase includes a 3% annual compounding inflationary adjustment.

As part of the 2024 Asset Management Update, Council Resolution 20240708-010 directed that:
Administration develop 10, 15- and 20-year models for new re-investment rates based on the 2025 asset management plan and that it be brought back to the Audit and Finance Advisory Committee for their review and recommendation to Council.

As requested, the required tax levy increase required to address the funding shortfall is shown over a number of different timelines. Both the Average Annual Requirement and Capital Requirements for Adopted LOS is shown in the scenarios. The Average Annual Requirement represents the amount needed if assets were to be replaced at the end of their estimated useful lives and is a higher level of service than the adopted LOS. The Capital Requirements for Adopted LOS is the Council approved LOS required to maintain assets at the same condition level as the 2022 AMP.

The tables below outline various financial strategies to move toward addressing the funding shortfall:

Financial Strategy #1 -Average Annual Requirement				
Infrastructure Deficit	$15,787,501	$15,787,501	$15,787,501	$15,787,501
One Time Tax Increase	49%	49%	49%	49%
YEARS	10	15	20	77
Annual Increase:	5.8%	4.1%	3.3%	1.6%
Current AMP Levy	1.6%	1.6%	1.6%	1.6%
Change:	4.2%	2.5%	1.7%	0.0%

Note: The calculated annual increase includes a 3% annual compounding inflationary adjustment.

The above rates show the additional tax levy required, in addition to the current AMP levy, in order to work towards full funding for end of life replacement of existing assets. The table is based on the amount of years it would take for that rate to be applied annually to reach asset funding parity. The last column shows it would take 77 years to reach parity if only remaining at the current asset management levy of 1.6%.

Financial Strategy #2 -Council Adopted LOS				
Infrastructure Deficit	$11,294,739	$11,294,739	$11,294,739	$11,294,739
One Time Tax Increase	35%	35%	35%	35%
YEARS	10	15	20	35
Annual Increase:	4.1%	3.0%	2.4%	1.6%
Current AMP Levy	1.6%	1.6%	1.6%	1.6%
Change:	2.5%	1.4%	0.8%	0.0%

Note: The calculated annual increase includes a 3% annual compounding inflationary adjustment.

The above rates show the additional tax levy required, in addition to the current AMP levy, in order to work towards full funding for replacement of existing assets at the Council adopted Level of Service (LOS from 2022 AMP). The table is based on the amount of years it would take for that rate to be applied annually to reach asset funding parity. The last column shows it would take 35 years to reach parity if only remaining at the current asset management levy of 1.6%.

15.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 10-year option. This involves funding for the adopted LOS deficit being addressed over 10 years by:

a) Increasing tax revenues by 2.5% in addition to the current 1.6% asset management levy each year for the next 10 years, solely for the purpose of phasing in funding to the tax funded asset categories covered in this section of the AMP.
b) Reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
c) Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.
d) Allocating the current CCBF and OCIF revenue as outlined previously.
e) Allocating the scheduled OCIF grant increases to the infrastructure deficit as they occur.

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 base line OCIF formula-based funding, if applicable, since this funding is a multi-year commitment[2].
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option seeks to address the funding gap on an annual basis over 10 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 $ 2.6 million for the Stormwater Network, $6.6 million for Road Network, $11.9 million for Buildings, $943K for Machinery & Equipment, $2.7 million for Vehicles and $2.6 million for Land Improvements.

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

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 and risk analysis may require otherwise.

15.3.4 Funding Shortfall for Adopted Levels of Service

Since the financial strategy will take some time before it is at a sustainable level of funding, there will be a number of years that many asset classes will not meet the financial requirements for the proposed/adopted levels of service.

The Town will undertake the lifecycle activities as outlined each subsequent year in the rolling 5-year capital plan. Lifecycle activities will be prioritized in each area based on need, priorities and risk tolerance. As part of the budget process, a review of the asset management progress will be included and council will be able to direct any necessary changes. Risks will be managed on a priority basis within the budget deliberation.

15.4 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 4.0%[3] over 15 years would result in a 35% premium or $350,000 of increased costs due to interest payments. This is equivalent to one-time tax levy increase of 1.09%. 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%

A change in 15-year rates from 4% to 6% would change the premium from 35% to 54%. Such a change would have a significant impact on a financial plan.

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[3] Current municipal Infrastructure Ontario rates for 15-year money is 4.29 %, as of April 2025.

The following tables outline how Amherstburg has historically used debt for investing in the asset categories as listed:

Asset Category	Current Debt Outstanding (2024)	Use of Debt in the Last Five Years				
		2020	2021	2022	2023	2024*
Road Network	3,353,896					
Stormwater Network						
Bridges & Culverts						
Buildings & Facilities	4,227,302					
Machinery & Equipment	-					
Land Improvements	229,422					
Natural Assets						
Vehicles						
Total Tax Funded:	**7,810,620**	**0**	**0**	**0**	**0**	**0**
Water Network	2,145,054					
Wastewater Network	13,833,459					
Total Rate Funded:	**15,978,513**	**0**	**0**	**0**	**0**	**0**

*While Council has approved the use of debt for specific projects (eg Water Treatment Plant expansion and Fire Hall), debt has not yet needed to be issued for these projects. Therefore, the debt amounts are not included in the schedule.

There is currently $7.8 million of debt outstanding for tax funded assets with corresponding annual principal and interest payments of $751,887. As well, there is currently $16 million of debt outstanding for rate funded assets with corresponding annual principal and interest payments of $2,266,400 until 2031 and reduced payments thereafter. These amounts are well within its provincially prescribed maximum annual payment of $12.7 million as of 2023.

Asset Category	Principal & Interest Payments in the Next Ten Years*									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Road Network	365,621	365,621	365,621	365,621	365,621	365,621	365,621	365,621	365,621	365,621
Stormwater Network										
Bridges & Culverts										
Buildings & Facilities	358,716	358,716	358,716	358,716	358,716	358,716	358,716	358,716	358,716	358,716
Machinery & Equipment	-	-	-							
Land Improvements	27,550	27,550	27,550	27,550	27,550	27,550	27,550	27,550	27,550	27,550
Vehicles										
Total Tax Funded:	**751,887**	**751,887**	**751,887**	**751,887**	**751,887**	**751,887**	**751,887**	**751,887**	**751,887**	**751,887**
Water Network	257,057	257,057	257,057	257,057	257,057	257,057	257,057	257,057	257,057	257,057
Wastewater Network	2,009,343	2,009,126	2,008,909	2,008,695	2,008,475	2,008,257	2,008,040	687,384	687,384	565,388
Total Rate Funded:	**2,266,400**	**2,266,183**	**2,265,966**	**2,265,752**	**2,265,532**	**2,265,314**	**2,265,097**	**944,441**	**944,441**	**822,445**

*While Council has approved the use of debt for specific projects (eg Water Treatment Plant expansion and Fire Hall), debt has not yet needed to be issued for these projects. Therefore, the debt amounts are not included in the schedule.

The revenue options outlined in this plan allow Amherstburg to plan towards funding its long-term infrastructure requirements without further use of debt. However, debt may need to be considered in the interim until the funding gap is addressed.

15.5 Use of Reserves

15.5.1 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

The table below outlines the details of the reserves available to Amherstburg for existing assets. NOTE: This is a year-end balance and does not reflect committed funds.

Reserve Balances (on December 31, 2024*)				
CCBF	OCIF	Dedicated Reserves	General Reserves	Total Available
$ 1,805,885	$ 2,914,589	$7,876,863	$15,217,257	$27,814,594

* Unaudited. Financial statements have not been approved through council at time of printing.
Note: This does not include water and wastewater reserves and does not include operating reserves. Therefore, total will not tie out to cash position on financial statements because not all reserves included.

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

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

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

The benefit of having healthy reserve balances is that:

a) Reduce debt load
b) Stay in compliance with debt policy and municipal act.
c) Can borrow from yourself rather than external source
d) Cash availability in event of emergency or emergent need
e) Flexibility to the municipality

15.5.2 Recommendation

In order to address the annual funding shortfall of $11.3 million, it is recommended that a 10-year funding strategy resulting in a 2.5% increase in addition to the 1.6% for asset management be implemented.

Past 2025, Ontario Regulation 588/17 will require Amherstburg to provide a new asset management plan every 5 years. We recommend that future planning should reflect Council approved adjustments to service levels and their impacts on future funding requirements of reserve balances.

16 Appendices

Key Insights

- Appendix A identifies projected capital requirements for each asset category for estimated useful life replacement

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

- Appendix C provides performance of assets over 10 years

- Appendix D includes 2023 Water and Wastewater Rate Study

- Appendix E includes 2023 Water and Wastewater Asset Management Plan

- Appendix F includes 2024 Development Charges Background Study

Appendix A: Capital Requirements for Estimated Useful Life Replacement

With the proposed Levels of Service set at 2022 Asset Management Plan condition levels, some assets would need to be maintained or not replaced until past their estimated useful life. The following sections show the cost requirements if the level of service was increased to allow for asset replacement at end of useful life.

a) 10-Year Capital Requirements for Replacement at End of Useful Life

The following tables identify the capital cost requirements for each of the next 10 years in order to meet capital requirements to replace assets at the end of their estimated useful life.   Note: Backlog refers to assets that are older than their estimated useful life.

