The Corporation of the Municipality
Staff Report

Wawa 2024 Asset Management Plan

Office of the Treasurer
Manuela Batovanja

Prepared For: Mayor and Council	**Report No.: MB 2024-19**
Agenda Date: September 3, 2024	**File No.: C11**

Report Purpose

To provide Mayor and Council with a summary of the changes to the updated Asset Management Plan as per O.Reg. 588/17 and, following a review period, to obtain Council approval of the Municipality of Wawa 2024 Asset Management Plan.

Background

Asset management is a long-term method allowing municipalities to make the best decisions for their infrastructure, which includes assets, operation, maintenance and renewal, replacement and/or disposal of assets.

Ontario Regulation 588/17 was implemented to help address the issue of failing municipal infrastructure assets. The regulation acts as a guide in the development of municipal asset management plans.

The goal of asset management is to maximize the value of municipal assets, while balancing risk, performance and cost. The plan strives to keep the municipality compliant with the regulation using the best available information to develop a long-term plan for the management of municipal assets. Levels of service are developed to track performance and establish targets for the assets. Wawa's asset management team has met all regulated requirements and has begun planning for the next update.

Review

The Municipality of Wawa 2024 Asset Management Plan was prepared by the Asset Management Team in accordance with the provincial regulation O. Reg 588/17. The regulation establishes the content which must be included in all Asset Management Plans.

Respectfully Prepared and Submitted By:
Manuela Batovanja, Treasurer
Director of Finance

The AMP is divided into several chapters which set out information related to specific sections of the plan.
The introductory chapters include an acknowledgement, which is new in this version, an outline of our asset categories and asset development plan as well as an overview of asset management. Key concepts are reviewed addressing:

- Lifecycle management strategies
- Risk management strategies
- Levels of Service
    - Community and Technical
    - Current and Proposed
- Ontario Regulation 588/17 compliance review

The latter portion of the introductory chapters identify the methodologies applied to the plan and an overview of the portfolio including asset condition, remaining life and future requirements.

The body of the plan summarizes asset information for all asset categories, core and non-core included. The updated plan has expanded information including:

- Buildings divided into components for more accurate facility condition ratings, replacement costs and estimated useful life

- Pave roads and sidewalk have been assessed by a third-party including condition ratings/index by section within specific parameters as determined by industry best practice.

- Sidewalks - the detail provided by the third-party road consultant allowed us to segregate the sidewalks which were previously included in the roads financial total

- Unpaved roads – data has been updated to include replacement costs not previously identified in the AMP

- Professional condition assessments for roads, sidewalks and buildings have been included in the AMP data and will help us in securing government funding for grants as our plan is more precisely informed, with data coming from a professional, unbiased third-party.

The updated overall replacement cost for all assets is $226.6 million up from $133.8 million in the previous plan. Although this is not an exhaustive list, some of the factors which have contributed to the increase are:

- Updated building replacement cost estimates as provided through an engineering firm. The previous estimation was the less accurate but available age-based method at that time.

- The inclusion of the replacement cost estimate of unpaved roads
- The affect of the last few years of inflation including the increased building construction index
- More accurate pricing as provided through recent projects such as the school zone and connecting link projects

The new landfill cell is not included in the AMP as it was an uncompleted project on December 31, 2023, which is the date the updated plan is based on. The inclusion of the landfill cell in the 2025 update is projected to increase the replacement cost by approximately $1.8 million.

The next milestone as outlined in the regulation is scheduled for July 1, 2025. The items required to meet this deadline are:

- Include proposed levels of service for all municipal assets
- Identify life cycle activities and costs necessary to provide the proposed level of service relative to available funding.
- Review and revision of the financial strategy.

Conclusion

The Asset Management Team has provided a draft copy of the updated Wawa Asset Management Plan to Mayor and Council for their review. We are requesting that questions or comments be forwarded to either Cindy Godson at cgodson@wawa.cc or myself at mbatovanja@wawa.cc by September 11, 2024. The AMP will be included, for acceptance, on the September 17th Council Agenda.

Attachments

- Wawa 2024 Asset Management Plan

2024

MUNICIPALITY OF WAWA ASSET MANAGEMENT PLAN

Cindy Godson, Asset Management Coordinator Manuela Batovanja, Treasurer

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Acknowledgement

We acknowledge that the Municipality of Wawa is situated in the Robinson-Superior Treaty territory and the land is the traditional territory of the Anishinaabe. Specifically, we acknowledge the neighbouring community of Michipicoten First Nation, for whom we have great respect. This land continues to be home to diverse Indigenous people (First Nations and Metis) whom we recognize as contemporary stewards of the land and vital contributors to society. As representatives of the people of the Municipality of Wawa, we are grateful to have the opportunity to work and live in this territory.

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.

All municipalities in Ontario are required to complete an asset management plan (AMP) in accordance with Ontario Regulation 588/17 (O. Reg. 588/17). This AMP outlines the current state of asset management planning in the Municipality of Wawa. It identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. This updated plan has attained compliance with O. Reg. 588/17 to the level of the requirements outlined for completion by July 1, 2024. Additional requirements regarding proposed levels of service and growth must be met by July 1, 2025. Through the implementation of sound asset management strategies, the Municipality can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

This AMP includes the following asset categories:

<table>
<tr><th>Asset Category</th><th colspan="2">Source of Funding</th></tr>
<tr><td>Bridges & Culverts</td><td rowspan="7">Tax Levy</td><td rowspan="9">Reserves
Grants
Donations
Debt</td></tr>
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<tr><td>Sanitary Sewer Network</td></tr>
</table>

The overall replacement cost of the asset categories included in this AMP totals $226.6 million. 64% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 35% of assets. For the remaining 65% 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 has used a combination of proactive lifecycle strategies (paved roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Municipality's average annual capital requirement totals $3.9 million. Based on a historical analysis of sustainable capital funding sources, the Municipality is committing approximately $1.1 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $2.8 million.

A financial strategy was developed to address the annual capital funding gap. The following table compares to total and average annual tax/rate change required to eliminate the Municipality's infrastructure deficit:

Funding Source	Years Until Full Funding	Total Tax/Rate Change	Average Annual Tax/Rate Change
Tax Funded Assets	20 Years	29.6 %	1.5 %
Rate Funded (Water)	20 Years	96.4 %	4.8 %
Rate Funded (Sanitary)	20 Years	62.7 %	3.1 %

This AMP represents a snapshot in time and is based on the best available processes, data, and information at the Municipality. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources. Planning continues for future developments and improvements to the Municipality's asset management program. These include:

a) regular and ongoing asset inventory data review to ensure that asset management planning and long-term projections are based on completed and accurate data
b) the continuous review, development and implementation of optimal lifecycle management strategies
c) the development of short- and long-term capital plans for each asset category to ensure adequate revenue is available to meet capital requirements
d) the continuing measurement of current levels of service across all asset categories and the identification of proposed levels of service that are realistic and sustainable

The evaluation of the above items and further development of a data-driven, best-practice approach to asset management is recommended to ensure the Municipality is providing optimal value through its management of infrastructure and delivery of services.

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

AM Program Development Plan

Asset management is an ongoing practice that requires dedicated time and resources across all departments. The above improvements include many key activities designed to enhance the accuracy and reliability of asset management planning.

However, it is far from a comprehensive list of all activities required to manage a municipal asset management program. Timelines, resources and effort for the above improvements and all regular asset management activities will continue to be reviewed. Roles and responsibilities will be clearly defined and delegated to assigned resources to ensure that the Municipality's asset management program is progressing towards its strategic goals and objectives.

The following table provides a summarized list of plans to further the development of the Municipality's asset management program. A more detailed description of each item identified can be found within the appropriate Asset Category in **Section 4** of the AMP.

AMP Development Plan Category	Development Plan Details	Applicable Asset Categories
Asset Inventory/Data Refinement	Review Replacement Costs	Buildings Land Improvements Machinery & Equipment Vehicles Road Network Water Network Sanitary Sewer Network Storm Water Network
Condition Assessment Strategies	Review Backlog Assets	All Asset Categories
Lifecycle Management Strategies	Develop Short-Term Capital Plan	All assets through budget process
	Update Long-Term Capital Plan	Road Networks Storm Water Network Buildings Water Network Sanitary Sewer Network
	Review Lifecycle Management Strategy	All Categories
Levels of Service	Measure Current Levels of Service Identify Additional LOS Metrics Identify Proposed Levels of Service	Road Networks Bridges & Culverts Storm Water Network Water Network Sanitary Sewer Network
	Identify Current LOS Metrics for new assets	Buildings Machinery & Equipment Vehicles Land Improvements

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 Municipality's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management

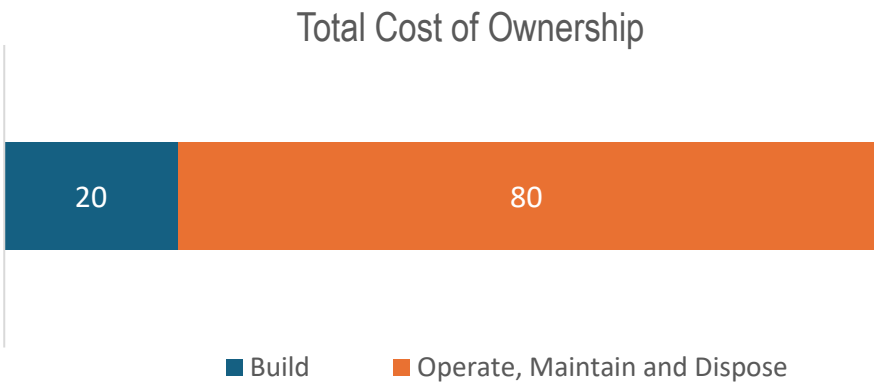
An asset management plan is a living document that should be updated regularly to inform long-term planning

Ontario Regulation 588/17 outlines several key milestones and requirements for asset management plans in Ontario between July 1, 2021 and 2025

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% comes from operations and maintenance. This AMP focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.



These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of a broader asset management program. The diagram below depicts an industry standard approach and sequence to developing a practical asset management program.

The diagram, adopted from the Institute of Asset Management (IAM), illustrates the concept of 'line of sight', or 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 municipality'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 Municipality's Asset Management Policy was developed in 2019 (By-law No. 3204-19) and was reviewed and approved again in 2024 in satisfaction of the requirements outlined in O. Reg. 588/17.

This Asset Management Plan satisfies the policy statement outlined in Section 4.3:

> "*The Municipality will develop an asset management plan that incorporates all infrastructure categories and assets that meet the capitalization thresholds outlined in the organization's Tangible Capital Asset Policy, and it will be updated at least every five years to promote, document and communicate continuous improvement*"

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 municipality plans to achieve asset management objectives through planned activities and decision-making criteria.

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

1.1.3 Asset Management Plan

The asset management plan (AMP) provides a snapshot in time of the current state of municipal infrastructure assets as well as the current strategies in place to assist with planning and decision-making.

The focus of the AMP is not simply about identifying the money or resources that are required to meet lifecycle needs of infrastructure and maintain an adequate level of service. It should also identify the processes and strategies that are and can be implemented to improve decision-making outcomes.

The AMP is a living document that should be updated regularly as asset and financial data becomes available. This will allow the municipality to re-evaluate the state of the infrastructure and identify how the asset management plan 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	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 affect these activities will have on the lifecycle of an asset, and their cost, will enable staff to make better recommendations.

The Municipality'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

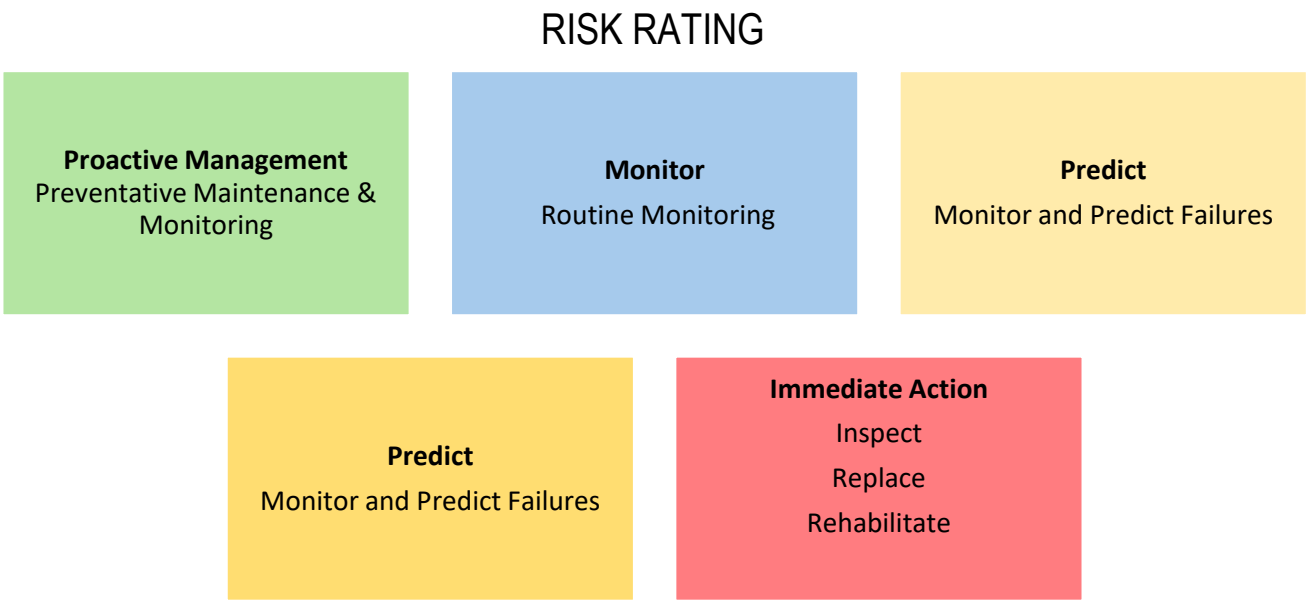
Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal, and some assets pose a greater risk to service delivery if they were to fail.

For example, a road with a high volume of traffic that provides access to critical services poses a higher risk than a low volume rural road servicing a handful of properties. Asset risk and criticality is a key component of both short- and long-term planning.

Risk Rating = Probability of Failure x Consequence of Failure

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

Risk matrices are a useful tool used to visualize risk across a group of assets. The following image provides an example of the actions or strategies that may be considered depending on an asset's risk rating.



1.2.3 Levels of Service

A level of service (LOS) is a measure of what the Municipality 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 Municipality as worth measuring and evaluating. The Municipality measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

Community Levels of Service

A simple, plain language description or measure of the service that the community receives, i.e. an expectation.

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 municipality's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide, i.e. a measurement.

Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community. In the next iteration of the AMP in 2025, the Municipality will include proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

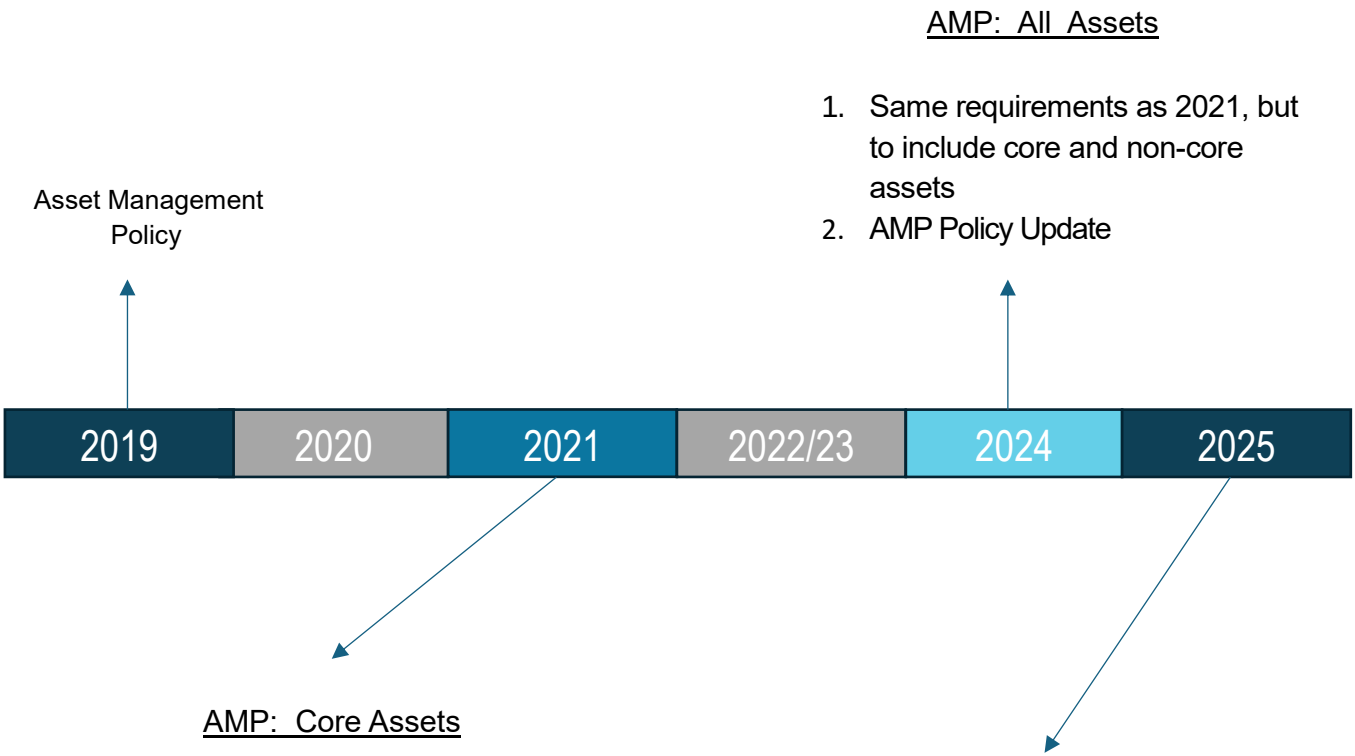
Proposed levels of service should be realistic and achievable within the timeframe outlined by the Municipality. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals and long-term sustainability.

Once proposed levels of service have been established, the Municipality will identify a lifecycle management and financial strategy which allows these targets 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.



AMP: All Assets

1. Same requirements as 2021, but to include core and non-core assets
2. AMP Policy Update

AMP: Core Assets

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

AMP: All Assets

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 strategy

1.3.1 O.Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2025. Next to each requirement a page or section reference is included in addition to the status at July 1, 2024.

Requirement	O. Reg Section	AMP Section Reference	Status
Summary of assets in each category	S.5 (2), 3 (i)	4.1.1 – 5.2.1	Complete
Replacement cost of assets in each category	S.5 (2), 3 (ii)	4.1.1 – 5.2.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.1.3 - 5.2.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.1.2 – 5.2.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.1.2 – 5.2.2	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.1.6 - 5.2.6	Complete
Current performance measures in each category	S.5(2), 2	4.1.6 - 5.2.6	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.1.4 - 5.2.4	Complete
Cost of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete
Growth Assumptions	S.5(2), 5(i-ii)	6.1 - 6.2	Complete
	S.5(2), 6(i-vi)		Not Applicable
Proposed Levels of Service	S.6(1), 1-5		In Progress 2025
	S.6(1), 6		Not Applicable
	S.6(1), 7		In Progress 2025

2 Scope & Methodology

Key Insights

This asset management plan includes 9 asset categories and is divided between tax-funded and rate-funded categories.

The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation.

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

2.1 Asset Data Hierarchy

This asset management plan uses a two-tier asset hierarchy to sort assets into both a primary functional category (e.g. Road Network) and a secondary departmental or characteristic-based segment (e.g. Paved Roads or Sidewalks).

2.1.1 Asset Categories

This asset management plan for the Municipality of Wawa is produced in compliance with Ontario Regulation 588/17. The July 2024 deadline under the regulation—the second of three AMP updates— requires analysis of both core assets (roads, bridges & culverts, water, wastewater, and stormwater) and non-core asset categories (buildings, machinery & equipment, vehicles, land improvements).

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

<table>
<tr><th>Asset Category</th><th colspan="2">Sources of Funding</th></tr>
<tr><td>Bridges & Culverts</td><td rowspan="8">Tax Levy</td><td rowspan="10">Reserves
Grants
Debt
Donations</td></tr>
<tr><td>Buildings</td></tr>
<tr><td>Land Improvements</td></tr>
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</table>

2.1.2 Asset Segments

Within each asset category, a series of segments have been developed to allow for a more granular level of analysis. This secondary level of the asset data hierarchy aims to group assets together based on either departmental ownership or assets with similar characteristics. Examples of both approaches are found in the tables below

Asset Category	Asset Segment (Departmental)
Machinery & Equipment	Environmental Services
	General Government
	Protective Services

Asset Category	Asset Segment (Characteristics)
Water Network	Hydrants
	Pumping Stations
	Watermains

2.2 Deriving Replacement Costs

Replacement costs should reflect the total costs associated with the full replacement or reconstruction of an asset. They should include the combined cost of materials, plant, labour, engineering and administrative costs.

This AMP relies on two methods to determine asset replacement costs:

- **Unit Cost**: A unit-based cost (e.g. per metre) determined through a review of recent contracts, reports and/or staff estimates
- **Unit Cost Inflated:** A unit-based cost (e.g. per asset) determined through recent purchases, engineering reports and/or staff estimates, and which may include inflation of the replacement cost to today's value using an index (e.g. CPI or NRBCPI)
- **Historical Cost Inflation:** Inflation of the asset cost recorded at the time it was initially acquired to today's value using an index (e.g. CPI or NRBCPI)

Unit cost inflation is used for assets such as bridges and buildings, when the engineering estimate of replacement cost is provided on a periodic basis during the (most recent) scheduled assessment, and then inflated to today's value for this AMP.

Historical cost inflation is typically used in the absence of reliable unit cost data. It is a fairly reliable method for recently purchased and/or constructed assets where the cost is reflective of the total capital costs that the Municipality incurred. As assets age, and new products and technologies impact procurement costs and construction methods, cost inflation becomes a less reliable technique to determine replacement cost.

2.3 Estimated Useful Life and Service Life Remaining

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

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

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

2.4 Reinvestment Rate

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

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

Target Reinvestment Rate = *Annual Capital Requirement* / *Total Replacement Cost*

Actual Reinvestment Rate = *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 Municipality'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 conditions.

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

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

3 Portfolio Overview

Key Insights

The total replacement cost of the Municipality's asset portfolio is $226.6 million

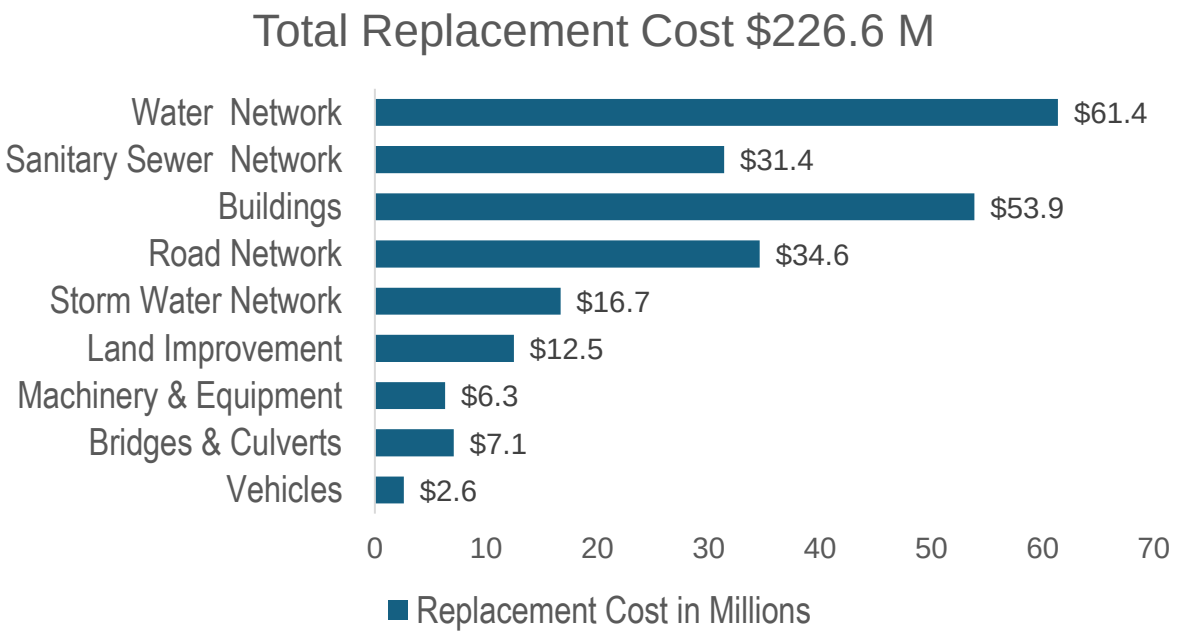
64% of all assets are in fair or better condition

21% of assets are projected to require replacement in the next 10 years

Average annual capital requirements total $6.4 million per year across all assets

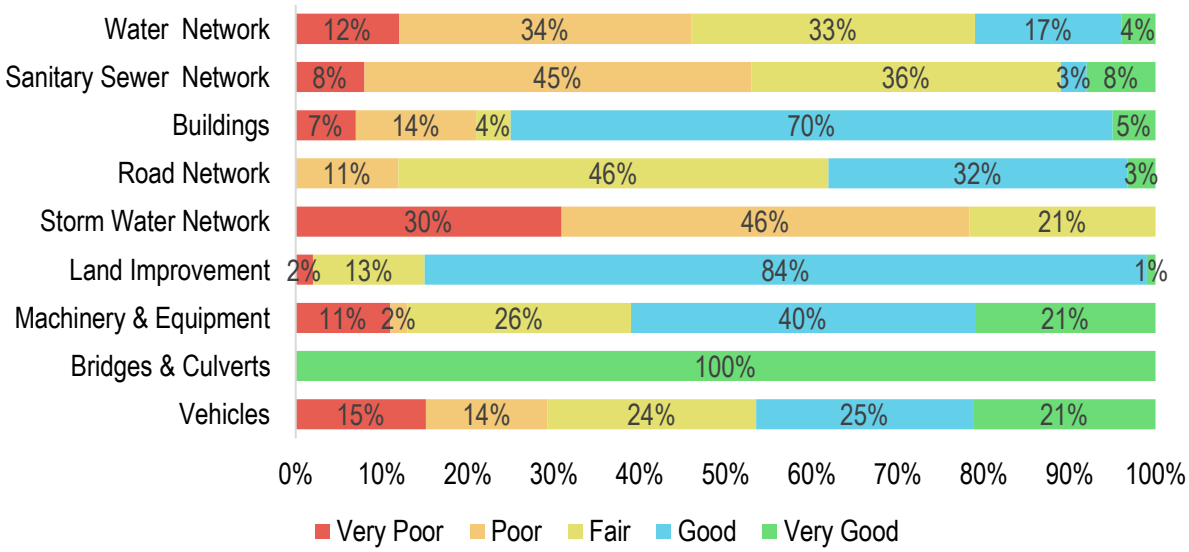
3.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of $133.8 million. This total was determined based on a combination of unit costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.



3.2 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 64**%** of assets in Wawa are in fair or better condition. This estimate relies on both age-based and assessed condition data.

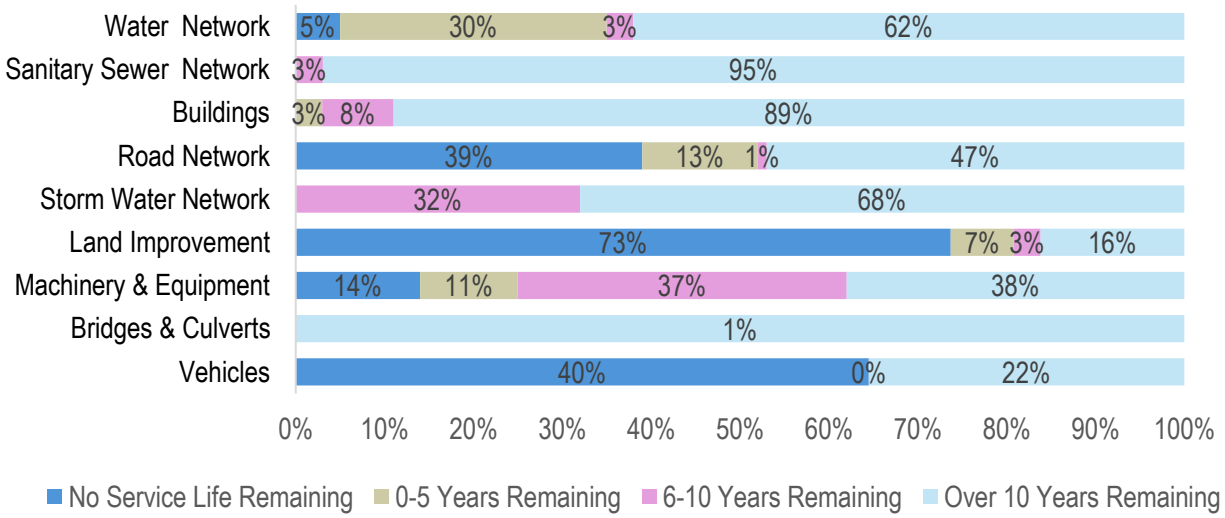


This AMP relies on assessed condition data for **35%** of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions.

Asset Category	% of Assets with Assessed Condition	Source of Condition Data
Bridges & Culverts	97%	2022 OSIM Inspections
Buildings	100%	2023 Building Condition Assessments
Land Improvements	90%	Staff Assessments
Machinery & Equipment	39%	Staff & Engineering Assessments
Road Network	95%	Staff & Engineering Assessments
Vehicles	50%	Staff Assessments
Storm Water Network	0%	Age-based estimates
Water Network	19%	Staff Assessments
Sanitary Sewer Network	0%	Age-based estimates
Overall:		

3.3 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, **21%** of the Municipality's assets have less than 10 years of service life remaining. Capital requirements over the next 10 years are identified in Appendix A.



Category	Estimated Useful Life Range (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Water Network	10 – 75 Years	43.2	15.5
Sanitary Sewer Network	20 – 75 Years	44.8	22.9
Buildings	9 – 40 Years	22.3	10.8
Road Network	20 – 40 Years	31.3	15.9
Storm Water Network	50 – 75 Years	47.9	15.3
Land Improvements	10 – 30 Years	13.3	5.3
Machinery & Equipment	3 – 20 Years	6.6	5.7
Bridges & Culverts	50 Years	8.4	41.6
Vehicles	5 – 15 Years	9.8	1.3
Total:		**42.8**	**15.9**

While capital planning horizons tend to be short (<10 Years), a sustainable lifecycle and financial strategy should consider the full lifecycle of all assets.

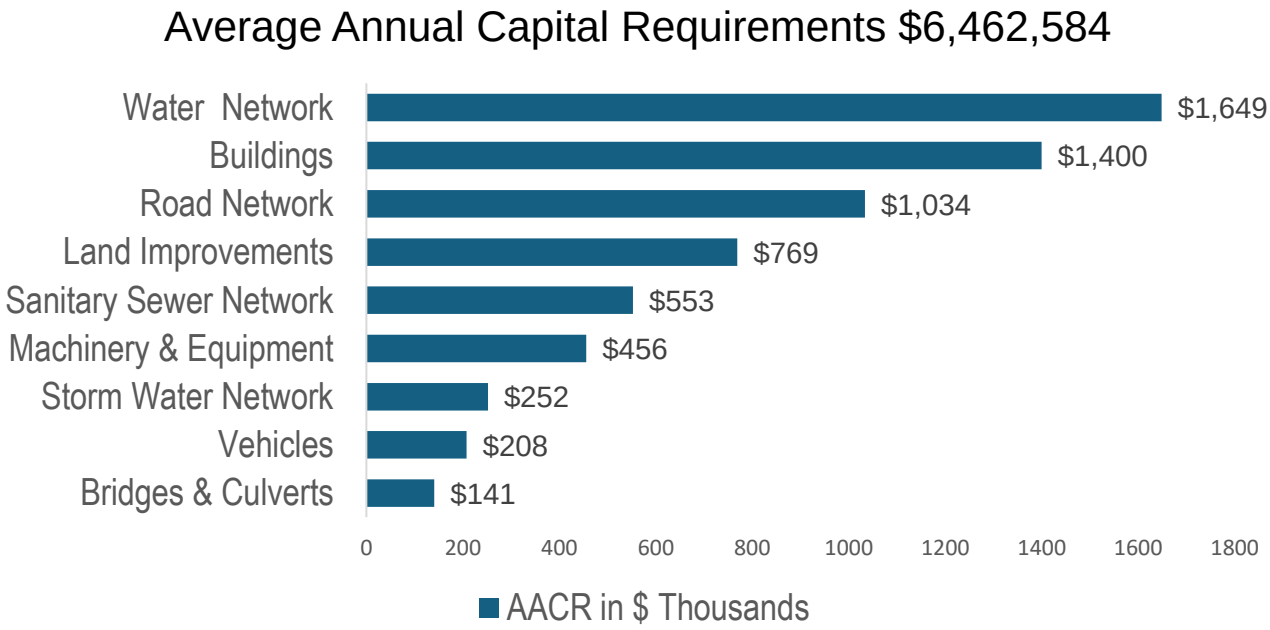
Short-term capital costs may be low for asset categories with long useful lives where infrastructure is relatively new. However, planning and saving for long-term capital costs is a key component of asset management planning.

The calculation of an average annual capital requirement considers the estimated useful life and cost of infrastructure to identify the amount that the Municipality should be allocating to meet capital needs regardless of whether the project costs will be incurred in the short or long-term.

3.4 Forecasted Capital Requirements

3.4.1 Average Annual Capital Requirements

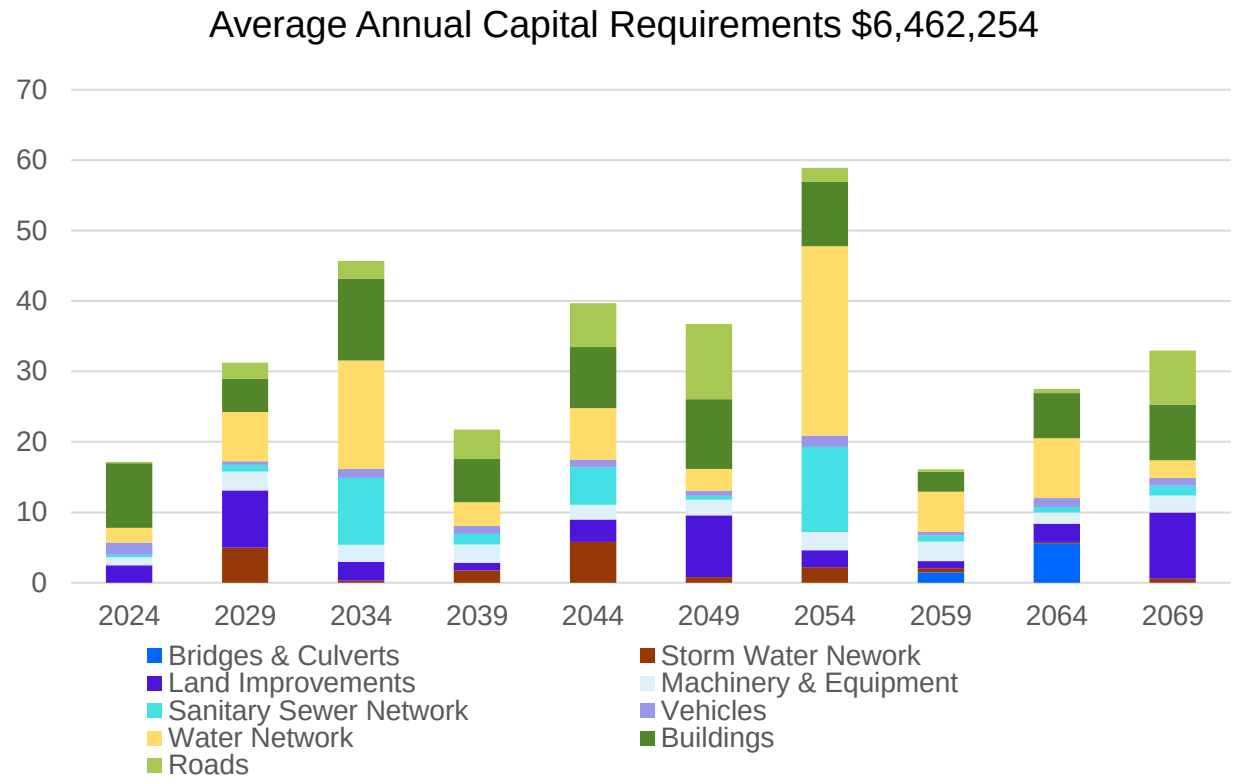
Annual capital requirements represent the amount the Municipality should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability.