Bridges & Culverts	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Bridges	$ -	$1,042,000	$1,140,000	$ 213,000	$ 132,000	$1,277,000	$ 353,000	$ 435,000	$ -	$ 100,000	$ 407,000
Culverts	$ -	$1,423,000	$ 336,000	$1,167,000	$ 557,000	$ 406,500	$1,092,000	$ 537,000	$ 674,750	$ 722,000	$ 117,000
Bridges & Culverts Total	**$ -**	**$2,465,000**	**$1,476,000**	**$1,380,000**	**$ 689,000**	**$1,683,500**	**$1,445,000**	**$ 972,000**	**$ 674,750**	**$ 822,000**	**$ 524,000**

Buildings & Facilities

	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Administration	$ 5,747,208	$ 86,694	$ 572,757	$ 493,354	$ 541,837	$ 2,181,638	$ 152,987	$ 184,802	$ 959,676	$ -	$ -
Facilities	$ -	$ 11,700	$ -	$ 2,581	$ -	$ 48,517	$ -	$ -	$ -	$ -	$ -
Fire Stations	$ 1,571,362	$ 1,679,126	$ 1,895,010	$ 1,579,573	$ 1,071,219	$ 2,980,591	$ 1,441,784	$ 1,170,550	$ 1,205,666	$ 1,241,836	$ 1,279,091
Historical Buildings & Libraries	$ 758,176	$ 1,167,246	$ 398,404	$ 190,791	$ 38,255	$ 1,061,860	$ -	$ 7,485	$11,791,025	$ -	$ 117,281
Municipal Parking Lots	$ -	$ -	$ -	$ 764,909	$ -	$ -	$ -	$ -	$ 589,048	$ -	$ 221,746
Parks Buildings	$ 390,515	$ 94,955	$ 531,413	$ 7,786	$ 458,069	$ 238,839	$ 49,975	$ 4,450	$ 69,740	$ -	$ -
Protection Services	$ 58,924	$ 49,592	$ 130,391	$ 49,576	$ -	$ 240,626	$ -	$ 91,638	$ -	$ -	$ -
Public Works	$ 1,476,580	$ 1,054,893	$ 234,185	$ 243,692	$ -	$ 77,588	$ 232,529	$ 325,944	$ 782	$ -	$ -
Recreation Centres	$ 1,913,458	$ 69,638	$ 504,573	$ 1,876,562	$ 64,703	$ 1,573,701	$ 68,644	$ 1,218,896	$ 3,371,493	$ 75,009	$ 590,978
Buildings & Facilities Total	**$11,916,223**	**$ 4,213,844**	**$ 4,266,733**	**$ 5,208,824**	**$ 2,174,082**	**$ 8,403,360**	**$ 1,945,917**	**$ 3,003,764**	**$17,987,430**	**$ 1,316,845**	**$ 2,209,096**

Land Improvements

	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fencing	$ -	$ -	$ 55,690	$ -	$ -	$ -	$ -	$ -	$ 525,710	$ -	$ -
Park Amenities	$ 69,078	$ 5,768	$ 29,921	$ 23,119	$ 128,627	$ 6,492	$ 21,393	$ 29,280	$ 18,181	$ 660,265	$ 14,857
Park Infrastructure	$ 206,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Parking Lots - Parks	$ -	$ -	$ -	$ 1,174,682	$ 1,238,060	$ 927,419	$ -	$ -	$ 374,414	$ -	$ 134,392
Pathways/Signage	$ 993,950	$ -	$ -	$ 794,959	$ -	$ -	$ -	$ -	$ 1,859,346	$ -	$ -
Play Spaces	$ -	$ -	$ 424,360	$ -	$ 1,857,090	$ 173,891	$ 1,432,863	$ -	$ 190,016	$ 391,432	$ 1,814,287
Sport Spaces	$ 1,313,250	$ -	$ -	$ 1,562,600	$ 140,689	$ 434,728	$ -	$ -	$ -	$ -	$ 1,108,731
Structures	$ -	$ -	$ -	$ 191,227	$ -	$ 524,089	$ -	$ -	$ 25,335	$ -	$ 248,625
Land Improvements Total	**$ 2,582,278**	**$ 5,768**	**$ 509,970**	**$ 3,746,586**	**$ 3,364,464**	**$ 2,066,619**	**$ 1,454,255**	**$ 29,280**	**$ 2,993,001**	**$ 1,051,697**	**$ 3,320,891**

Machinery & Equipment

	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Facilities	$ 7,416	$ 27,810	$ 42,436	$ 7,868	$ -	$ -	$ 250,751	$ 8,855	$ 301,152	$ 69,645	$ 282,222
Fire	$ 418,077	$ 75,345	$ 211,066	$ 132,493	$ 99,889	$ 130,708	$ 215,067	$ 129,444	$ 110,526	$ 202,566	$ 191,844
IT	$ 240,351	$ 83,276	$ 66,731	$ 172,651	$ 91,335	$ 1,250,799	$ 184,780	$ 153,488	$ 326,257	$ 87,028	$ 161,740
Parks	$ 277,159	$ 164,924	$ 163,389	$ 181,869	$ 39,314	$ -	$ 443,495	$ -	$ 28,325	$ -	$ 22,847
Public Works	$ -	$ -	$ 51,032	$ 9,835	$ 225,008	$ -	$ 868,183	$ -	$ 476,559	$ 766,173	$ 94,074
Machinery & Equipment Total	**$ 943,002**	**$ 351,354**	**$ 534,654**	**$ 504,715**	**$ 455,546**	**$ 1,381,507**	**$ 1,962,276**	**$ 291,788**	**$ 1,242,818**	**$ 1,125,413**	**$ 752,728**

Natural Assets

	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Naturalized Areas	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Shorewalls	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Natural Assets Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Road Network

	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Asphalt Road Surface (Rural)	$ -	$ 2,034,677	$ 1,022,407	$ 810,094	$ 1,196,202	$ 91,809	$ 1,225,058	$ 2,123,904	$ 864,272	$ 3,857,115	$ 3,711,781
Gravel Road Surface	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 56,201	$ -	$ 158,051	$ 100,524
Multi-Type Road Surface (Urban)	$ 268,779	$ 2,341,308	$ 1,086,162	$ 758,837	$ 337,766	$ 215,843	$ 758,363	$ 586,008	$ 188,542	$ 384,716	$ 1,665,515
ROW Structures	$ -	$ 20,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sidewalks	$ 101,069	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,146,028	$ -	$ -
Signalized Crossings	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,304,773	$ -
Streetlights	$ 6,264,975	$ 180,250	$ 84,872	$ 442,555	$ 67,530	$ 75,353	$ 191,048	$ -	$ 633,385	$ 130,477	$ 20,159
Tar & Chip Road Surface	$ -	$ 20,578	$ 49,912	$ 23,885	$ 1,719	$ -	$ -	$ 55,165	$ 19,257	$ 45,473	$ 81,421
Road Network Total	**$ 6,634,823**	**$ 4,597,413**	**$ 2,243,353**	**$ 2,035,371**	**$ 1,603,218**	**$ 383,005**	**$ 2,174,469**	**$ 2,821,276**	**$ 2,851,483**	**$ 5,880,606**	**$ 5,579,400**

Stormwater Network

	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Catch Basins	$ 2,379,300	$ 687,525	$ 1,113,945	$ 278,645	$ 101,296	$ 156,502	$ 223,885	$ 451,978	$ 123,510	$ -	$ 262,064
MD Pumping Stations	$ 193,063	$ 1,164,725	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 74,426
Storm Pumping Stations	$ -	$ -	$ -	$ 74,263	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Stormwater Manholes	$ -	$ 1,738,125	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Stormwater Pipes	$ -	$ 57,465	$ -	$ -	$ -	$ -	$ 71,063	$ 148,214	$ -	$ 852,230	$ -
Stormwater Ponds	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,014,113	$ -	$ -	$ -	$ -
Stormwater Network Total	**$ 2,572,363**	**$ 3,647,840**	**$ 1,113,945**	**$ 352,908**	**$ 101,296**	**$ 156,502**	**$ 3,309,060**	**$ 600,193**	**$ 123,510**	**$ 852,230**	**$ 336,490**

Vehicles											
	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Building	$ -	$ -	$ -	$ 49,173	$ -	$ -	$ -	$ -	$ -	$ 58,715	$ -
By-law	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 65,239	$ 67,196
Facilities	$ -	$ -	$ -	$ 245,864	$ -	$ -	$ 77,613	$ -	$ -	$ 176,144	$ -
Fire - Heavy Duty	$ 1,236,000	$ -	$ -	$ -	$ 3,376,526	$ -	$ 1,910,484	$ -	$ 2,026,832	$ -	$ -
Fire - Light Duty	$ 412,000	$ 103,000	$ 30,766	$ 109,273	$ -	$ 86,946	$ 597,026	$ -	$ 126,677	$ -	$ 60,476
Parks	$ -	$ -	$ -	$ -	$ 191,337	$ -	$ 47,762	$ -	$ 152,012	$ -	$ 154,550
Public Works	$ 1,078,442	$ 226,600	$ -	$ 213,082	$ 348,908	$ -	$ 477,621	$ 110,689	$ -	$ 91,334	$ 651,799
Vehicles Total	**$ 2,726,442**	**$ 329,600**	**$ 30,766**	**$ 617,391**	**$ 3,916,771**	**$ 86,946**	**$ 3,110,506**	**$ 110,689**	**$ 2,305,522**	**$ 391,432**	**$ 934,022**