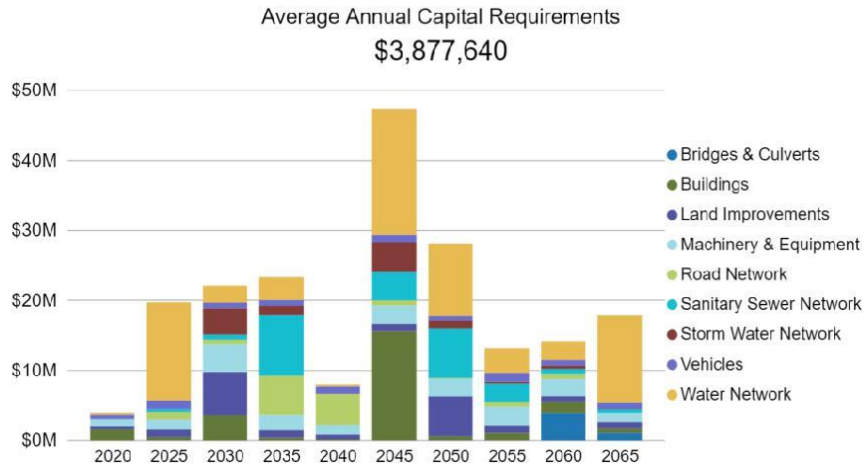
In total, the Municipality should allocate approximately $6.4 million annually to address capital requirements for the assets included in this AMP.

3.4.2 Projected Capital Requirements (50 Years)

The following graph identifies projected capital requirements over the next 50 years.



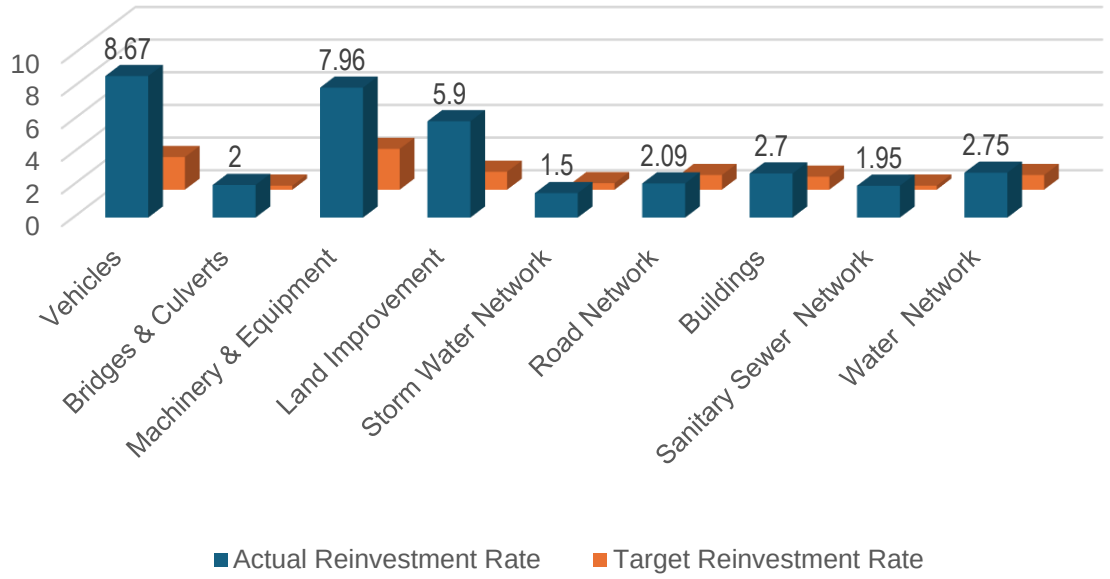
The graph below shows the same information as of August 2020



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

3.5 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Municipality should be allocating approximately $3.9 million annually, for a target reinvestment rate of 2.90%. Actual annual spending from sustainable revenue sources totals approximately $1.1 million, for an actual reinvestment rate of 0.81%.



Actual reinvestment rate was calculated using the 2023 Financial Information Return Capital Additions Schedule.

4 Analysis of Tax-funded Assets

Key Insights

Tax-funded assets are valued at $133.8 million

The average annual capital requirement to sustain the current level of service for tax-funded assets is approximately $4.2 million

4.1 Road Network

The Road Network is a critical component of the provision of safe and efficient transportation services. It includes all municipally owned and maintained roadways and sidewalks in addition to supporting roadside infrastructure streetlights.

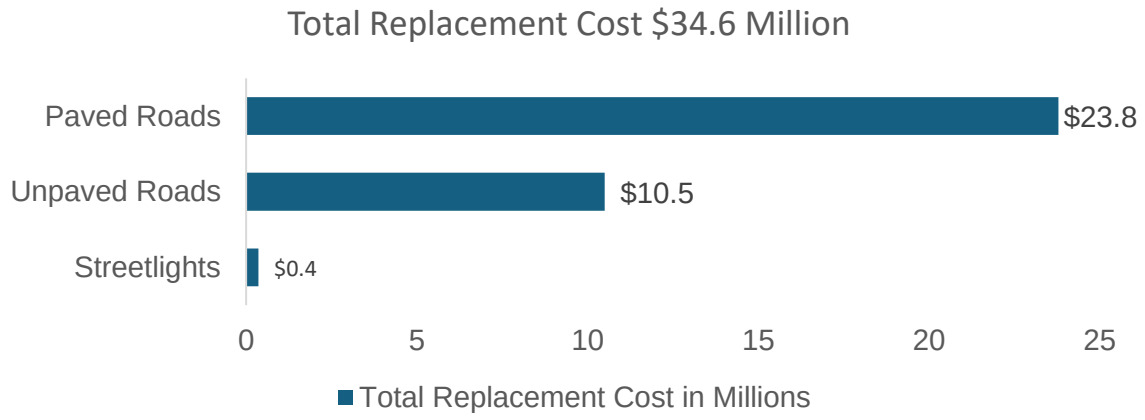
The Municipality's Road Network is maintained by the Infrastructure Services Department.

4.1.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Road Network inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Paved Roads	30,102 metres	Cost/Unit	$23,784,850
Unpaved Roads	50,959 metres	Cost/Unit	$10,478,772
Sidewalks	19,960 metres	Cost/Unit	*Note (*)*
Streetlights	444	CPI Tables	$364,305
Total			**$34,627,927**

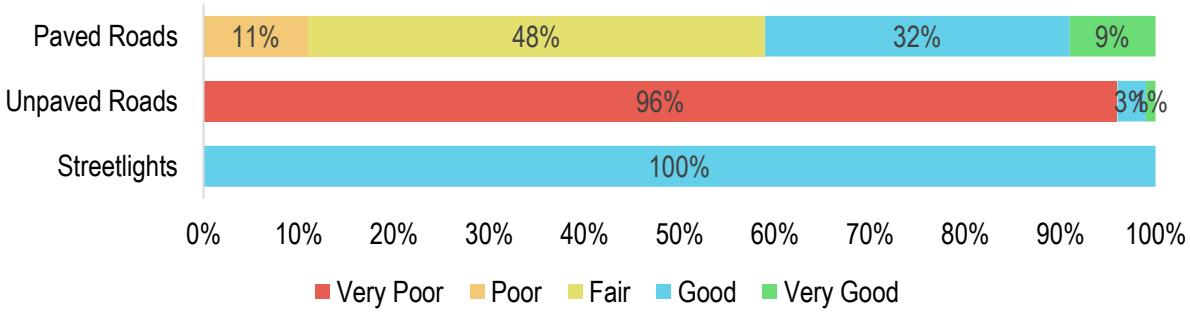
Note (*): Sidewalk assets have been added to the asset inventory database in sections and identified by street and/or location, with area (sq.m.) and condition assessment included.
Replacement costs for sidewalk sections are currently included in the paved roads and will be allocated to sidewalk sections in the next iteration of the AMP.



4.1.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Paved Roads	64%	Good	100% Assessed
Unpaved Roads	52%	Fair	14% Assessed
Streetlights	67%	Good	Age-based
Total	**60%**	**Good**	**73% Assessed**



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 municipality's current approach:

- A formal condition assessment was completed by StreetScan Inc. in October, 2021 on all paved roads and sidewalks. Each paved road section received a PCI (Pavement Condition Index) rating and each sidewalk section received an SCI (Sidewalk Condition Index) rating. Distress maps were also provided which showed the different types and severity of distresses (e.g. severe potholes, moderate longitudinal cracks, minor alligator cracks, etcetera) present in each road and sidewalk section at that time.

- Informal assessments by staff include daily winter road patrols and monthly summer road patrols, which enable staff to identify distresses and deficiencies, and required intervention activities are addressed.

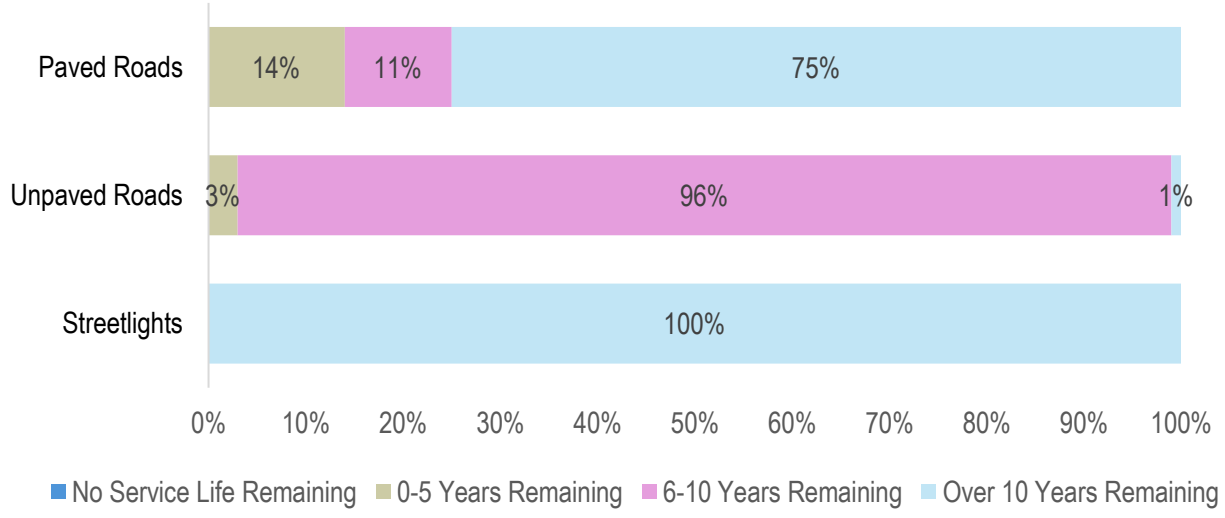
- Staff would like to complete network-wide assessments on a more regular schedule (3-5 years) to inform lifecycle planning but are limited by current resources and the availability of funding.

4.1.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Road Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Paved Roads	40 Years	34.2	13.9
Unpaved Roads	40 Years	37.7	8.1
Streetlights	20 Years	6.7	13.3
Total		**34.3**	**13.9**



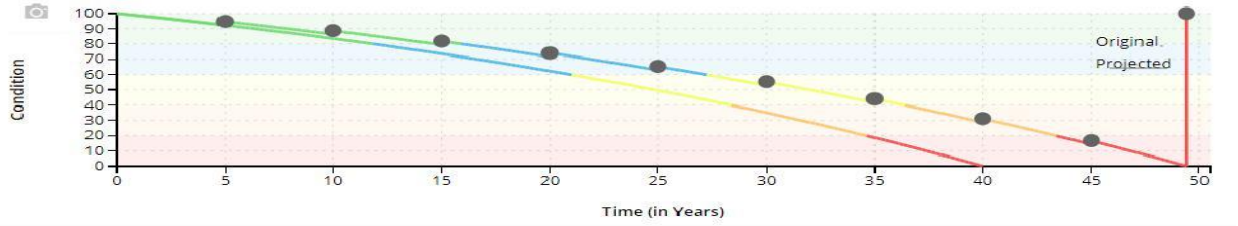
Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.1.4 Lifecycle Management Strategy

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

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

Paved Roads		
Event Name	Event Class	Event Trigger
Asphalt Patching/Crack Sealing	Preventative Maintenance	As-needed



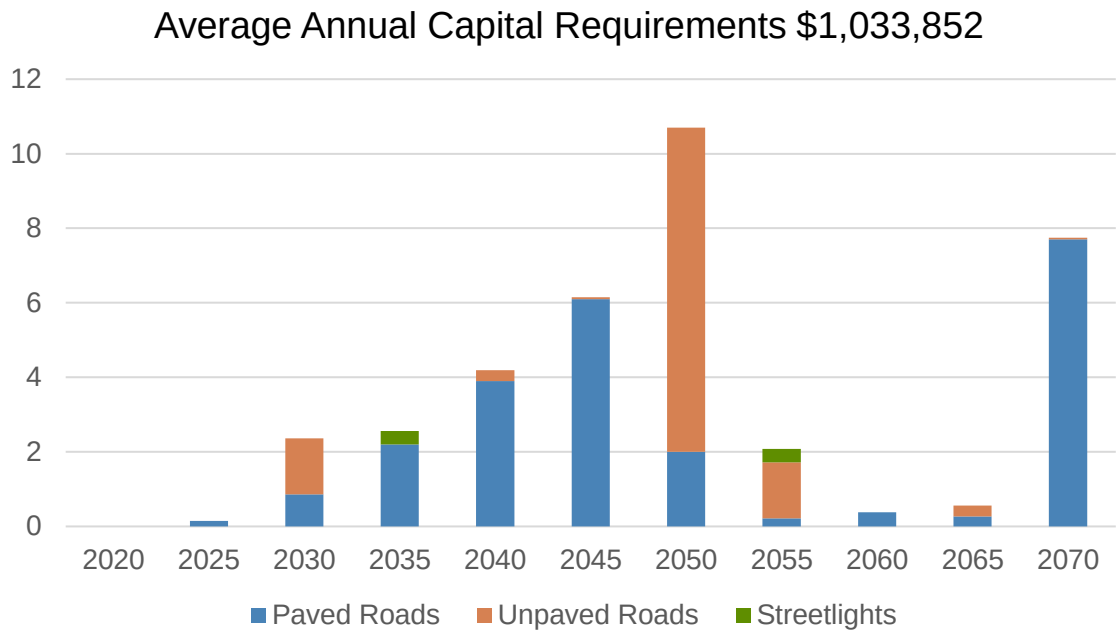
The following table further expands on the Municipality's current approach to lifecycle management:

Activity Type	Description of Current Strategy
Maintenance	**All Roads:** Snowplowing and sanding in winter months **Unpaved Roads:** dust control (calcium chloride) in May/June; magnesium crystal applied later in summer if necessary; grading as required **Paved Roads:** pothole repairs, crack sealing or cut-and-pave techniques; annual sweeping and line painting **Sidewalks:** Snowplowing and sanding in winter months; sidewalk sweeper used annually to remove winter sand
Rehabilitation	**Unpaved Roads:** Recycled asphalt applied to gravel residential streets in Michipicoten River Village **Paved Roads:** Pavement preservation strategy implemented with capital budget investment of $100,000 - $150,000 annually. Areas are prioritized according to need, and/or condition. **Sidewalks:** Sidewalk rehabilitation strategy implemented with multi-year ICIP-funded project, to be continued with capital budget investment of $35,000 annually. Areas are prioritized according to need, and/or condition.
Replacement	**Unpaved Roads:** Full road reconstruction is not anticipated but may be required in some circumstances. **Paved Roads:** Full road reconstruction is completed as needed and coordinated with sub-surface infrastructure (water/sewer) repairs/replacement whenever feasible to maximize cost savings **Sidewalks:** Full sidewalk reconstruction is completed as needed and coordinated with full road reconstruction projects when appropriate

Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for Paved Roads, and assuming the end-of-life replacement of all other assets in this category, the following graph forecasts capital requirements for the Road Network.

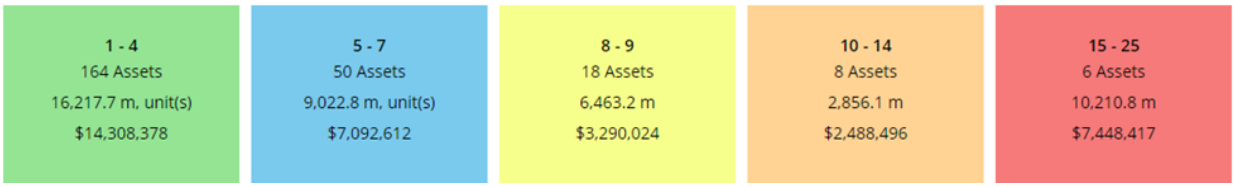
The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs to meet future capital needs.



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

4.1.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Some unpaved roads have not been assessed, and assets with age-based condition ratings are showing in the high-risk (red) section.

4.1.6 Levels of Service

The following tables identify the Municipality'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 Municipality has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix B
Quality	Description or images that illustrate the different levels of road class pavement condition	Assessments completed in October, 2021 included Pavement Condition Index (PCI) ratings for paved roads and Sidewalk Condition Index (SCI) ratings for sidewalks. These assessments were completed by StreetScan Inc. in accordance with generally accepted professional practice The PCI is a 0-100 rating scale that ranges from 0 (Very Poor) to 100 (Very Good). The SCI is a 0-100 rating that ranges from 0 (Very Poor) to 100 (Very Good)

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0.032
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	0.460
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	0.427
	Area (m^2) of sidewalks – concrete and brick	32,994 m^2
Quality	Average pavement condition index (PCI) for paved roads in the municipality	64 – Good
	Average surface condition for unpaved roads in the municipality (e.g. very good, good, fair, poor)	Fair
	Average sidewalk condition index (SCI) for sidewalks in the municipality	66 – Good
Performance	Capital reinvestment rate	

4.1.7 AM Development Plan

Asset Inventory/Data Refinement

- **Sidewalk Inventory** – Sidewalk assets have been added to the Municipality's asset inventory database in sections and identified by street and/or location, with area (m^2) and condition assessment included. Replacement costs for sidewalk sections are currently included with the costs for related Paved Roads sections. These costs will be broken out to facilitate long-term planning and reported separately in the 2025 AMP.

Lifecycle Management Strategies

- **Pavement Preservation Strategy** – A pavement preservation strategy has been implemented and will continue with a capital budget investment of $100,000-$150,000 annually which will increase overall condition of the paved roads. Areas are prioritized according to need, and/or condition.
- **Develop a Long-Term Capital Plan** – Staff currently have a 4-year capital plan Increased capital costs are expected for paved roads over the next 10-20 years due to their condition and age. Staff have implemented a phased road preservation strategy and plan to complete full road reconstructions in alignment with any required water/sewer/storm projects to minimize costs and impact on the transportation network.

Levels of Service

- **Measure Current Levels of Service** – This AMP contains a basic measurement of the Municipality's current levels of service according to the metrics established in O. Reg. 588/17. Staff will continue to measure the current levels of service according to these metrics to allow for trend analysis that informs long-term planning.
- **Identify Additional LOS Metrics** – Staff may identify additional LOS metrics that would inform both short and long-term asset management planning. See Appendix E for examples.
- **Identify Proposed Levels of Service** - Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

4.2 Bridges & Culverts

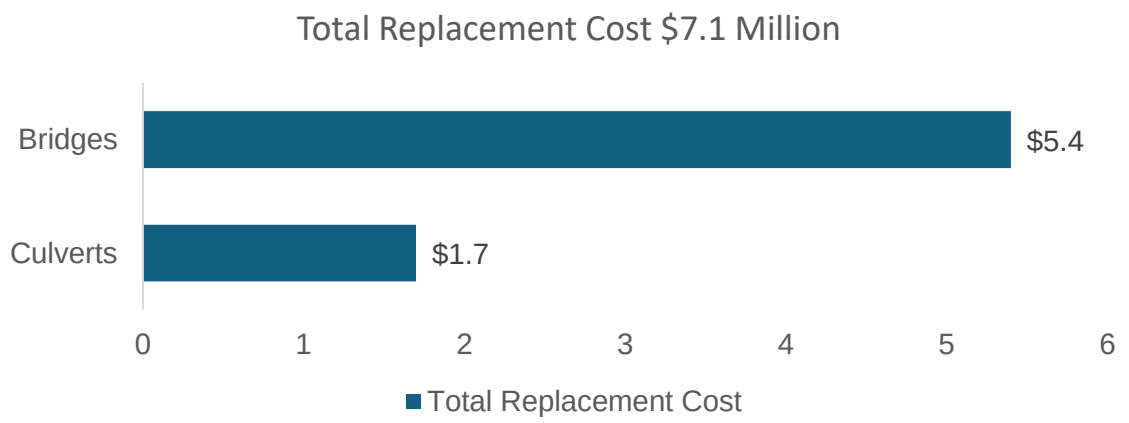
Bridges & Culverts are a critical component of the Municipality's transportation network. They facilitate the movement of passenger vehicles, trucks, pedestrians and cyclists. All bridge and structural culverts (>=3m in span) are subject to biennial inspections as per the Ontario Bridge Inspection Manual (OSIM).

The Municipality's Bridges & Culverts are maintained by the Infrastructure Services Department.

4.2.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Bridges & Culverts inventory.

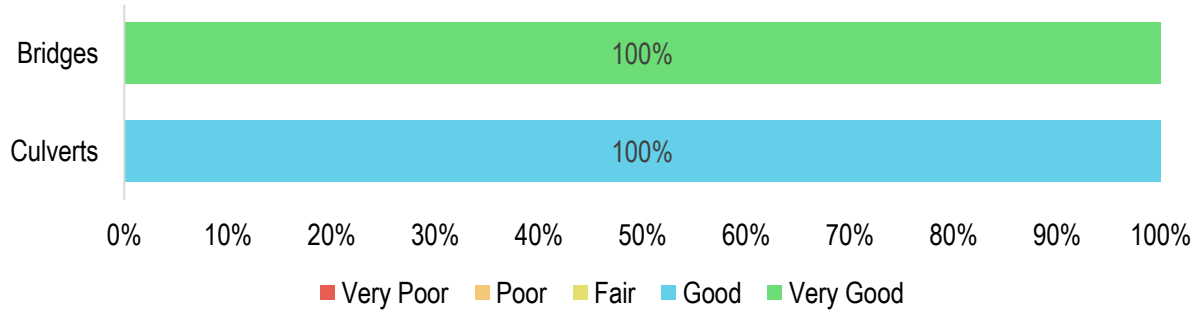
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Bridges	3	CPI Tables	$5,383,381
Culverts	2	CPI Tables	$1,688,153
Total			**$7,071,534**



4.2.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Bridges	88%	Very Good	100% Assessed
Culverts	68%	Good	88% Assessed
Total	**80%**	**Very Good**	**97% Assessed**



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 municipality's current approach:

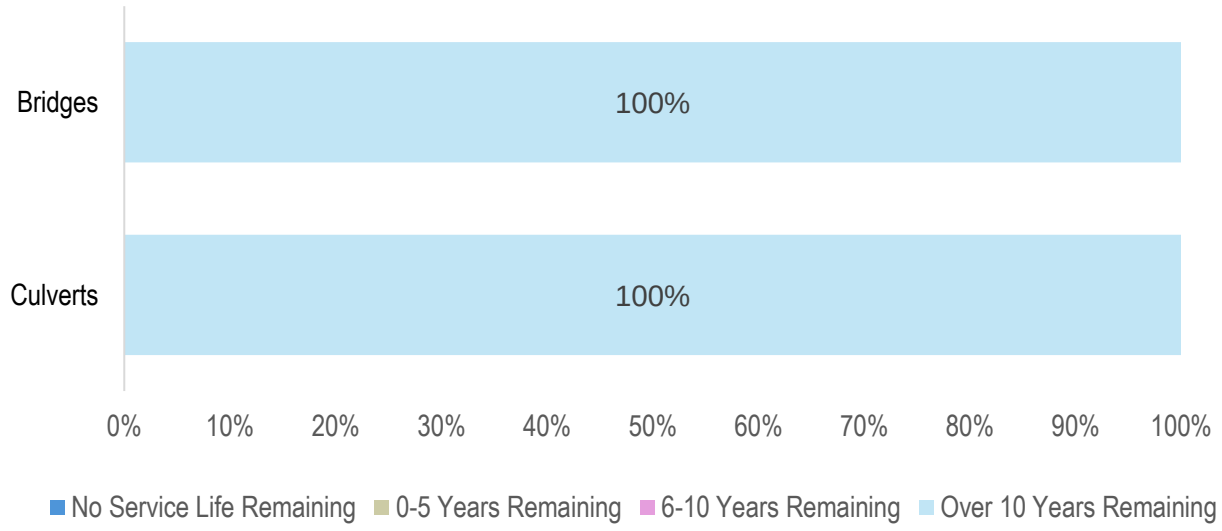
- OSIM Inspections completed every two years as per regulatory requirements by external consultants
- BCI ratings provided for each structure
- Staff visually inspect structures throughout the year and note any major issues that require attention

4.2.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Bridges & Culverts assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Bridges	50 Years	9.2	40.8
Culverts	50 Years	7.1	42.9
Total		**8.3**	**41.6**



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

4.2.4 Lifecycle Management Strategy

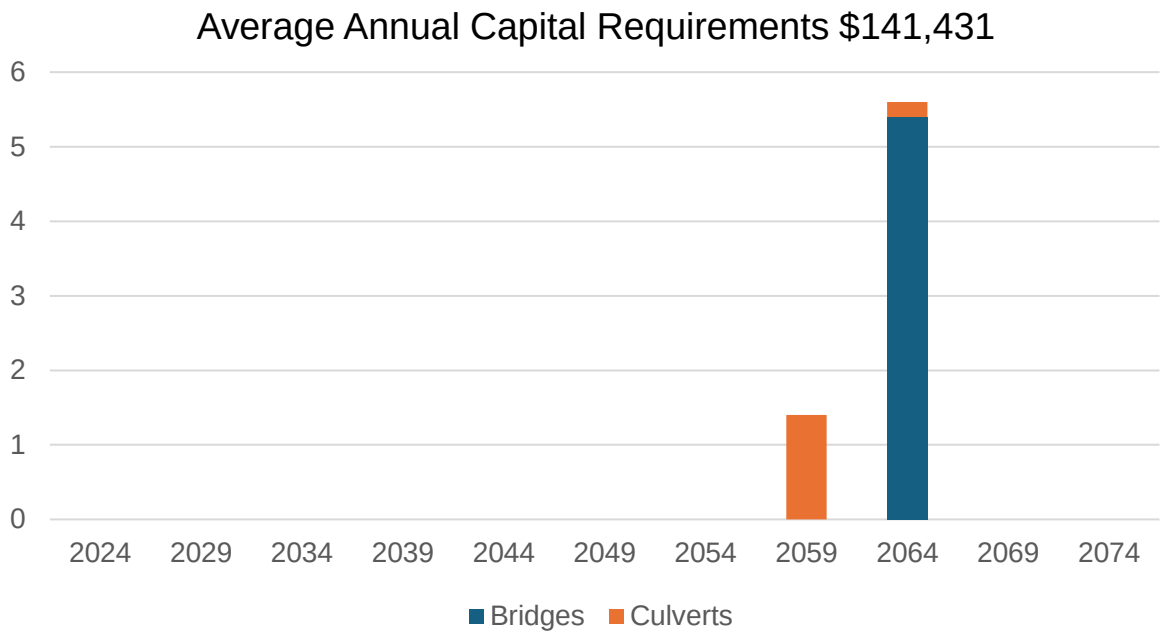
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Fairly small O&M budget for bridges & culverts to clear blockages/ice or complete sealing/painting work. Budget is mostly driven by results of OSIM inspections.
Rehabilitation	All bridges were replaced within past ten years, more of a focus on preventative maintenance.
Replacement	Recent replacements were due to floods/washouts and conditions of those structures. Existing structures are relatively new, and no reconstruction projects are expected in the near future.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.



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

4.2.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.

The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Critical Assets

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

4.2.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service (2023)
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Municipal bridges form a key component of the Municipality's transportation network. There are no load or dimensional restrictions on any structures. Traffic that is supported by municipal bridges includes heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians and cyclists.
Quality	Description or images of the condition of bridges and how this would affect use of the bridges	See Appendix B
	Description or images of the condition of culverts and how this would affect use of the culverts	See Appendix B

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of bridges and structural culverts in the municipality with loading or dimensional restrictions	0%
Quality	Average bridge condition index value for bridges in the municipality	88
	Average bridge condition index value for structural culverts in the municipality	68
Performance	Capital reinvestment rate	

4.2.7 AM Development Plan

Levels of Service

- **Measure Current Levels of Service** – This AMP contains a basic measurement of the Municipality's current levels of service according to the metrics established in O. Reg. 588/17. Staff will continue to measure the current levels of service according to these metrics to allow for trend analysis that informs long-term planning.

- **Identify Additional LOS Metrics** – Staff may identify additional LOS metrics that would inform both short and long-term asset management planning. See Appendix E for examples.

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

4.3 Storm Water Network

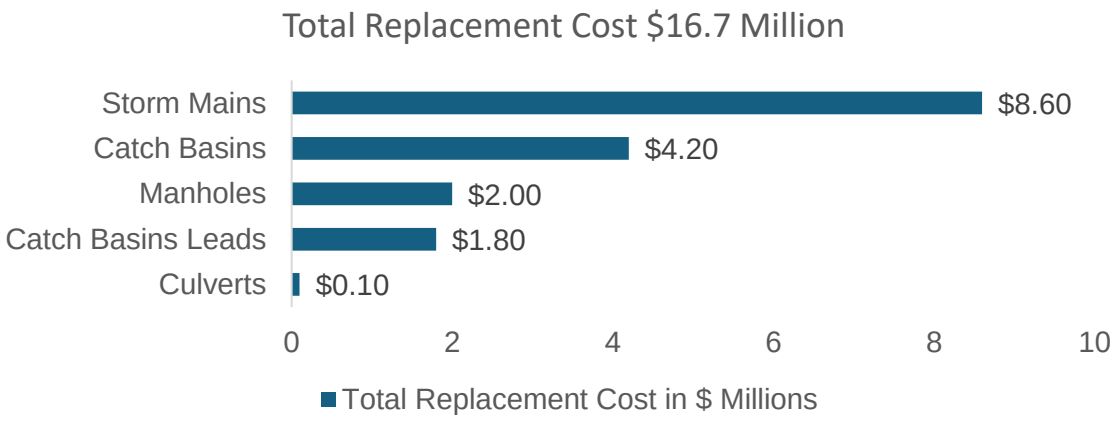
The Municipality is responsible for owning and maintaining a Storm Water Network consisting of 12.2 kilometres of storm sewer mains, catch basins, manholes, and drainage culverts.

The Storm Water Network is maintained throughout the year by the Infrastructure Services Department.

4.3.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Storm Water Network inventory.

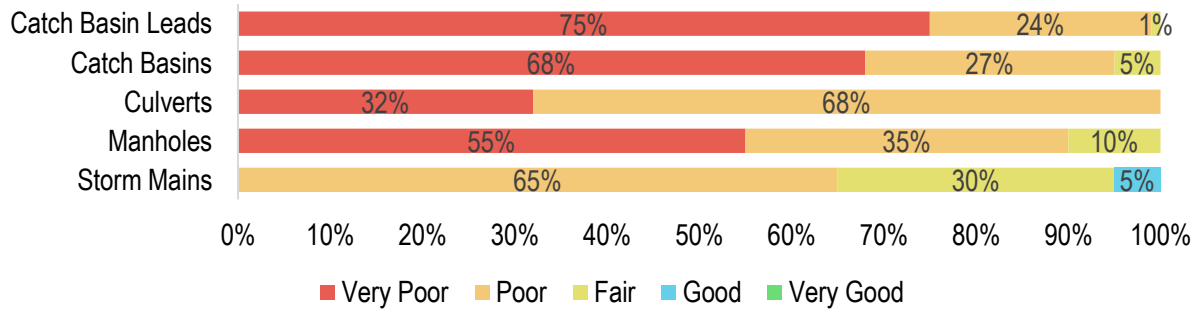
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Catch Basin Leads	3,930 metres	Cost/Unit	$1,757,085
Catch Basins	346	Cost/Unit	$4,187,638
Culverts	341 metres	Cost/Unit	$95,890
Manholes	172	Cost/Unit	$2,029,028
Storm Mains	12,209 metres	Cost/Unit	$8,603,090
Total			**$16,672,731**



4.3.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Catch Basin Leads	18%	Very Poor	Age-based
Catch Basins	19%	Very Poor	Age-based
Culverts	24%	Poor	Age-based
Manholes	23%	Poor	Age-based
Storm Mains	37%	Poor	Age-based
Total	**29%**	**Poor**	**100% Age-based**



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

Current Approach to Condition Assessment

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

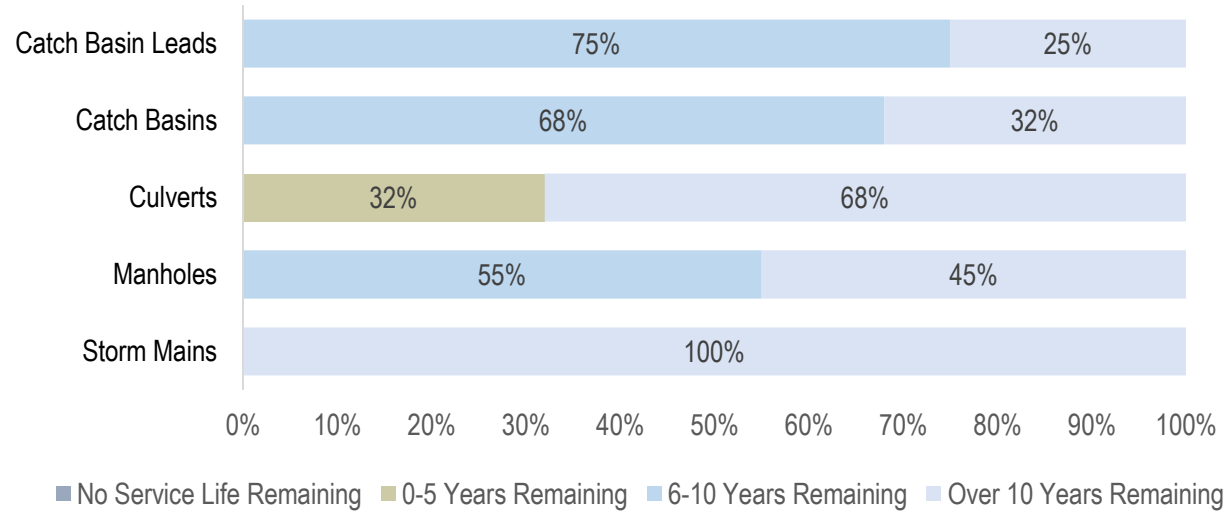
- There are few condition assessment strategies in place for the storm sewer network
- Some inspections are completed in select areas based on new construction projects; this is supplemented through occasional visual inspections as required
- Financial and time constraints prevent a more network wide approach to assessment at this time.