Wastewater Network											
	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
McGregor WWC		$ -	$ 39,950	$ 39,950	$ 39,980	$ 339,890	$ 339,849	$ 80,080	$ 79,950	$ 79,800	$ 80,200
McLeod WWT		$ 159,750	$ -	$ 59,685	$ -	$ 200,000	$ 199,981	$ 199,866	$ 199,696	$ 199,625	$ 200,630
Big Creek Marsh WWT		$ 82,225	$ 69,100	$ -	$ -	$ 79,825	$ 80,000	$ 80,175	$ 79,900	$ 80,000	$ 80,000
Boblo Island WWT		$ -	$ -	$ -	$ -	$ 59,780	$ 60,150	$ 60,000	$ 59,500	$ 60,300	$ 56,824
Edgewater Beach WWT		$ -	$ -	$ -	$ -	$ 89,445	$ 90,550	$ 89,850	$ 87,900	$ 50,775	$ 128,800
Amherstburg WWT		$ 229,889	$ 99,910	$ 150,000	$ 99,920	$ 1,441,620	$ 262,950	$ 642,105	$ 352,822	$ 289,475	$ 147,535
Wastewater Collection		$ 150,000	$ 1,900,000	$ 700,000	$ -	$ 160,427	$ 232,102	$ 144,219	$ 75,211	$ 385,336	$ 181,047
Wastewater Machinery & Equip't	$ 15,450	$ 17,819	$ 3,501	$ -	$ 4,502	$ -	$ 14,370	$ 24,597	$ -	$ -	$ -
Wastewater Vehicles	$ 154,500	$ -	$ -	$ 42,616	$ 29,263	$ -	$ -	$ -	$ -	$ -	$ -
Wastewater Network Total	**$ 169,950**	**$ 639,683**	**$ 2,112,461**	**$ 992,251**	**$ 173,665**	**$ 2,370,987**	**$ 1,279,952**	**$ 1,320,892**	**$ 934,979**	**$ 1,145,311**	**$ 875,035**

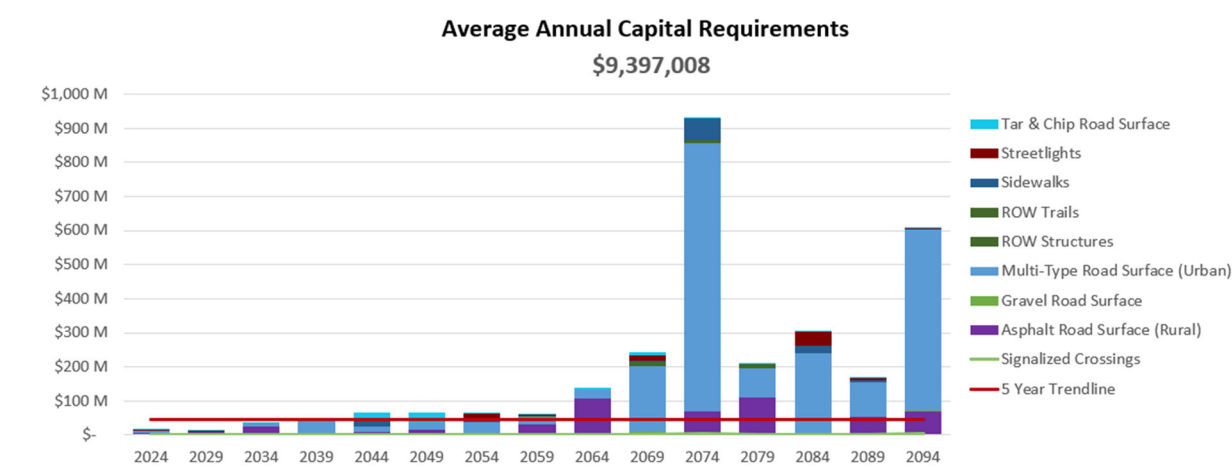| Water Network											
	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Amherstburg WT		$ 1,085,151	$ 2,077,520	$ 1,347,300	$ 479,380	$ 5,317,593	$ 196,300	$ 193,643	$ 100,020	$ 84,220	$ 1,315,450
Watermains		$ 1,198,969	$ -	$ 570,488	$ 616,702	$ 808,056	$ 1,682,331	$ 475,302	$ 1,706,030	$ 580,507	$ 1,882,755
Water Machinery & Equipment	$ 27,994	$ 31,621	$ 8,487	$ 95,985	$ 1,801	$ -	$ 23,881	$ 1,968	$ -	$ 16,635	$ 11,126
Water Meters	$ -	$ 360,500	$ 371,315	$ 382,454	$ 393,928	$ 405,746	$ 417,918	$ 430,456	$ 443,370	$ 456,671	$ 470,371
Water Vehicles	$ 427,223	$ -	$ -	$ 28,411	$ 43,895	$ -	$ -	$ -	$ -	$ 567,576	$ 107,513
Water Network Total	**$ 455,218**	**$ 2,676,241**	**$ 2,457,322**	**$ 2,424,639**	**$ 1,535,706**	**$ 6,531,396**	**$ 2,320,431**	**$ 1,101,369**	**$ 2,249,419**	**$ 1,705,609**	**$ 3,787,215**

b) Long Term Capital Requirements for Asset Replacement at End of Useful Life

The following graphs depict the annual requirements if the Town were to fund the replacement of tax levy assets at the end of their useful life.
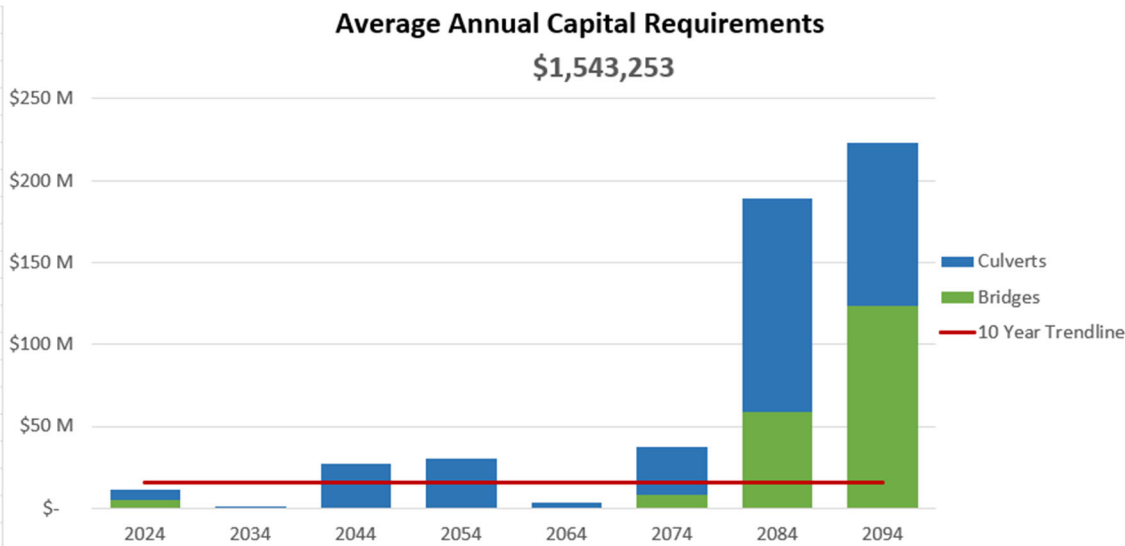
Based on the lifecycle strategies identified in each of the chapters and assuming the end-of-life replacement of assets, the following graphs forecast the long-term capital requirements that would be required for each of the tax levy asset classifications.

The annual capital requirement represents the average amount per year that the Town would need to allocate towards funding rehabilitation and replacement needs if replacing assets at the end of useful life. The following graphs identify capital requirements if every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year or 10-year bins and the trend line represents the average 5-year or 10-year capital requirements to meet average annual replacement funding for asset end-of-life.

Roads

Average Annual Capital Requirements
$9,397,008

Bridges & Culverts

Average Annual Capital Requirements

$1,543,253

Legend:
- Culverts
- Bridges
- 10 Year Trendline

Y-axis: $- , $50 M, $100 M, $150 M, $200 M, $250 M

X-axis: 2024, 2034, 2044, 2054, 2064, 2074, 2084, 2094

Stormwater

Average Annual Capital Requirements

$1,810,887

Legend:
- Stormwater Ponds
- Stormwater Pipes
- Stormwater Manholes
- Storm Pumping Stations
- MD Pumping Stations
- Catch Basins
- 10 Year Trendline

Y-axis: $- , $50 M, $100 M, $150 M, $200 M, $250 M, $300 M, $350 M, $400 M, $450 M

X-axis: 2024, 2034, 2044, 2054, 2064, 2074, 2084, 2094, 2104, 2114, 2124

Buildings & Facilities

Average Annual Capital Requirements

$6,475,230

Legend:
- Recreation Centres
- Public Works
- Protection Services
- Parks Buildings
- Historical Buildings & Libraries
- Fire Stations
- Facilities
- Administration
- 5 Year Trendline

Vehicles

Average Annual Capital Requirements

$1,092,011

Legend:
- Public Works
- Parks
- Fire - Light Duty
- Fire - Heavy Duty
- Facilities
- By-law
- Building
- 5 Year Trendline

Machinery & Equipment

Average Annual Capital Requirements

$854,716

Legend:
- Public Works
- Parks
- IT
- Fire
- Facilities
- 5 Year Trendline

Land Improvements

Average Annual Capital Requirements
$2,857,083

Legend:
- Structures
- Sport Spaces
- Public Art
- Play Spaces
- Parking Lots - Parks
- Park Infrastructure
- Park Amenities
- Fencing
- 5 Year Trendline

Natural Assets

Average Annual Capital Requirements
$697,913

Legend:
- Shorewall
- Naturalized Areas
- 10 Year Trendline

Note: Trees have not been included in the yearly breakdown since their age is unknown but have been included in the average annual capital requirements.