4.3.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Storm Water Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Catch Basin Leads	60 Years	49.0	11.0
Catch Basins	60 Years	48.6	11.4
Culverts	50 Years	39.0	11.0
Manholes	60 Years	46.5	13.5
Storm Mains	75 Years	47.7	27.2
Total		**47.9**	**15.3**



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

4.3.4 Lifecycle Management Strategy

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

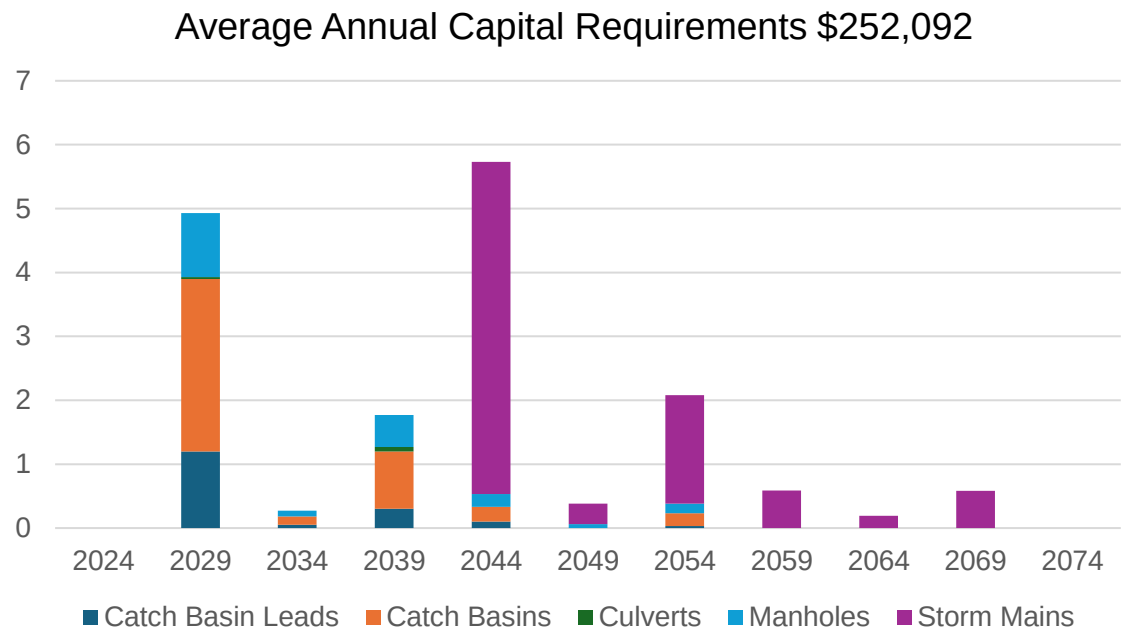
The following table outlines the Municipality's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Catch basins are flushed/cleaned annually Any blockages or obstructions are removed from storm sewer mains as identified Freeze/thaw can pose some risks (water sitting on roadway until cleared) Fairly minimal O&M costs for the storm sewer network
Replacement	Replacement of storm sewer infrastructure is not common Any replacement projects would be based on condition, any capacity concerns and the availability of funding

Forecasted Capital Requirements

The following graph forecasts capital requirements for the Storm Water Network.

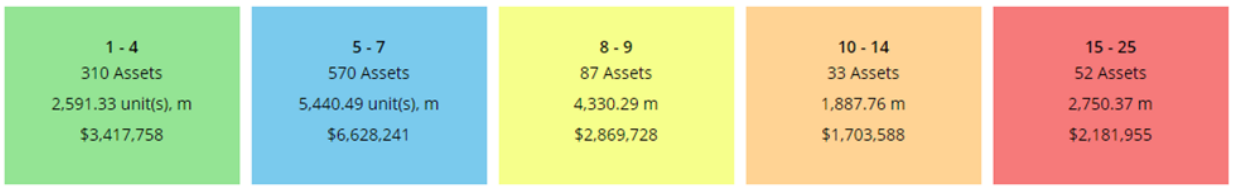
The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.



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

4.3.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

4.3.6 Levels of Service

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

Community Levels of Service

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

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

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of properties in municipality resilient to a 100-year storm (* There is insufficient data to confidently determine the % of properties resilient to a 100-year storm)	TBD *
	% of the municipal stormwater management system resilient to a 5-year storm (All existing stormwater infrastructure has been designed to handle at least a 1 in 5-year storm)	100%
Performance	Capital reinvestment rate	

4.3.7 AM Development Plan

Asset Inventory/Data Refinement

- The Municipality will continue to update the asset inventory records when additional information becomes available or assets are replaced.

Lifecycle Management Strategies

- **Review Lifecycle Management Strategy** – This AMP relies entirely on age-based estimates of asset condition for the Storm Water Network. Based on age there is the potential for substantial project capital cost requirements within the next 20 years. The completion of condition assessments will build confidence in the timing of projected capital costs. Given a limited availability of capital funding and the low instance of issues within the Storm Water Network, the Municipality may consider developing a more formal condition assessment strategy when funds allow, which may include the use of CCTV cameras to inspect storm sewer mains

- **Develop a Long-Term Capital Plan** – With the majority of storm sewers constructed in the 1970s, capital needs have been fairly minimal to date. In the next 10-30 years a significant portion of the Storm Water Network is expected to reach the end of its lifecycle and rehabilitation, or replacement may be required. While short-term capital project costs may be minimal, staff to start planning for future requirements to ensure that adequate reserves are available when those needs become realized.

Levels of Service

- **Measure Current Levels of Service** – This AMP contains a basic measurement of the Municipality's current levels of service according to the metrics established in O. Reg. 588/17. Staff will continue to measure the current levels of service according to these metrics to allow for trend analysis that informs long-term planning.
- **Identify Additional LOS Metrics** – Staff may identify additional LOS metrics that would inform both short and long-term asset management planning. See Appendix E for examples.
- **Identify Proposed Levels of Service** - Working towards identifying proposed levels of service as per O. Reg. 588/17 and identifying the strategies that are required to close any gaps between current and proposed levels of service.

4.4 Buildings

The Municipality of Wawa owns and maintains a number of facilities and recreation facilities that provide key services to the community. These include:

- an airport to provide air transportation services
- a fire hall to provide emergency services
- public works buildings to support the delivery of public works and operations
- a municipal building to provide municipal services
- a marina, tourist information centre, community centre, and more

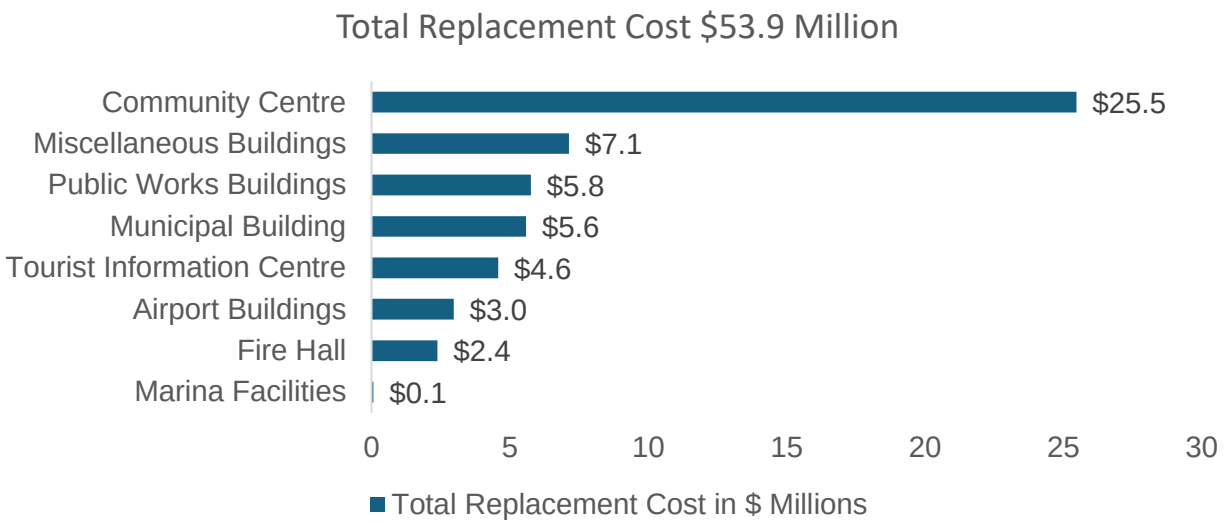
Note that buildings that are utilized to provide services in the Water Network and Sanitary Sewer Network are included in their own sections within this AMP.

Building assets were broken into component parts (e.g. foundation, roofing, HVAC, flooring, etcetera) which were added to the asset inventory database during the 2023 condition assessment project. This project also provided condition ratings, estimated remaining useful life, and replacement costs by component.

4.4.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Buildings inventory. Building assets were broken into component parts (e.g. foundation, roofing, HVAC, flooring, etcetera) in 2023.

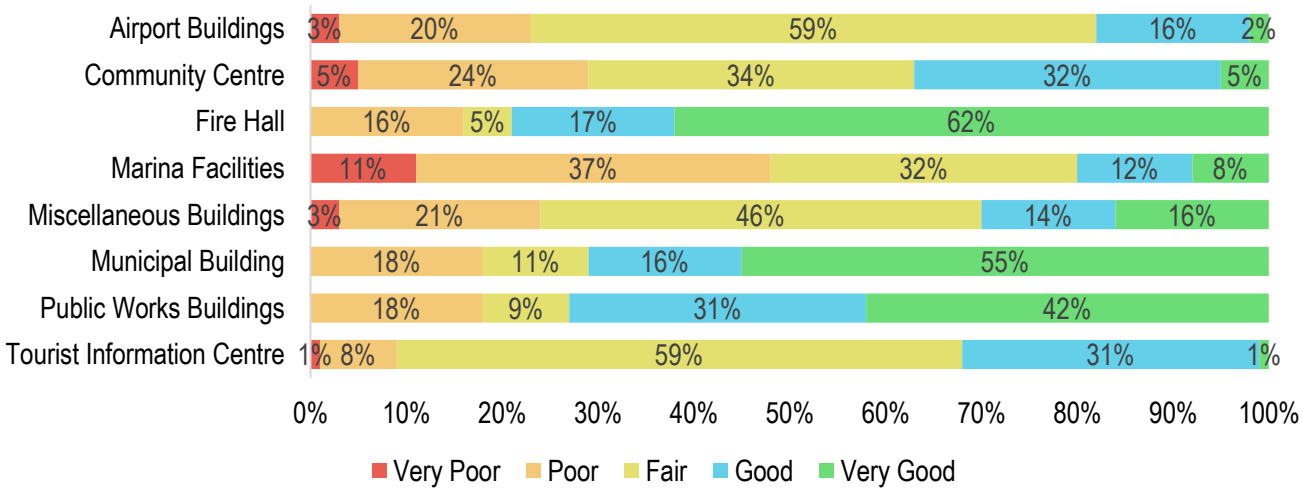
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Airport Buildings	3	Cost/Unit Inflated	$2,967,843
Community Centre	1	Cost/Unit Inflated	$25,479,243
Fire Hall	1	Cost/Unit Inflated	$2,380,574
Marina Facilities	1	Cost/Unit Inflated	$69,541
Miscellaneous Buildings	5	Cost/Unit Inflated	$7,137,800
Municipal Building	1	Cost/Unit Inflated	$5,587,899
Public Works Buildings	2	Cost/Unit Inflated	$5,762,906
Tourist Information Centre	1	Cost/Unit Inflated	$4,578,336
Total			**$53,964,142**


Total Replacement Cost $53.9 Million
Community Centre
Miscellaneous Buildings
Public Works Buildings
Municipal Building
Tourist Information Centre
Airport Buildings
Fire Hall
Marina Facilities
$25.5
$7.1
$5.8
$5.6
$4.6
$3.0
$2.4
$0.1
0
5
10
15
20
25
30
Total Replacement Cost in $ Millions

4.4.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Airport Buildings	48%	Fair	100% Assessed
Arena Buildings	56%	Fair	100% Assessed
Fire Hall	55%	Fair	100% Assessed
Marina Facilities	44%	Fair	100% Assessed
Miscellaneous Buildings	55%	Fair	100% Assessed
Municipal Building	62%	Good	100% Assessed
Public Works Buildings	65%	Good	100% Assessed
Tourist Information Centre	58%	Fair	100% Assessed
Total	**56%**	**Fair**	**100% Assessed**



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

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 municipality's current approach:

- Building condition assessments were conducted on all municipal buildings in June, 2023 by certified professionals of Accent Building Sciences Inc.

- Joint Health & Safety Committee members inspect buildings monthly, and deficiencies noted are addressed as needed. All staff members have been directed to bring forward any concerns noted within municipal buildings so that issues can be addressed in a timely manner.

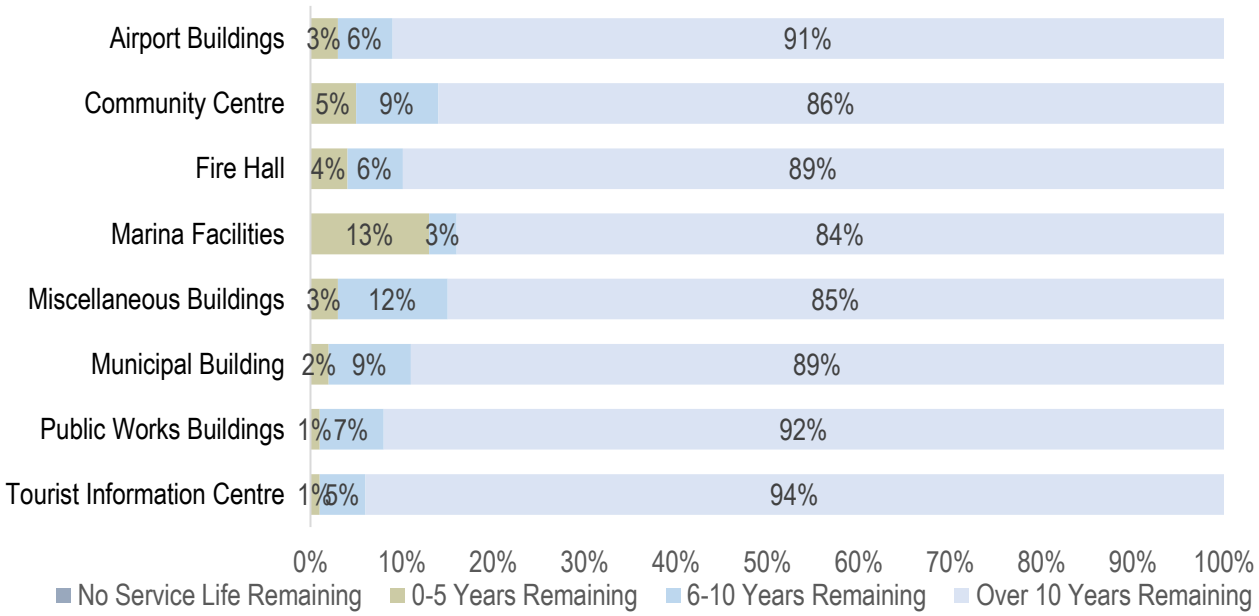
- Specific building components, such as HVAC systems, are inspected as part of a service contract on a regular schedule by professional contractors who specialize in these types of components. Repairs are completed as needed.

4.4.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Buildings component assets has been assigned according to an assessment by a professional engineer and based on established industry standards. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Airport Buildings	10-75 years	25.0	16.9
Community Centre	10-75 years	20.2	18.1
Fire Hall	10-75 years	27.6	20.6
Marina Facilities	15-75 years	27.3	17.5
Miscellaneous Buildings	10-75 years	21.8	19.4
Municipal Building	10-75 years	25.3	24.1
Public Works Buildings	10-75 years	22.5	22.6
Tourist Information Centre	10-75 years	21.0	19.8
Total		**22.7**	**19.9**



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

4.4.4 Lifecycle Management Strategy

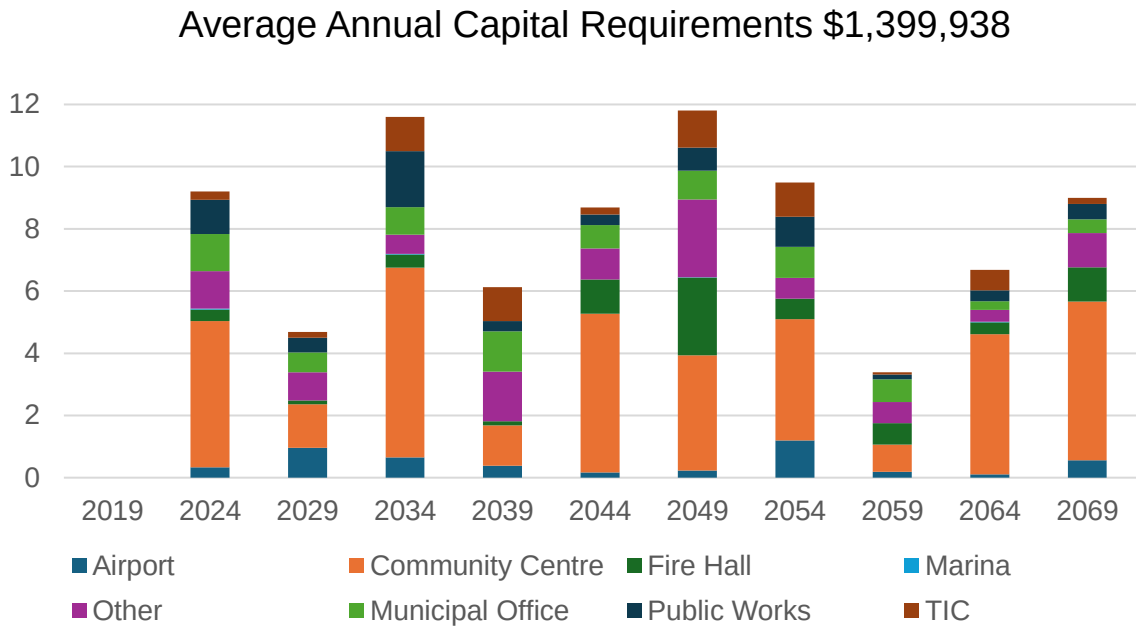
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Monthly inspections by Joint Health & Safety Committee members identify deficiencies and repairs needed are arranged and completed
	Specific building components, such as HVAC systems, are inspected as part of a service contract on a regular schedule by professional contractors who specialize in these types of components. Repairs are completed as needed.
Replacement	Building components are replaced as needed. Full replacement of building assets are not anticipated, although renovations in some buildings are planned.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.



4.4.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.

The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

4.4.6 Levels of Service

The following tables identify the Municipality's current level of service for the buildings. 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 Municipality has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service (2023)
Scope	Adequate number of municipal buildings for staff to use while providing municipal services and for public to access recreation services	See table in section 4.4.1
Quality	Providing facilities in a state of good repair	77% of building asset components in Fair or better condition

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average building condition index value for buildings in the municipality	56% - Fair
Performance	Capital reinvestment rate	

4.4.7 AMP Development Plan

Asset Inventory/Data Refinement

- **Update Inventory Data** – As repairs and replacements of building components occur, the asset inventory will continue to be updated to reflect the changes.

- **Review Replacement Costs** – The replacement costs developed for Buildings in this AMP are based on the estimates provided by the professional engineer from Accent Building Sciences Inc. (ABSI). These replacement costs will be reviewed annually and updated to reflect current costs.

Levels of Service

- **Identify Proposed Levels of Service Metrics** - Municipality working towards identifying proposed levels of service to be provided by facilities by July 1, 2025 according to O. Reg. 588/17. See Appendix E for examples.

4.5 Machinery & Equipment

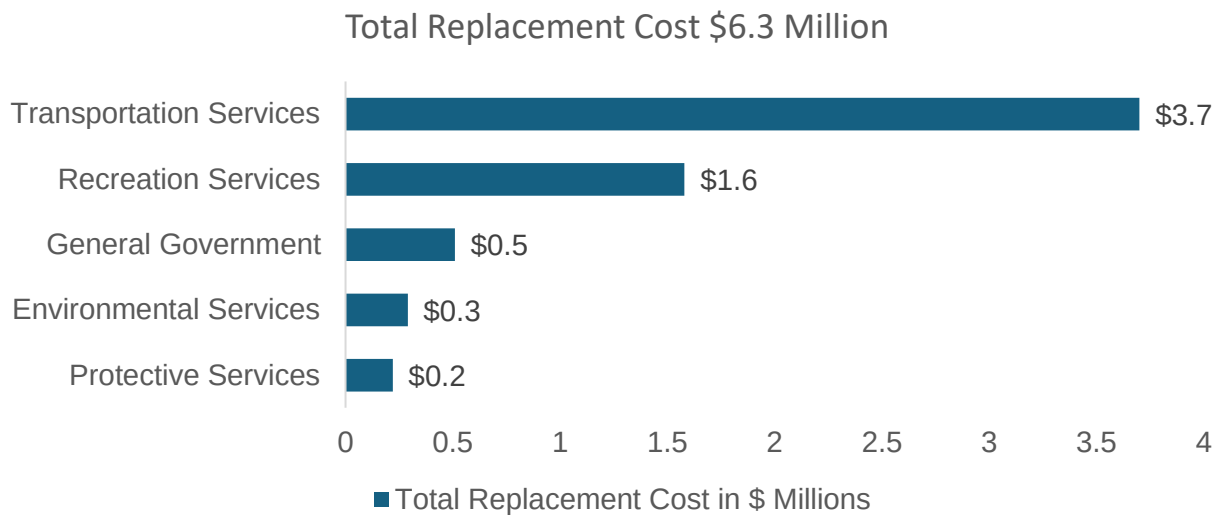
In order to maintain the high quality of public infrastructure and support the delivery of core and non-core services, municipalities own and employ various types of machinery and equipment. These include:

- Landfill compactor and roll off truck to support waste disposal
- Tele-communications equipment, software and network hardware
- Fire equipment to support; the delivery of emergency services
- Mowers, ice resurfacer, chillers, and fitness equipment to provide recreation services
- Snow blowers, loaders, graders and fuel systems to support public works and transportation services

4.5.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Machinery & Equipment inventory.

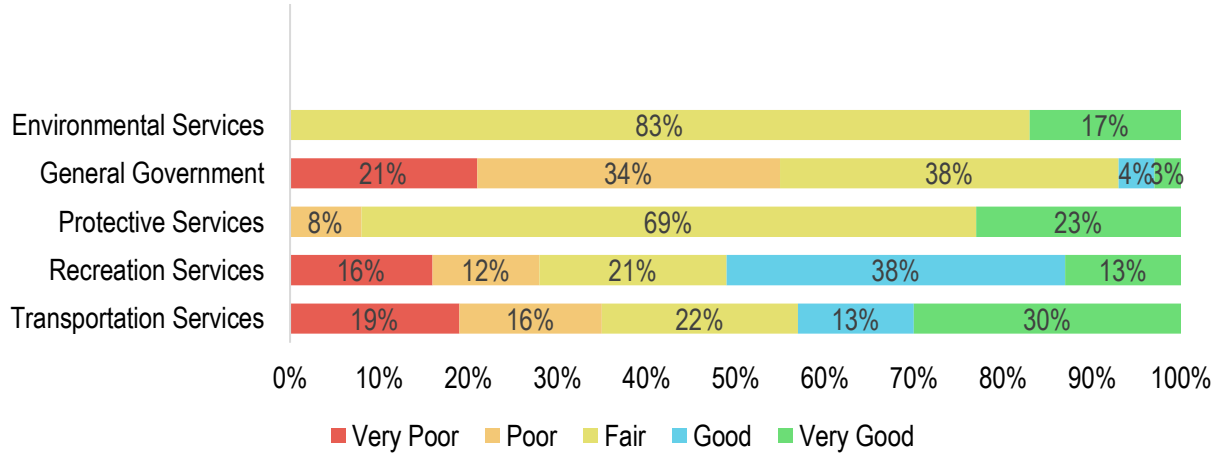
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Environmental Services	2	CPI Tables	$291,323
General Government	42	CPI Tables	$510,873
Protective Services	5	CPI Tables	$223,221
Recreation Services	36	CPI Tables	$1,579,759
Transportation Services	39	CPI Tables	$3,718,568
Total			**$6,323,744**



4.5.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment of Machinery & Equipment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Environmental Services	78%	Good	Age-based
General Government	45%	Fair	41% Assessed
Protective Services	49%	Fair	75% Assessed
Recreation Services	48%	Fair	20% Assessed
Transportation Services	53%	Fair	47% Assessed
Total	**50%**	**Fair**	**39% Assessed**



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

Current Approach to Condition Assessment

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

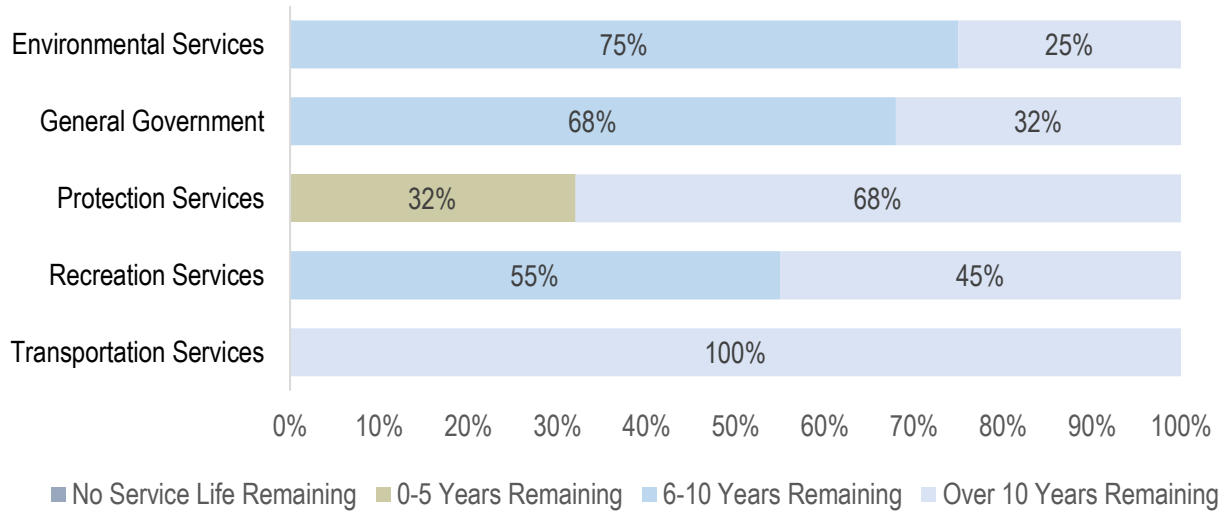
- Fire Department (Protection Services) equipment is tested and inspected annually
- Mowers are checked by staff for safe operating before each use
- Heavy Infrastructure Services equipment (e.g. grader, loader) are inspected annually as required

4.5.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Machinery & Equipment assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Environmental Services	5-20 years	1.8	11.5
General Government	3-20 years	4.4	1.7
Protection Services	5-20 years	7.7	3.3
Recreation Services	3-20 years	6.7	7.2
Transportation Services	5-20 years	9.0	6.3
Total		**6.6**	**5.7**



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

4.5.4 Lifecycle Management Strategy

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

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

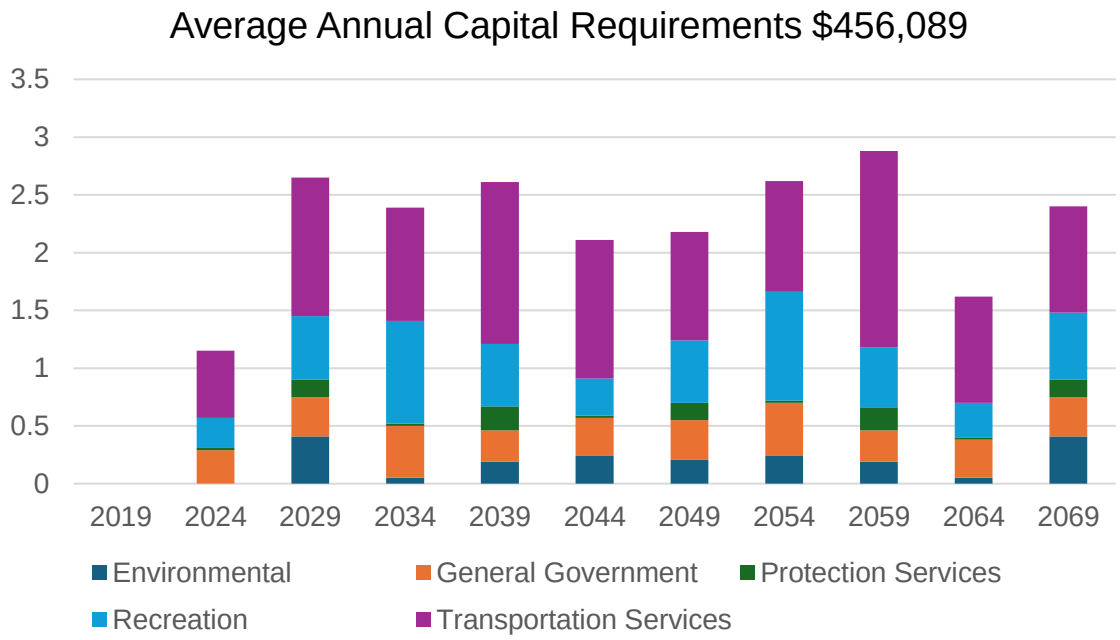
Activity Type	Description of Current Strategy
Maintenance	Mowers checked before each use with repairs completed as needed Operators of heavy equipment (graders, loaders, etcetera) check equipment before each use to identify deficiencies needing repair; annual safety inspections may lead to required repairs Major and minor servicing conducted on compressors on a regular schedule
Replacement	Replacement of machinery & equipment is completed as needed

	Any replacement projects would be based on condition, any capacity concerns and the availability of funding

Forecasted Capital Requirements

The following graph forecasts capital requirements for Machinery & Equipment.

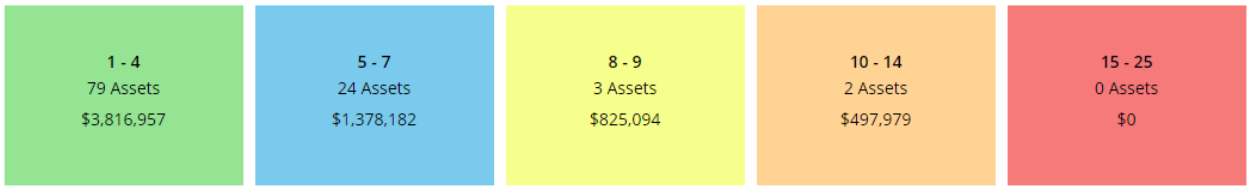
The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.



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

4.5.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

4.5.6 Levels of Service

The following tables identify the Municipality's current level of service for the Machinery & Equipment. 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 Municipality has selected for this AMP.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service (2023)
Scope	Sufficient number and types of equipment to enable staff to perform duties to provide services to the community	Environmental Services Qty 2 General Government Qty 42 Protective Services Qty 5 Recreation Services Qty 36 Transportation Services Qty 39
Quality	Assets are in state of good repair so that machinery & equipment are available when needed	68% of machinery & equipment assets are in Fair or better condition

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition value for machinery and equipment in the municipality	50% - Fair
Performance	Capital reinvestment rate	

4.5.7 AMP Development Plan

Asset Inventory/Data Refinement

- **Update Asset Inventory** – As assets are upgraded or replaced, the asset inventory will be updated to reflect the changes and provide the most accurate information to base future capital decisions.

- **Review Replacement Costs** – The replacement costs developed for Machinery & Equipment in this AMP are almost entirely based on the inflation of historical costs. Equipment replaced more recently will reflect more accurate replacement costs for that type of equipment. Replacement costs will be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- **Condition Assessment Strategy** - Staff completed a cursory review of equipment condition to inform the development of this AMP (32% assessed). The Municipality will look at implementing regular condition assessment procedures for all equipment to better inform short- and long-term capital requirements

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

Levels of Service

Identify Proposed Levels of Service Metrics - Municipality working towards identifying proposed levels of service provided by machinery and equipment by July 1, 2025 according to O. Reg. 588/17. See Appendix E for examples.

4.6 Vehicles

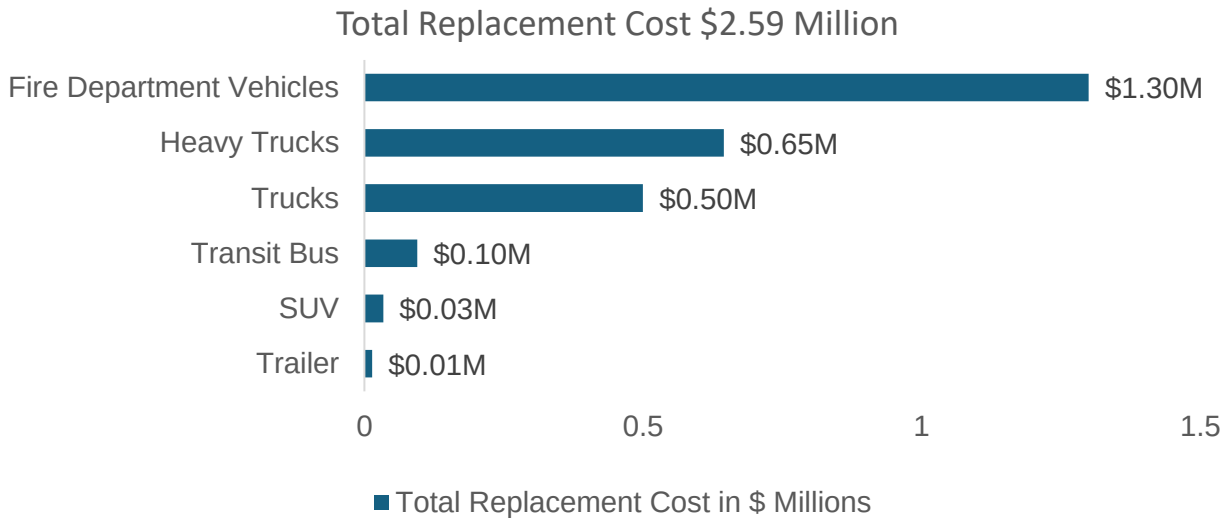
Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- A bus to provide transit services
- Plow trucks, pickup trucks, an SUV, and trailers to support municipal operations
- Pumpers and a rescue van to provide emergency services

4.6.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Vehicles inventory.