Appendix B: Level of Service Maps

Road Network Map
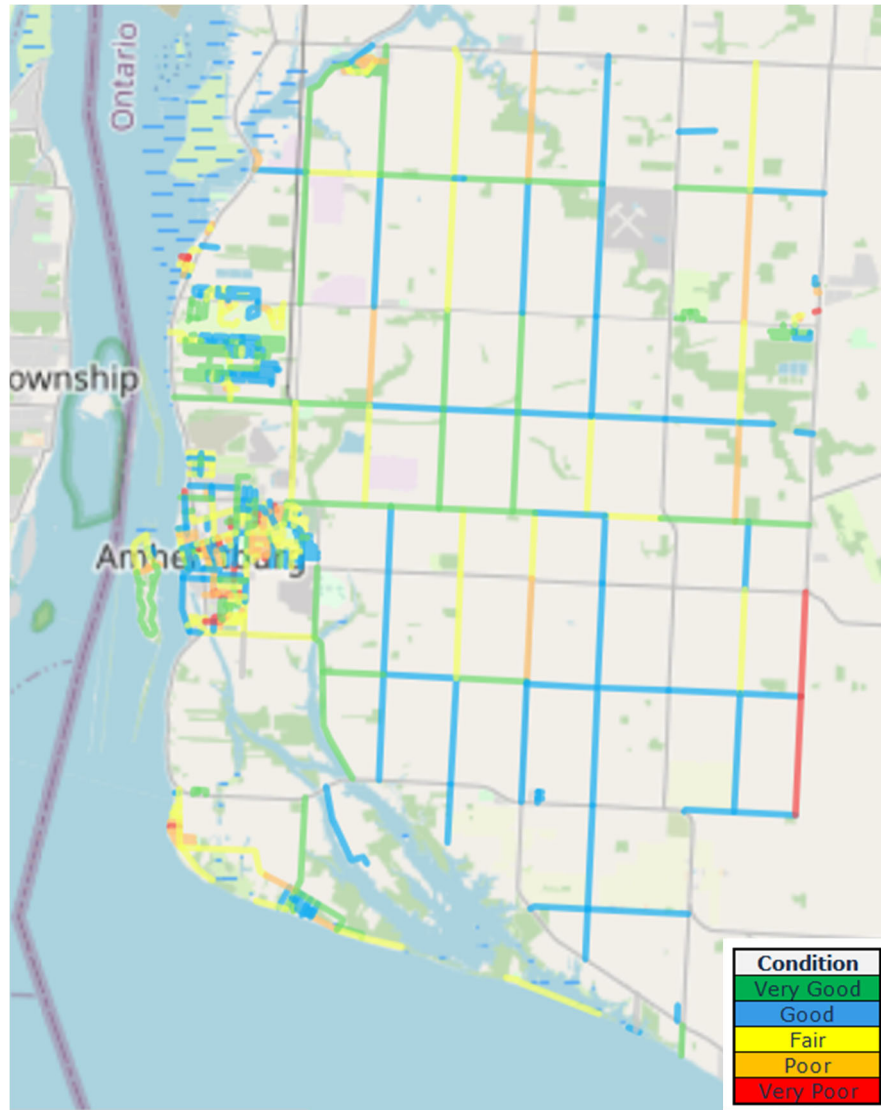
Bridges & Culverts
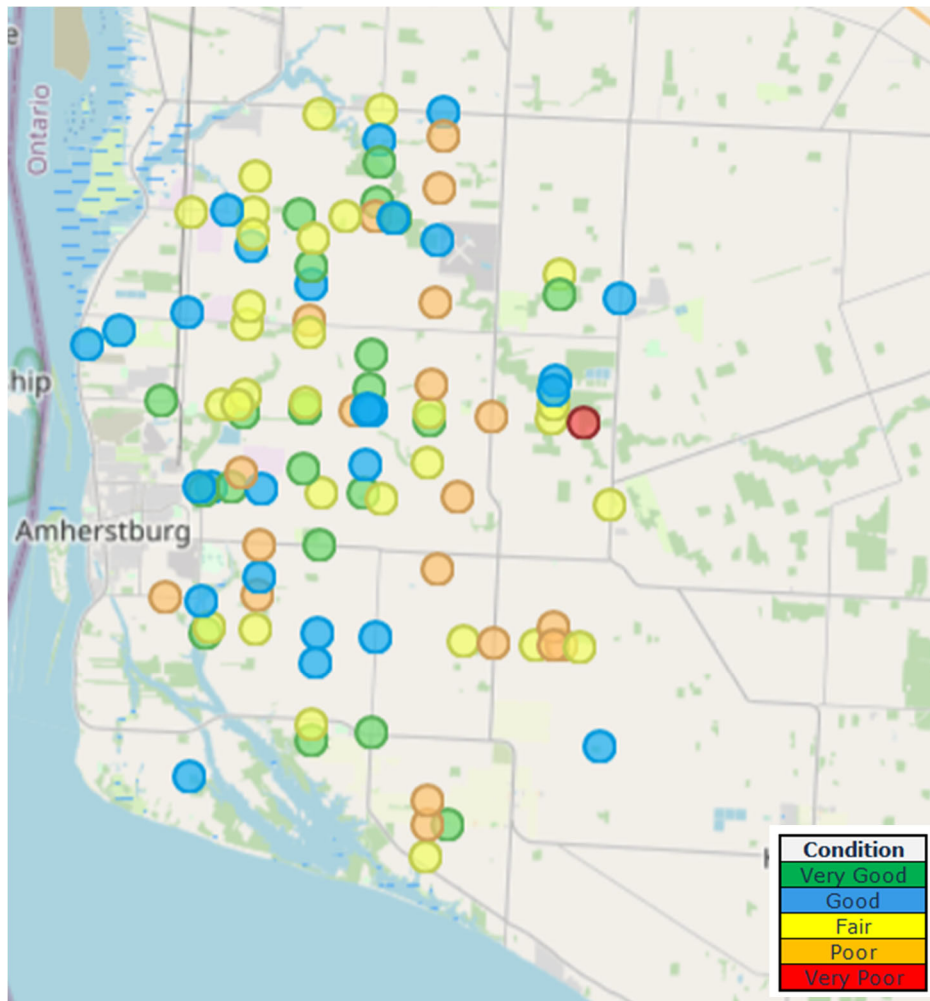
Note: Very poor condition bridge has been taken out of service.

Images of Bridge in Good Condition

Water Network
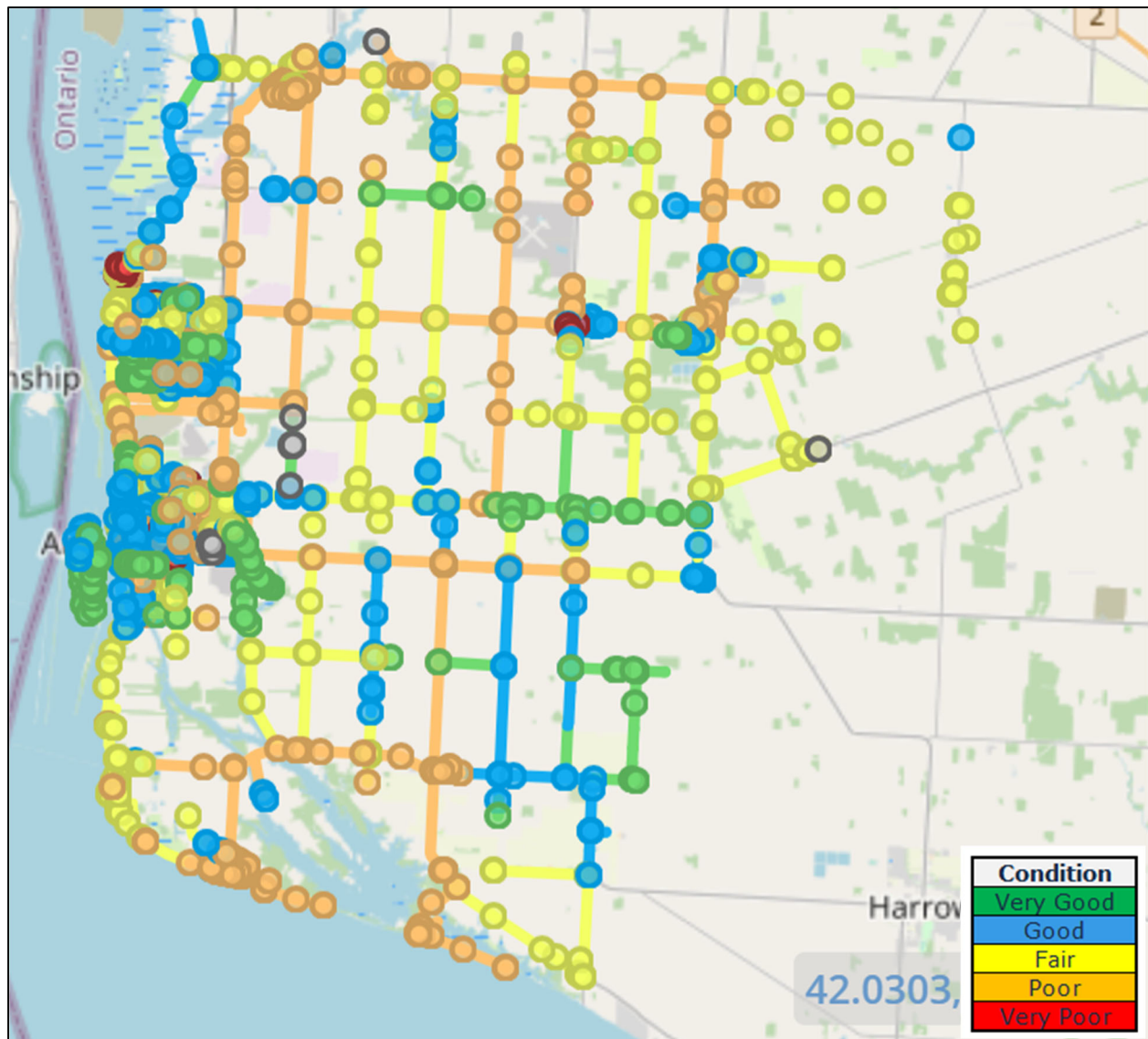
Water Network - Inset
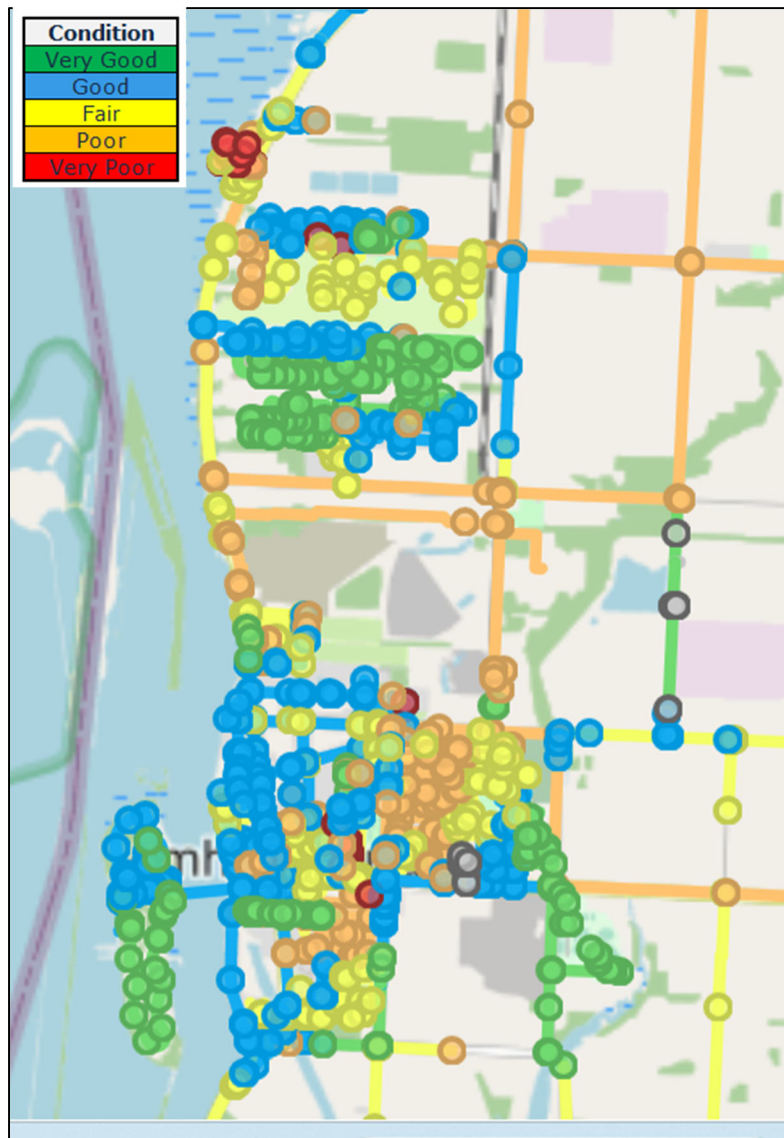
Water Network – Fire Flow