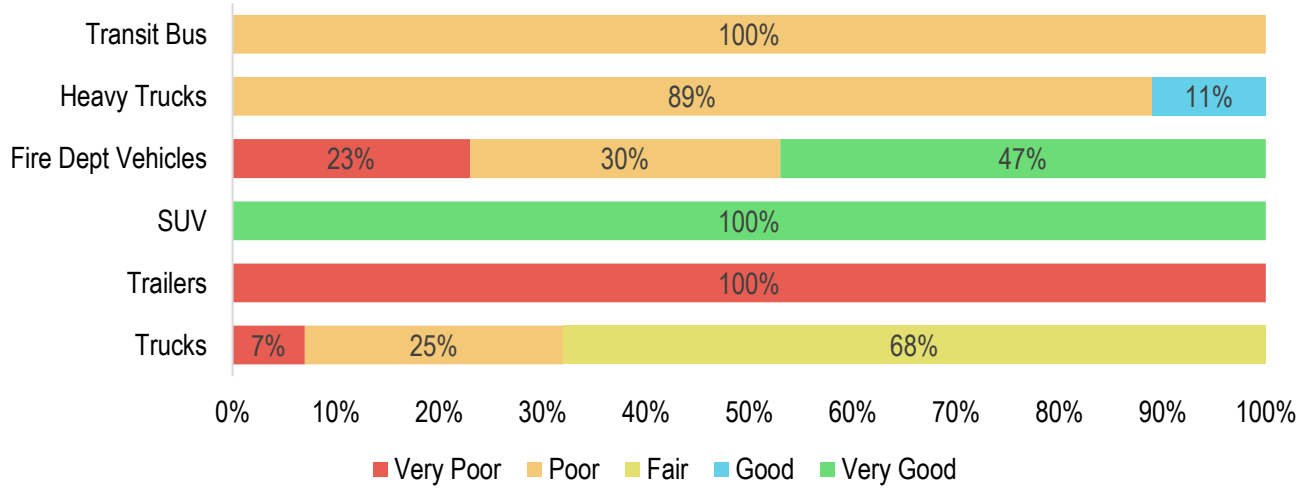
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Transit Bus	1	CPI Tables	$94,743
Heavy Trucks	4	CPI Tables	$644,873
Fire Department Vehicles	4	CPI Tables	$1,303,868
SUV	1	CPI Tables	$33,852
Trailers	1	CPI Tables	$14,177
Trucks	10	CPI Tables	$497,466
Total			**$2,588,979**



4.6.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. Vehicles are inspected annually, with condition ratings to be added to the asset inventory records. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Transit Bus	35%	Poor	Age-based
Heavy Trucks	28%	Poor	Age-based
Fire Department Vehicles	47%	Fair	100% Assessed
SUV	97%	Very Good	Age-based
Trailers	9%	Very Poor	Age-based
Trucks	37%	Poor	Age-based
Total	**40%**	**Fair**	**90% Age-based**



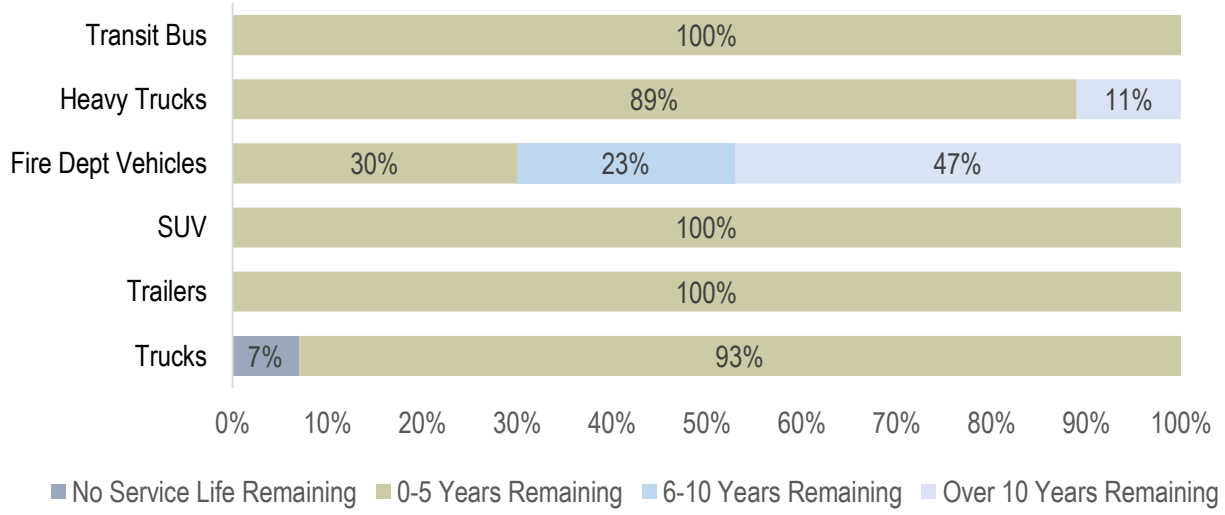
To ensure that the Municipality's Vehicles continue to provide an acceptable level of service, the Municipality will monitor the average condition of all assets. If the average condition declines, staff will re-evaluate the lifecycle management strategy to determine what combination of maintenance, rehabilitation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

4.6.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Vehicles assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Transit Bus	15 years	9.8	5.2
Heavy Trucks	5-15 years	8.5	2.8
Fire Department Vehicles	15 years	9.5	5.5
SUV	5 years	0.2	4.8
Trailers	10 years	9.1	0.9
Trucks	10-15 years	6.3	3.3
Total		**7.2**	**3.8**



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

4.6.4 Lifecycle Management Strategy

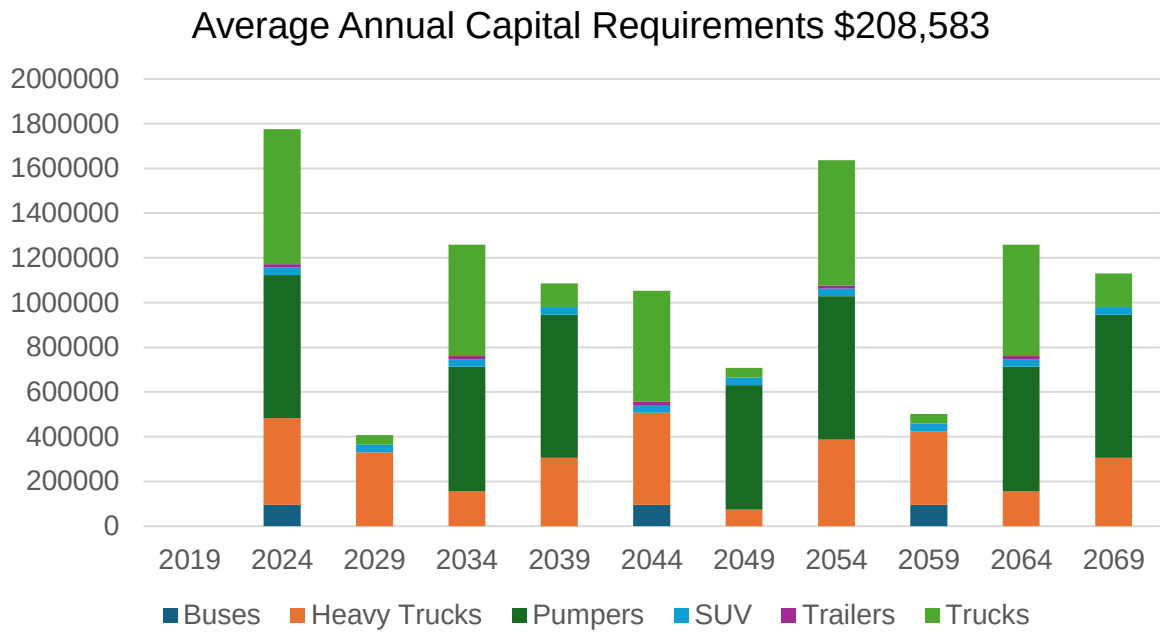
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Annual safety inspections are completed as required by legislation and to ensure vehicles are working properly and safe to operate.
Replacement	Vehicles are replaced as their age and/or condition require replacement, and based on capital funding available. A more formal replacement strategy may be developed to ensure that the Municipality's vehicles continue to be available for use.

Forecasted Capital Requirements

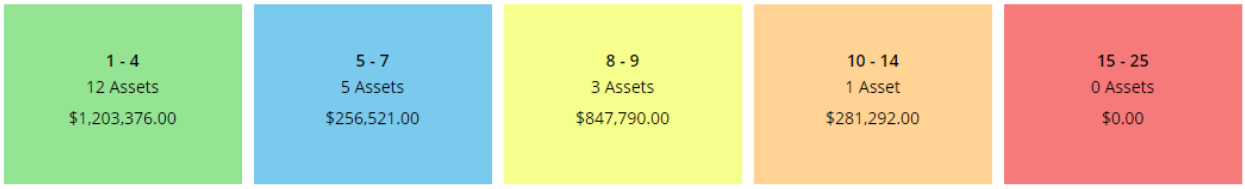
The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.



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

4.6.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

4.6.6 Levels of Service

The following tables identify the Municipality's current level of service for Vehicles. These include the community and technical level of service measures that the Municipality has selected for this AMP in accordance with the requirements of O. Reg. 588/17.

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 Level of Service (2023)
Capacity	Enough vehicles for staff to perform duties in a timely manner	See table in Section 4.6.1
Quality / Reliability	Vehicles in a satisfactory condition to allow staff to perform duties	42% of vehicles are in Fair or better condition

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of vehicles inspected annually	100%
Quality	Average condition rating for vehicles in the municipality	45% - Fair
Performance	Capital reinvestment rate	

4.6.7 AMP Development Plan

Asset Inventory/Data Refinement

- **Review Replacement Costs -** The replacement costs developed for Vehicles in this AMP are entirely based on the inflation of historical costs. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value. More recent purchases provide a better estimate of future replacement costs for that type of vehicle. Replacement costs will be reviewed and updated annually.

Condition Assessment Strategies

- **Condition Assessment Strategy** - Staff provided assessed condition data for about half of all vehicles during the development of this AMP. Safety inspections are completed annually either by in-house staff (licensed mechanic) or outsourced as needed to local garages. Asset condition information will continue to be added to the asset inventory records to ensure that asset management planning is based on the best available data regarding asset condition.

Levels of Service

Identify Proposed Levels of Service Metrics – Staff working towards identifying the proposed levels of service provided by vehicles for the next iteration of the asset management plan by July 1, 2025 according to O. Reg. 588/17.

4.7 Land Improvements

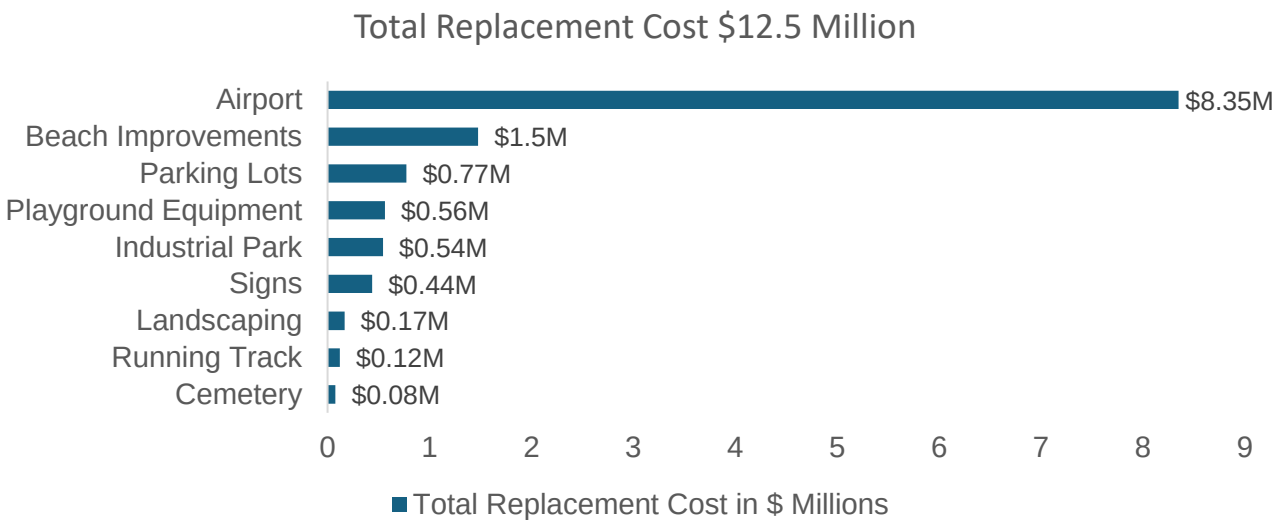
The Municipality of Wawa owns and maintains a small number of assets that are considered Land Improvements. This category includes:

- Airport runway and apron
- Beach walkways, pavilions, and park playground equipment
- Sports field running track, tennis courts
- Cemeteries, fencing, landscaping and signs
- Parking lots

4.7.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Land Improvements inventory.

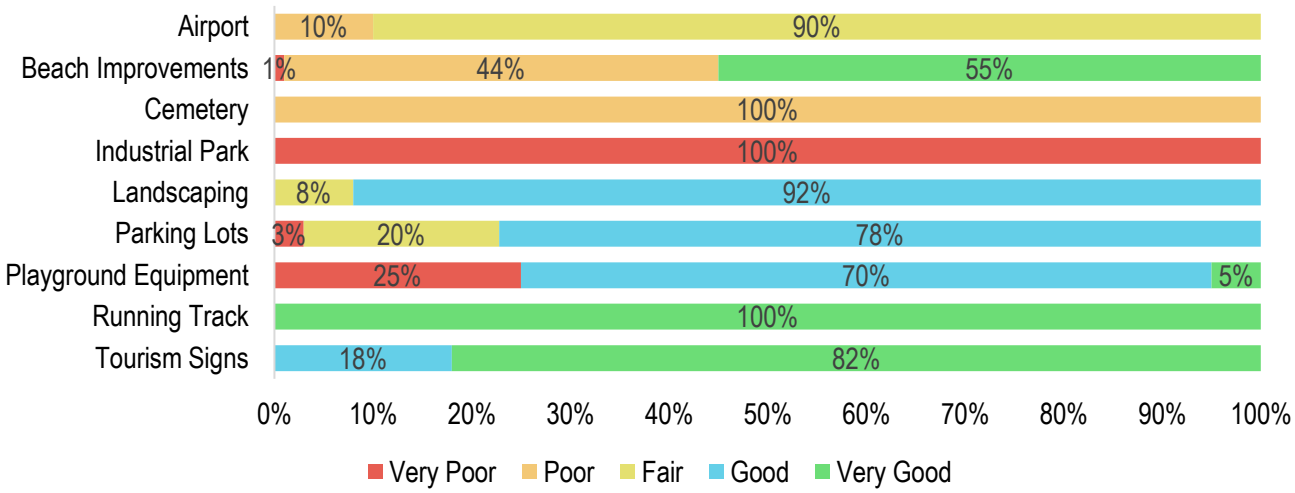
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Airport	2	CPI Tables	$8,349,497
Beach Improvements	5	CPI Tables	$1,478,519
Cemetery	2	CPI Tables	$78,763
Industrial Park	1	CPI Tables	$544,108
Landscaping	3	CPI Tables	$167,952
Parking Lots	8	CPI Tables	$774,470
Playground Equipment	4	CPI Tables	$562,554
Running Track	1	CPI Tables	$120,001
Tourism Signs & Street Signs	21	CPI Tables	$439,383
Total			**$12,515,247**



4.7.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Airport	40%	Fair	100% Assessed
Beach Improvements	48%	Fair	99% Assessed
Cemetery	38%	Poor	Age-based
Industrial Park	8%	Very Poor	Age-based
Landscaping	62%	Good	Age-based
Parking Lots	55%	Fair	100% Assessed
Playground Equipment	51%	Fair	100% Assessed
Running Track	98%	Very Good	Age-based
Tourism Signs	86%	Very Good	Age-based
Total	**60%**	**Good**	**90% Assessed**



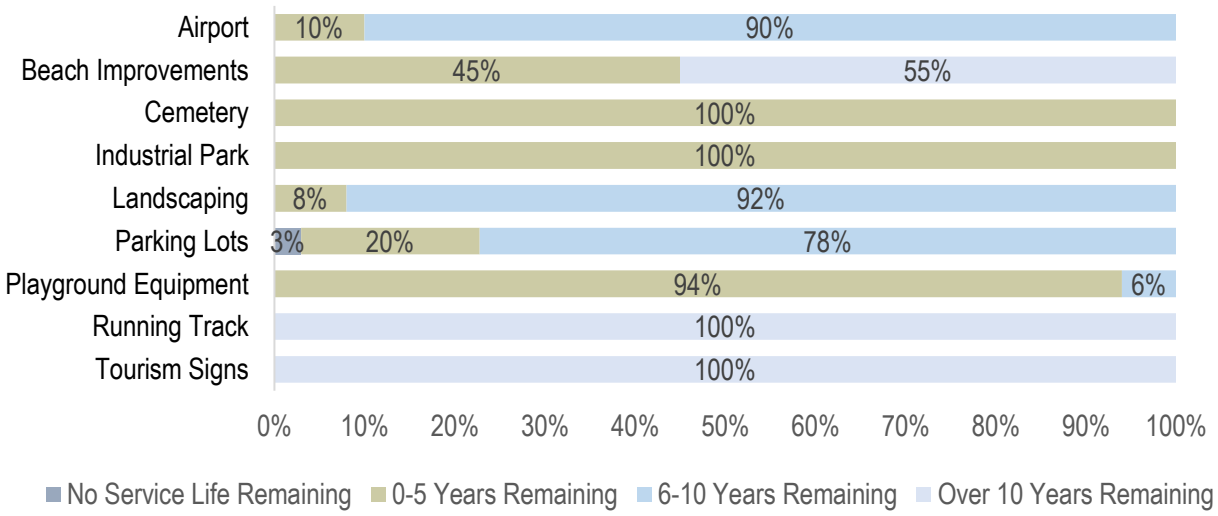
To ensure that the Municipality's Land Improvements continue to provide an acceptable level of service, the Municipality will monitor the average condition of all assets. If the average condition declines, staff will re-evaluate the lifecycle management strategy to determine what combination of maintenance,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

4.7.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Land Improvements assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Airport	10-20 years	19.3	6.4
Beach Improvements	10-50 years	6.7	13.1
Cemetery	10 years	6.2	3.8
Industrial Park	10 years	9.2	0.8
Landscaping	10 years	3.8	6.2
Parking Lots	30 years	40.6	5.4
Playground Equipment	10 years	7.1	6.1
Running Track	15 years	0.2	14.8
Tourism Signs	20 years	1.2	7.3
Total		**13.8**	**9.9**



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

4.7.4 Lifecycle Management Strategy

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

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

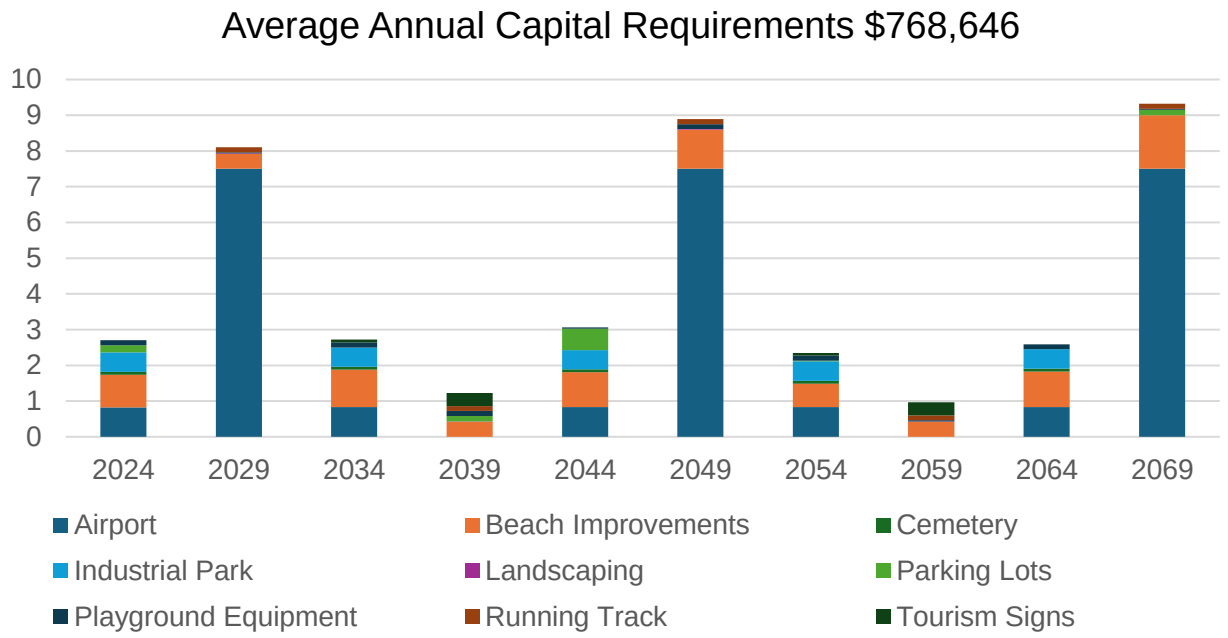
Activity Type	Description of Current Strategy
Maintenance	**Airport** runway and apron plowed and sanded in winter months, as required, and swept in the spring to remove winter sand. Runway markings are repainted annually.
	Beach improvements (walkways, boardwalk, stairs) inspected by staff at the beginning of the summer season for safety concerns and immediate repairs needed. Beach sand is tilled once per month.
	Parking lots are plowed and sanded in winter months, and swept in the spring to remove winter sand. Crack seal and pothole repairs performed as needed.