42.1968, -83.3764
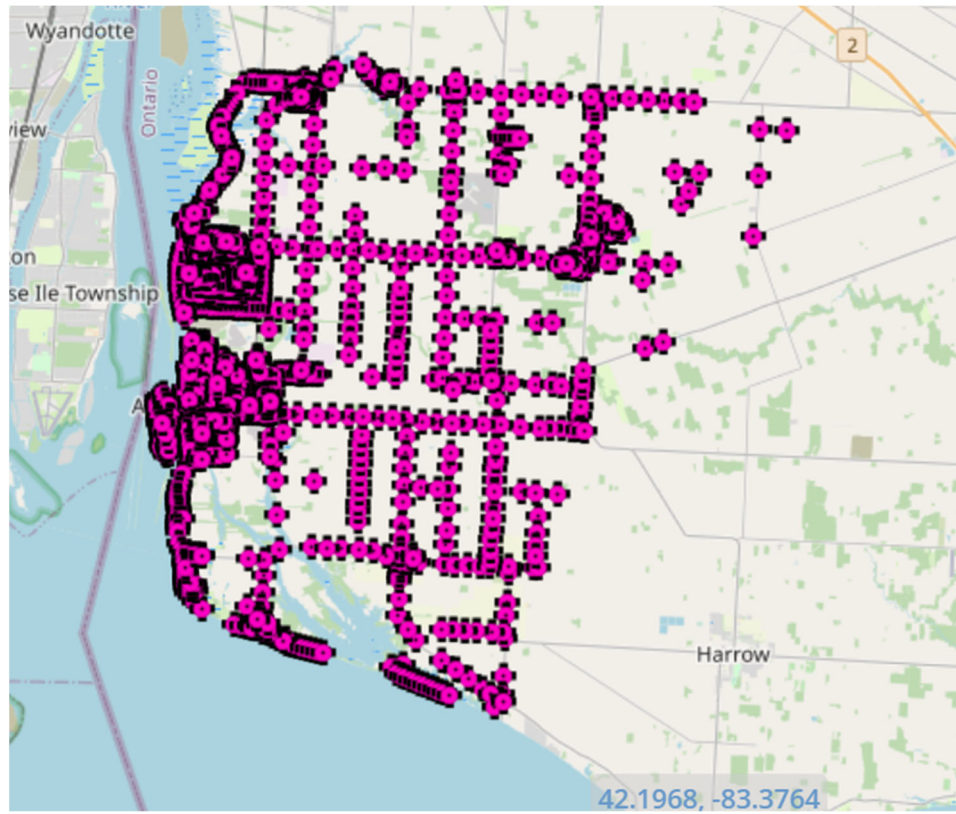
Wastewater Network
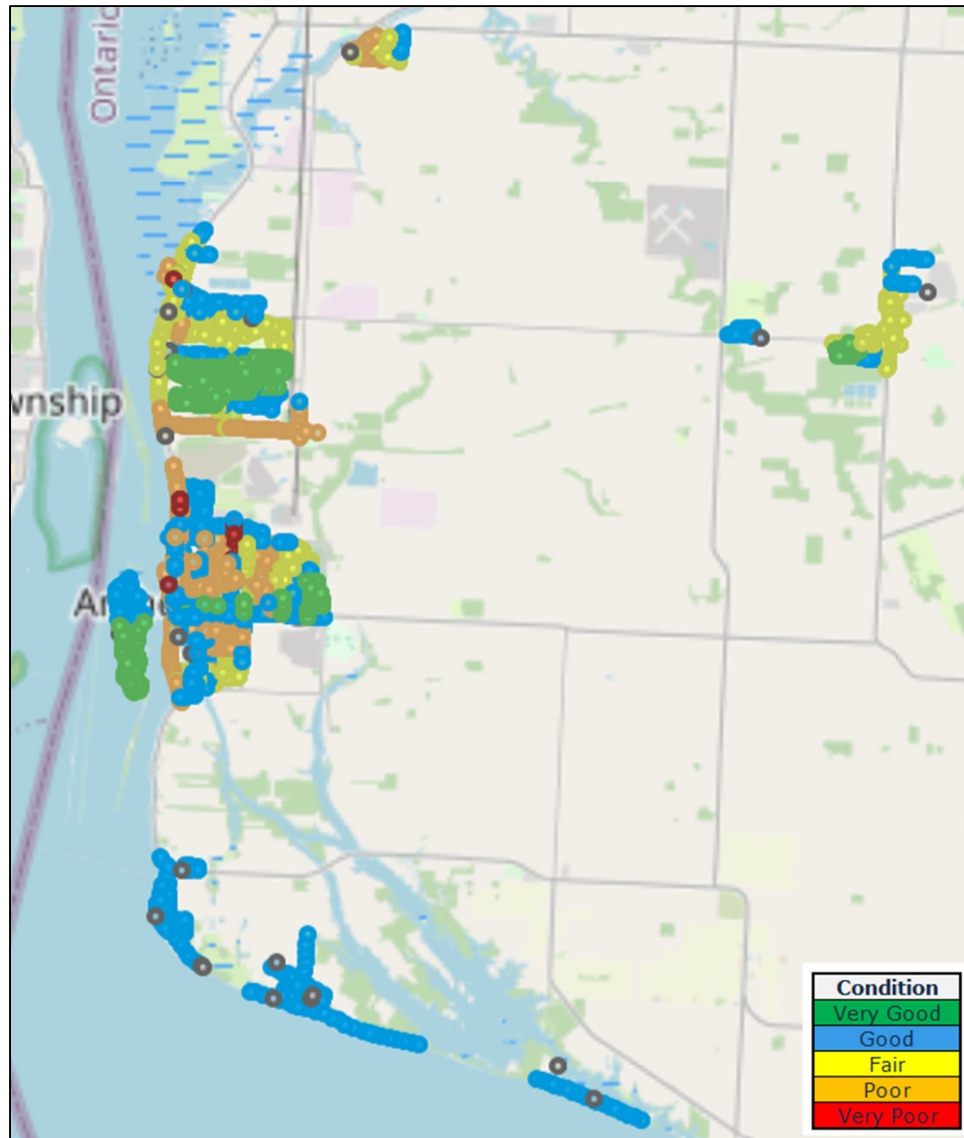
Wastewater Network - Inset
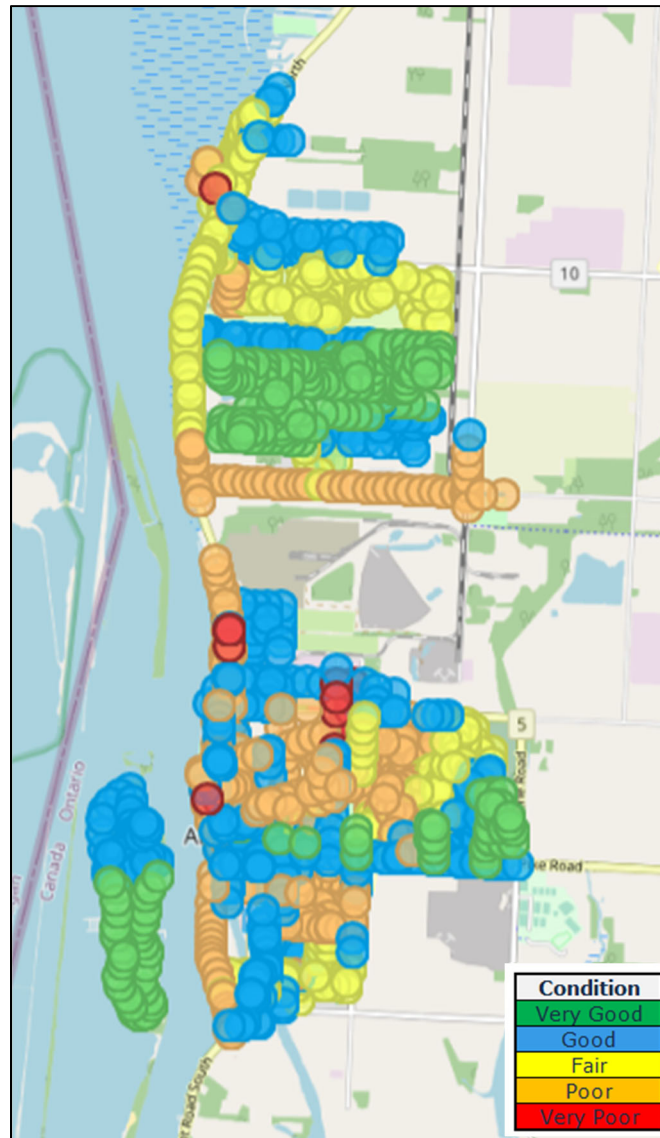
Stormwater Network
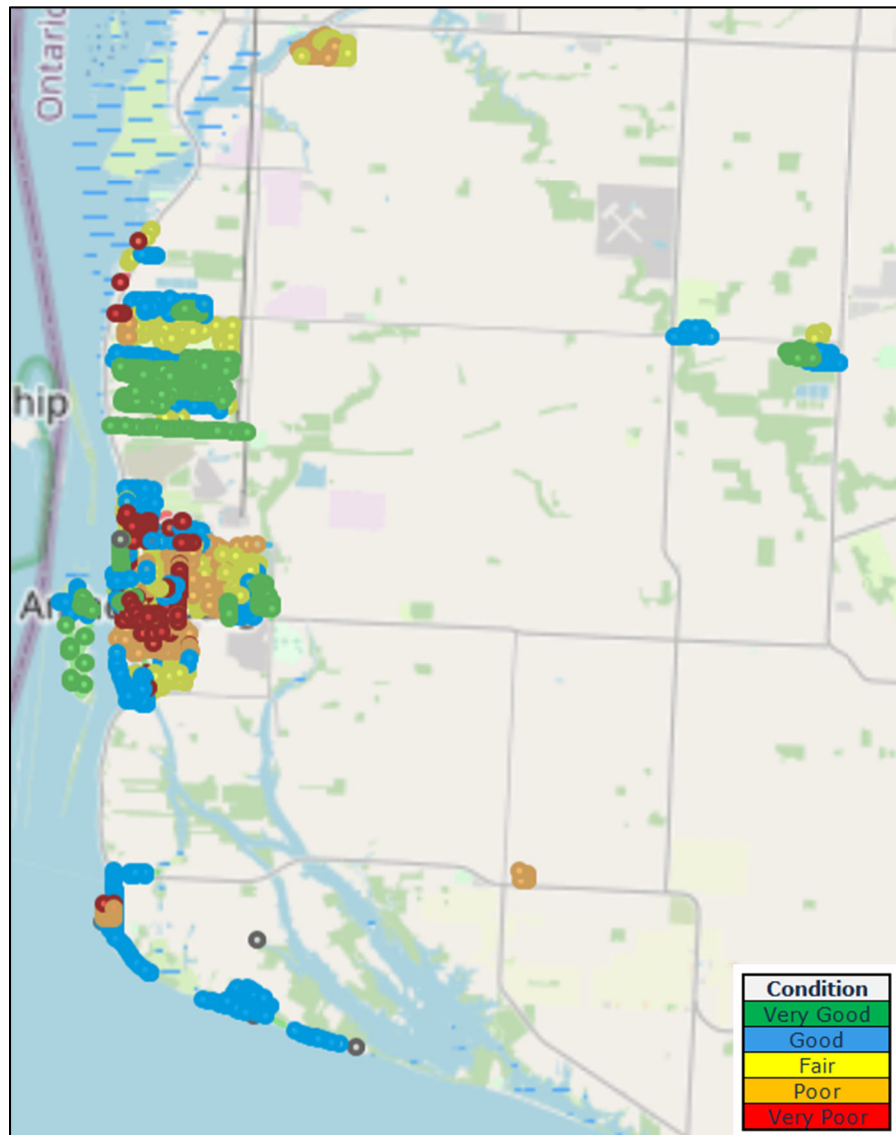
Stormwater – Inset
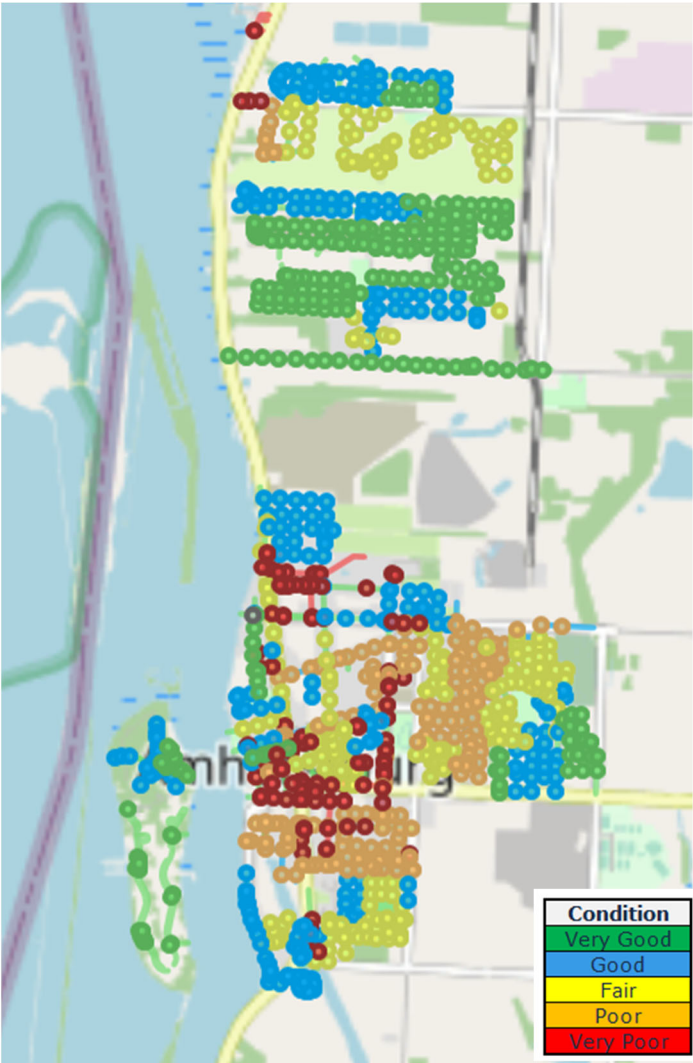
Appendix C: Performance of Asset Categories

The following graphs identify the proposed performance of each asset category for the next 10 years if current capital funding is maintained. The current capital funding level is represented by the annual average of the 5-year capital plan. Note: funding allocation may change year over year based on priorities and needs within asset categories.

Bridges & Culverts

- 10 Year Asset Condition Profile if Maintain Current Funding Level of $962,000

AMP - Bridges & Culverts - Current Funding
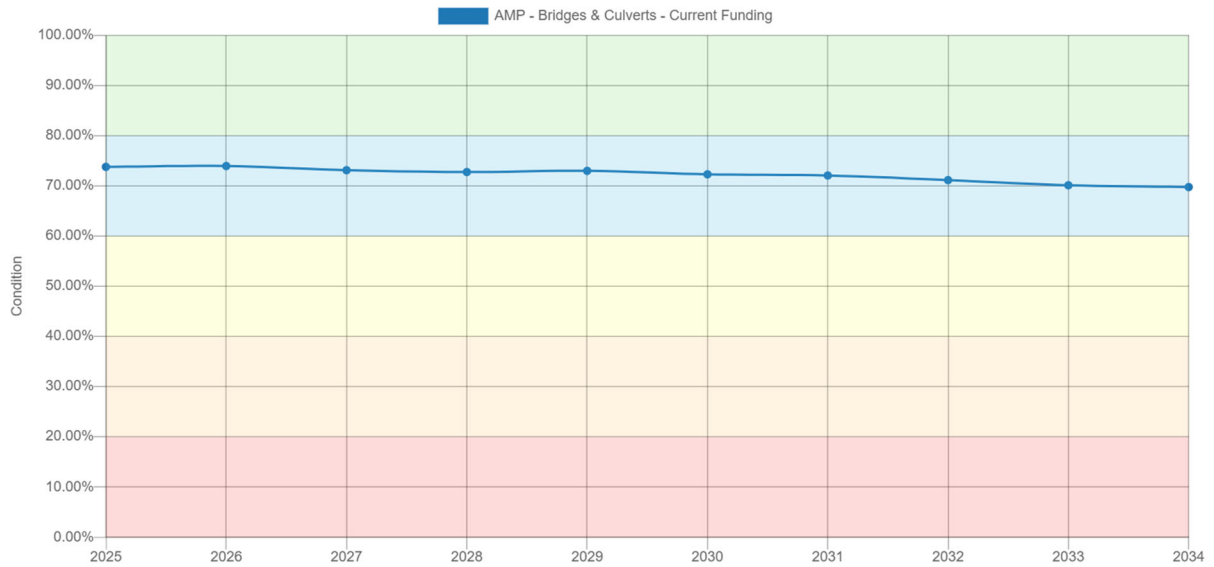
Buildings & Facilities

10 Year Asset Condition Profile if Maintain Current Funding Level of $442,000

AMP - Buildings - Current Funding
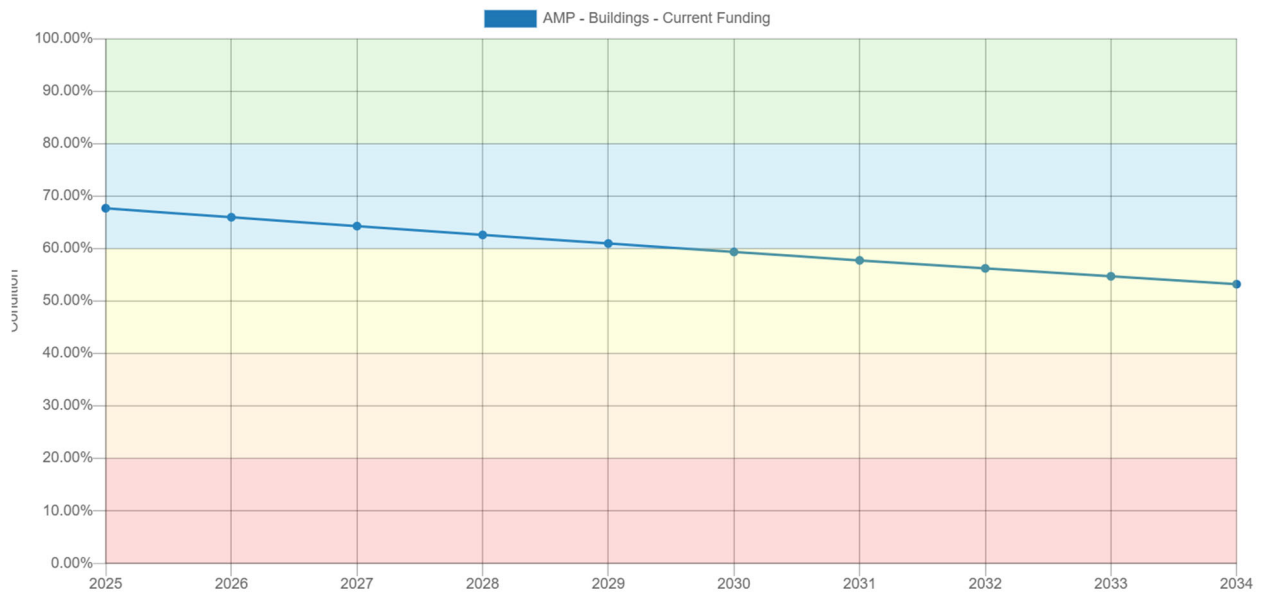
Land Improvements

10 Year Asset Condition Profile if Maintain Current Funding Level of $806,000

AMP - Land Improvements - Current Funding
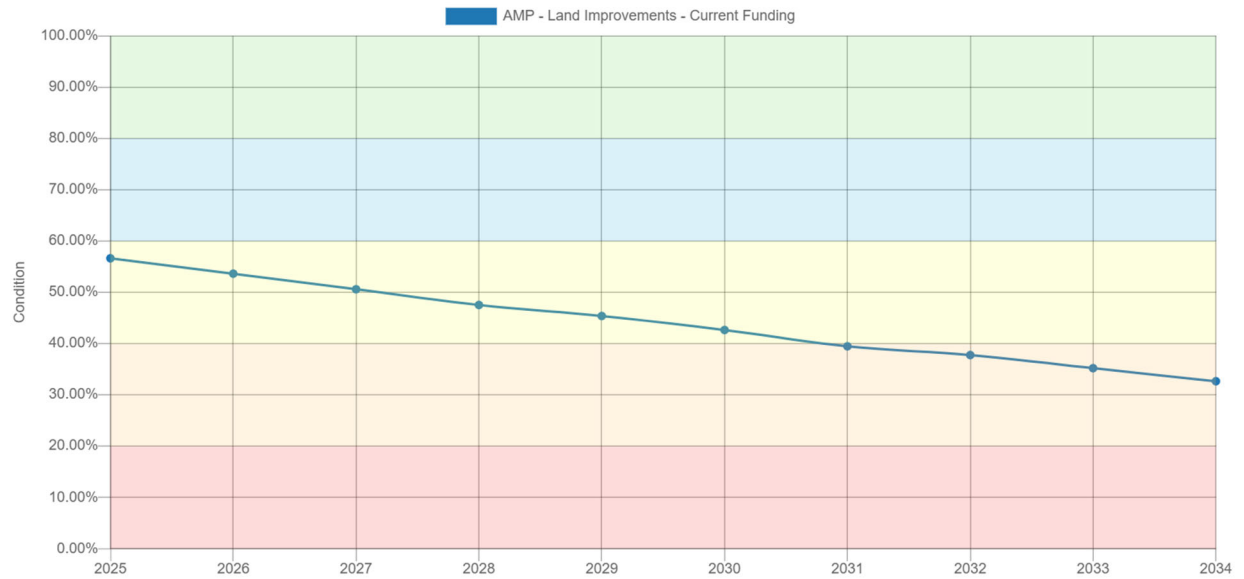
Machinery & Equipment

10 Year Asset Condition Profile if Maintain Current Funding Level of $249,940

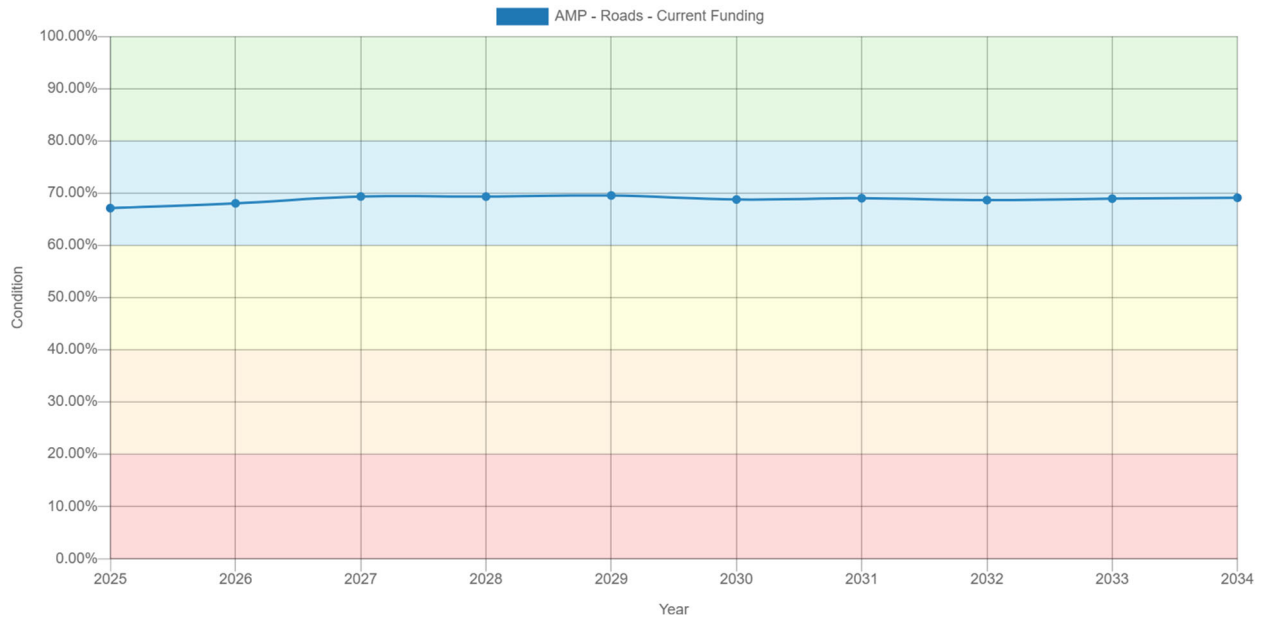
AMP - Machinery & Equipment - Current Funding

190
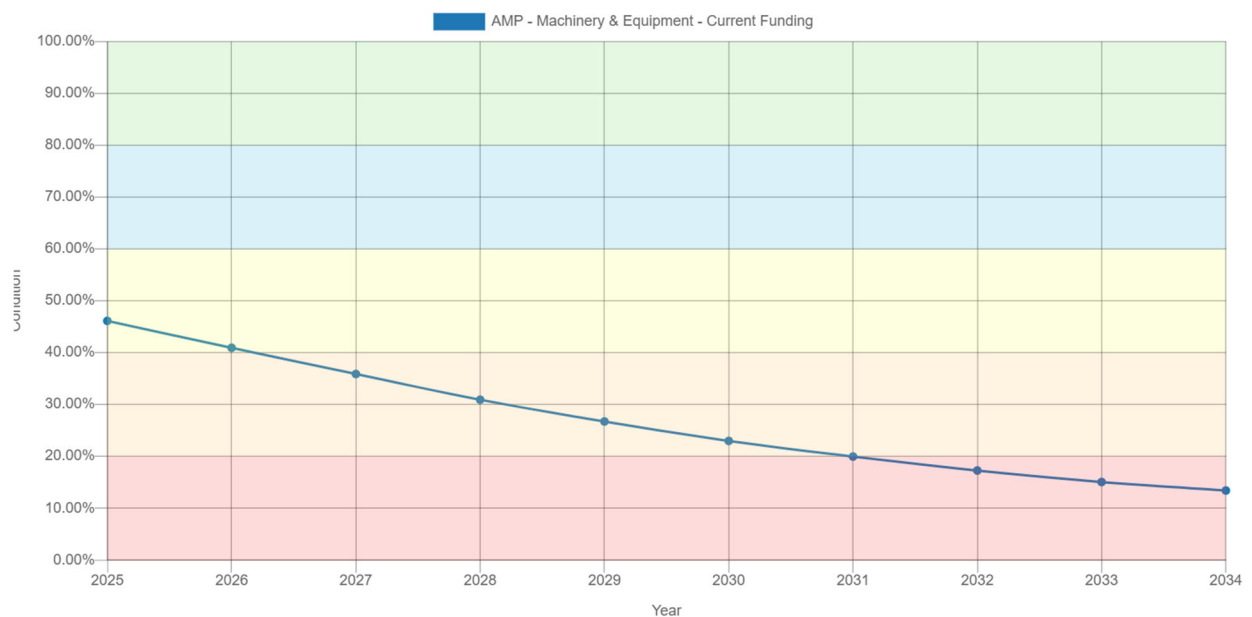
Natural Assets

10 Year Asset Condition Profile if Maintain Current Funding Level of $50,000
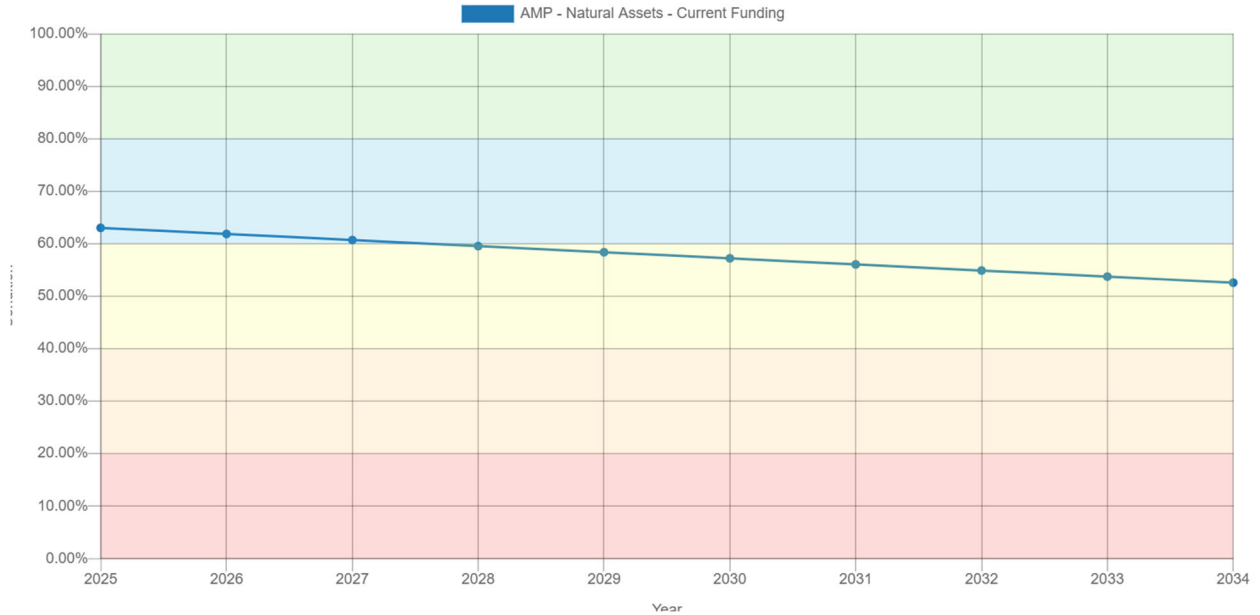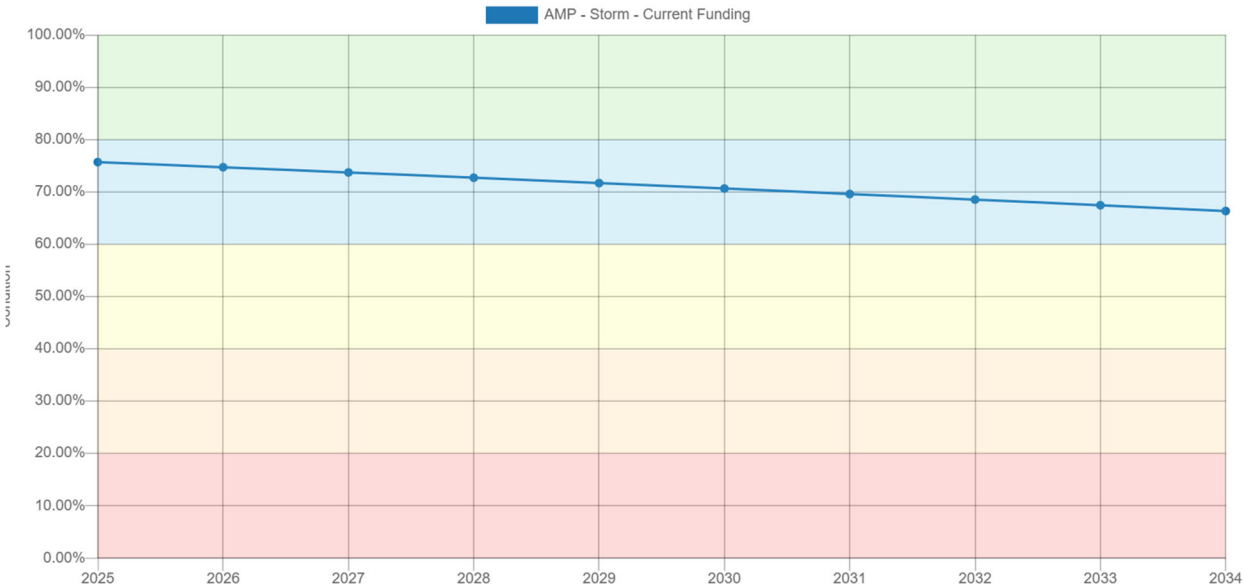

Road Network

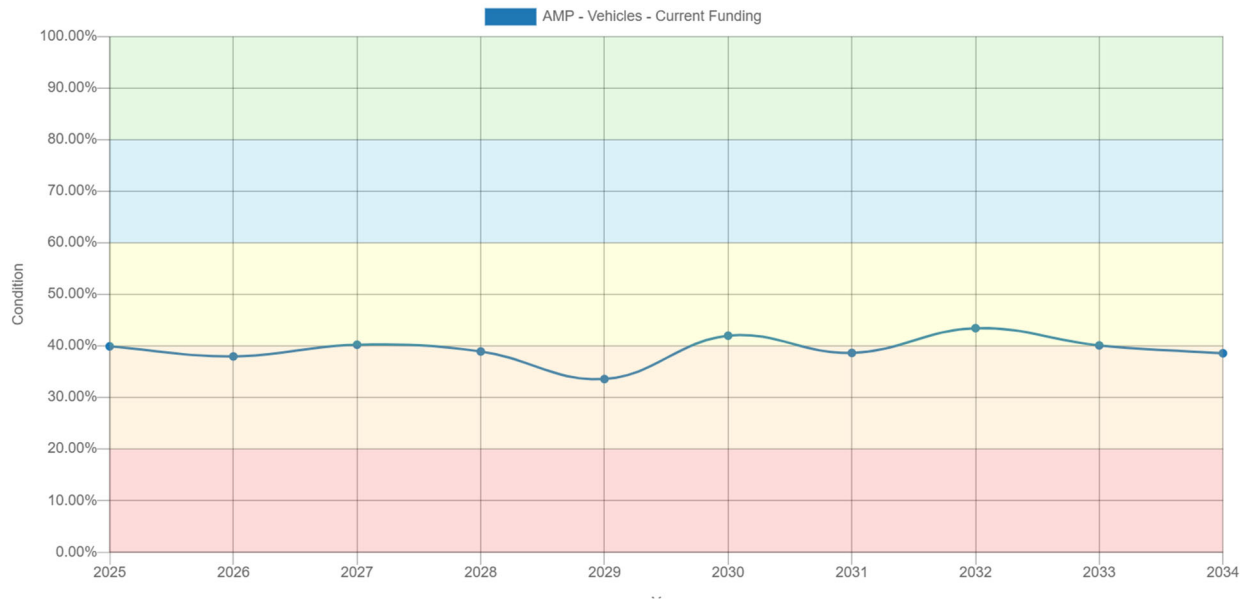10 Year Asset Condition Profile if Maintain Current Funding Level of $5,370,460

Stormwater Network

10 Year Asset Condition Profile if Maintain Current Funding Level of $15,000

Vehicles

10 Year Asset Condition Profile if Maintain Current Funding Level of $1,095,200

Appendix D: Water and Wastewater Rate Study

Appendix E: 2023 OCWA Water and Wastewater Asset Management Plan

Note: Detailed asset inventory has been removed as advised by Ontario Clean Water Association (OCWA)

Appendix F: 2024 Development Charges Study