	Playground equipment inspected by staff daily during summer season (May to October) for safety concerns and immediate repairs needed. Monthly major inspections completed by senior staff to ensure any defects are identified and addressed.
	Grass is mowed on municipal properties, boulevards, parks, beach areas approximately once every two weeks in summer months, or as needed depending on growth.
Replacement	**Airport runway** – nearing end of useful life and staff investigating replacement options and availability of funding
	Playground equipment – replaced as equipment condition deteriorates and as funding is available

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements for Land Improvements.

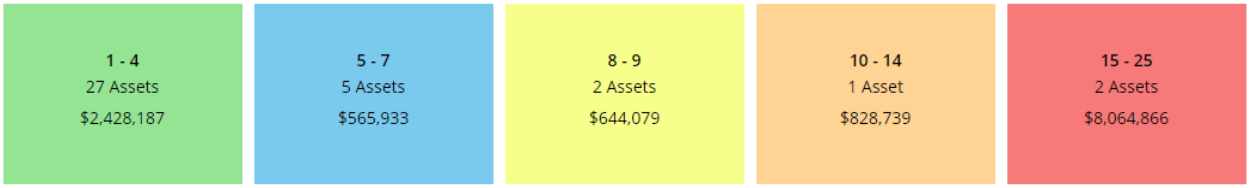
The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.



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

4.7.5 Risk & Criticality

The following risk rating provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

4.7.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service (2023)
Scope		
Quality		
	Description	

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Quality	Average condition rating for land improvement assets in the municipality	60% - Good

4.7.7 AM Development Plan

Asset Inventory/Data Refinement

- **Review Replacement Costs -** The replacement costs developed for Land Improvements in this AMP are entirely based on the inflation of historical costs. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Levels of Service

Identify Proposed Levels of Service Metrics - Working towards identifying proposed levels of service provided by land improvements by July 1, 2025 according to O. Reg. 588/17.

5 Analysis of Rate-funded Assets

Key Insights

Rate-funded assets are valued at $92.9 million

51% of rate-funded assets are in fair or better condition

The average annual capital requirement to sustain the current level of service for rate-funded assets is approximately $2.2 million

5.1 Water Network

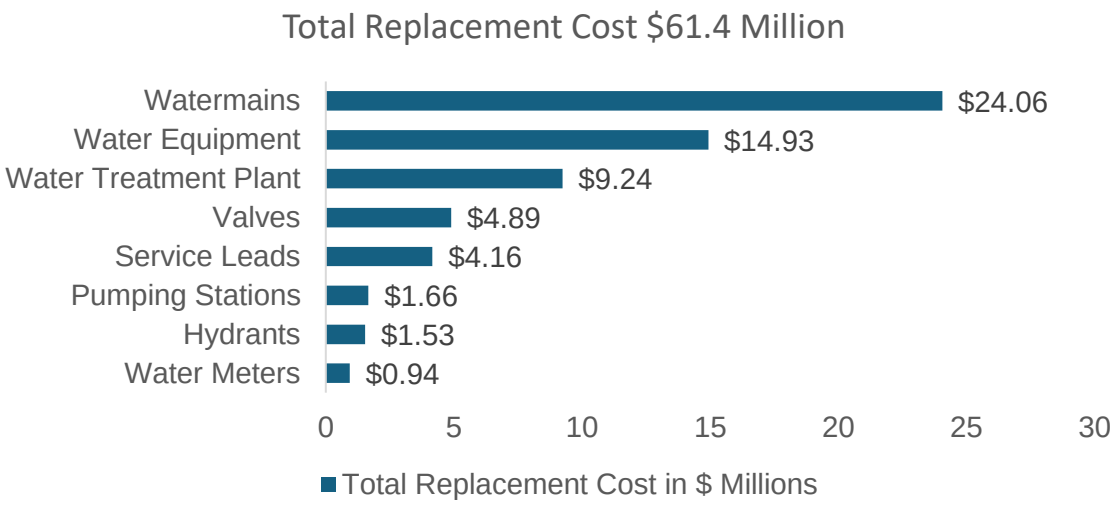
The Municipality of Wawa operates and maintains a water network that serves approximately 3,000 people. The water treatment plant has a rated capacity of 7,880 m^3/day. The water network is subject to numerous Acts and Regulations and is regularly subjected to compliance-based certification processes.

The Water Network is operated and maintained throughout the year by the Infrastructure Services Department.

5.1.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Water Network inventory.

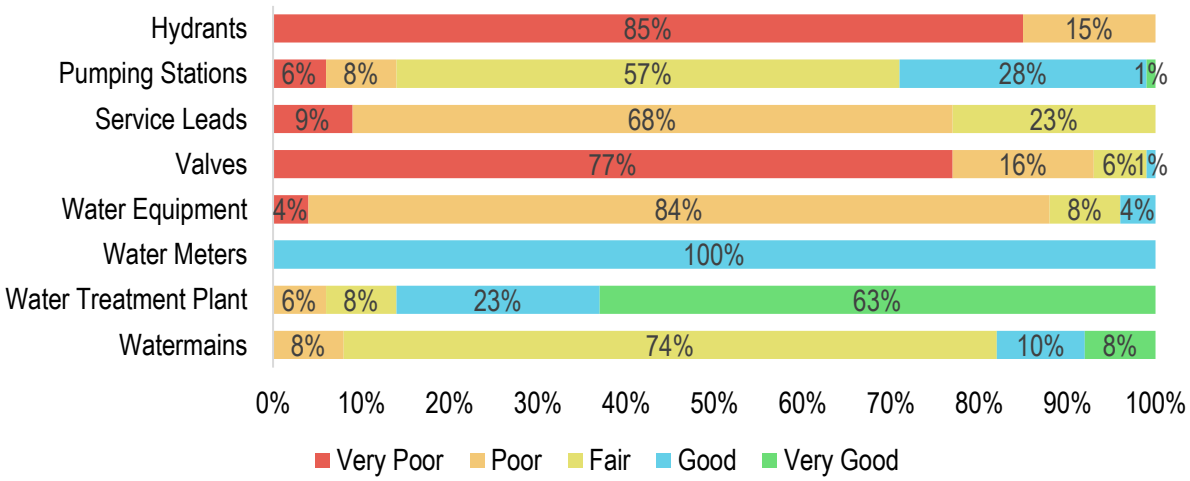
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Hydrants	123	Cost/Unit	$1,533,155
Pumping Stations	3	CPI Tables	$1,661,968
Service Leads	13,696 metres	Cost/Unit	$4,157,019
Valves	1579	Cost/Unit	$4,892,508
Water Equipment	56	CPI Tables	$14,931,273
Water Meters	1346	CPI Tables	$937,220
Water Treatment Plant	1	CPI Tables	$9,237,314
Watermains	31,412 metres	Cost/Unit	$24,060,413
			$61,410,870



5.1.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Hydrants	7%	Very Poor	Age-based
Pumping Stations	42%	Fair	100% Assessed
Service Leads	34%	Poor	Age-based
Valves	21%	Poor	Age-based
Water Equipment	33%	Poor	7% Assessed
Water Meters	67%	Good	Age-based
Water Treatment Plant	70%	Good	100% Assessed
Watermains	51%	Fair	Age-based
Total	**42%**	**Fair**	**19% Assessed**



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

Current Approach to Condition Assessment

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

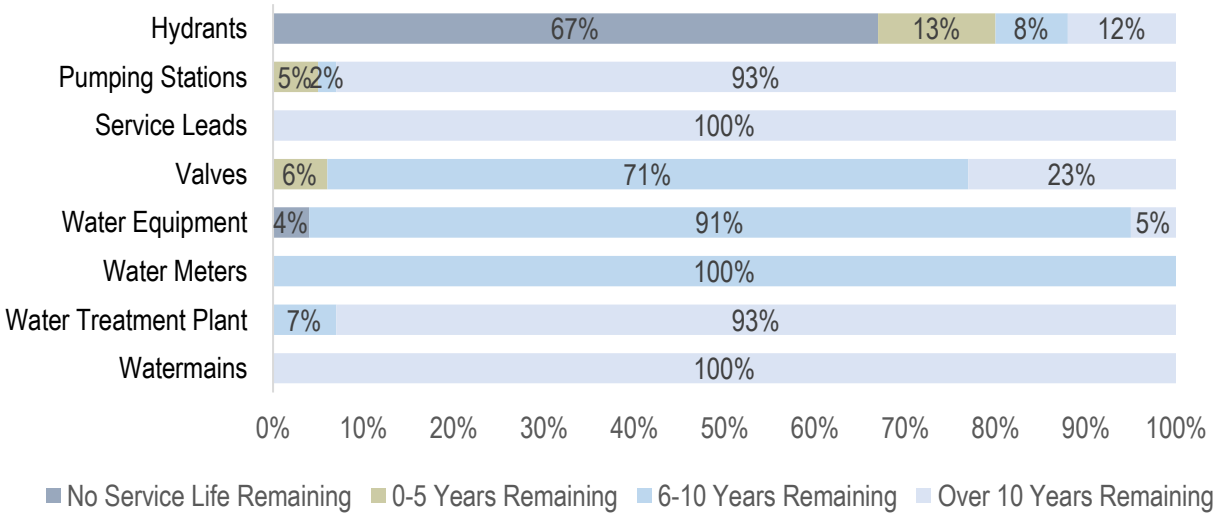
- No formal condition assessment program in place for linear water infrastructure
- Hydrants are inspected annually by staff; assessment data to be incorporated into asset inventory
- Daily inspections are completed by staff on Water Treatment Plant equipment and facilities
- Staff meet regularly to review upcoming water treatment asset needs. Booster station gets assessed weekly
- Third-party engineers are contracted for inspections of water assets as required by legislation
- Condition assessments of water assets were conducted by third-party engineers and staff to support the development of the Water & Wastewater Master Plan

5.1.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Water Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Hydrants	40 years	41.3	-1.3
Pumping Stations	10-75 years	27.2	17.4
Service Leads	60 years	44.1	15.9
Valves	50 years	43.3	6.7
Water Equipment	10-20 years	16.1	2.7
Water Meters	15 years	8.6	6.2
Water Treatment Plant	10-75 years	15.9	25.1
Watermains	75 years	42.6	32.4
Total		**43.2**	**15.5**



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

5.1.4 Lifecycle Management Strategy

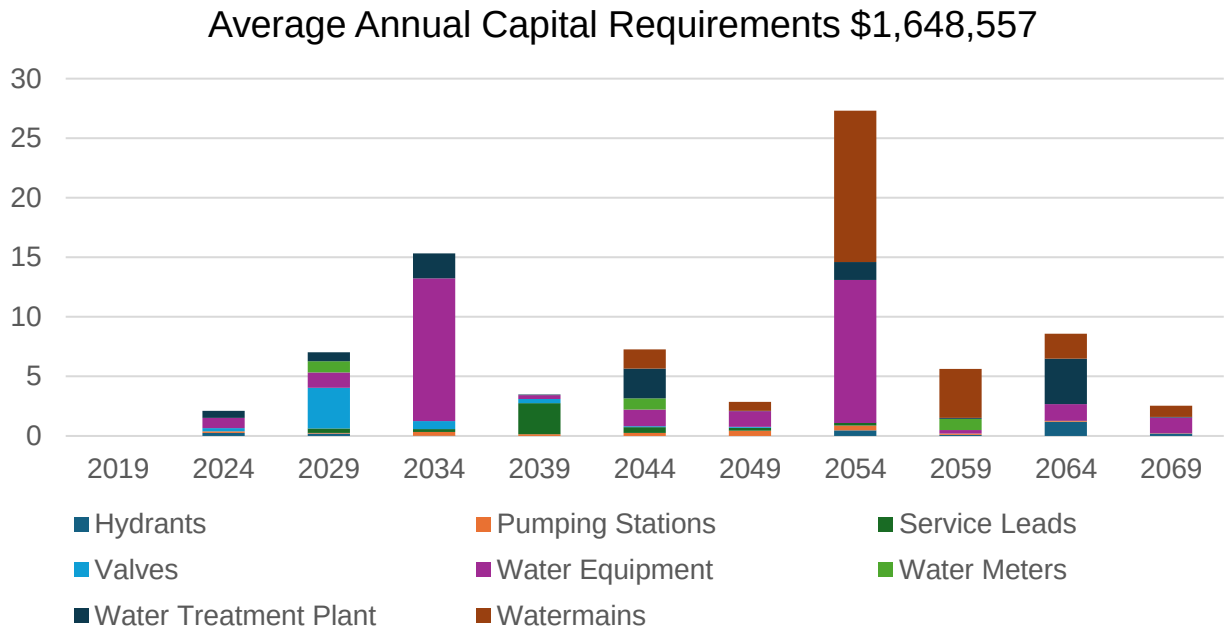
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	Watermain flushing is completed twice annually in the Spring and Fall Valve exercising is utilized as a preventative maintenance activity to ensure proper valve functioning Operating costs for water treatment and flushing comprise the majority of the O&M budget for the Water Network
Rehabilitation /Replacement	The water treatment plant was replaced in 2006 and plant components are replaced as needed Replacing components of the water distribution system is more reactive and depends on the identification of breaks, leaks or other operational concerns A 10-year capital plan has been prepared for the Water Network

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.

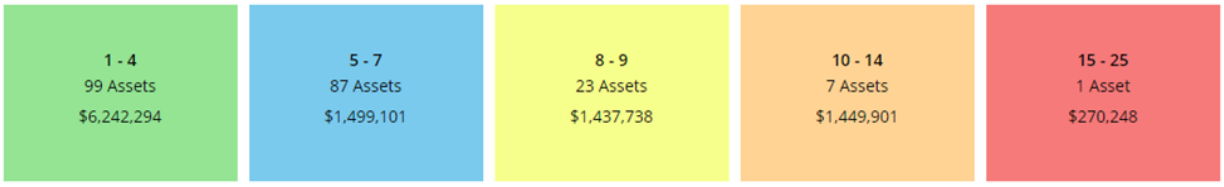


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

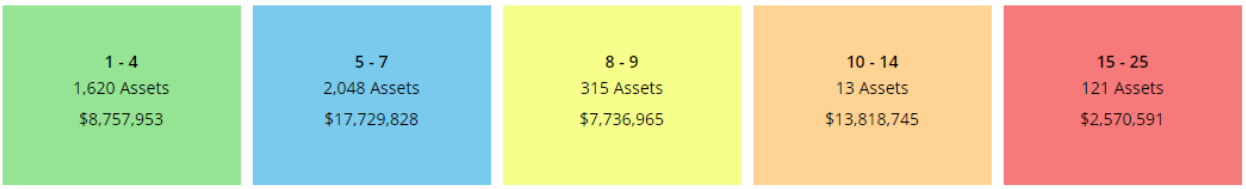
5.1.5 Risk & Criticality

The following risk ratings provides a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.

Water Buildings (by components) – Pumping Stations and Water Treatment Plant



Other Segments – Hydrants, Valves, Service Leads, Water Equipment, Water Meters, Watermains



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Critical Assets

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

5.1.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service (2023)
Scope	Description, which may include maps, of the user groups or areas of the municipality that	See Appendix B

	are connected to the municipal water system	
	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	Maintenance and rehabilitation of our water systems can lead to temporary disruptions. The length of the interruption would depend on the nature of the maintenance or rehabilitation. Water main breaks may require several blocks to be turned off during the time of repair, approximately 4-8 hours, and sufficient notice is provided to all directly affected. Water hydrant flushing will cause pressure drop in areas and could lead to colour changes in the water. Valve exercising program can lead to short events of low flow or no flow lasting 1-3 minutes.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of properties connected to the municipal water system % of properties where fire flow is available	54% 100 %
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	0.0

	# 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	0.0
Performance	Capital reinvestment rate	

5.1.7 AMP Development Plan

Asset Inventory/Data Refinement

- **Review Replacement Costs –** Unit costs have been reviewed and applied to all linear water infrastructure. Non-linear infrastructure such as equipment rely on the inflation of historical costs. The Water Treatment Plant building and Pumping Stations were broken down into component assets during the building condition assessment project in 2023, which included estimated replacement costs. These costs will be reviewed annually and updated according to the best available information on the cost to replace the asset in today's value.

Lifecycle Management Strategies

- **Long-Term Capital Plan / Asset Condition Assessments** - Similar to other sub-surface infrastructure, most of the Water Network was built around the same time (1970 and 1980s). Some of this infrastructure, such as hydrants, are reaching the end of their service life, and assessments by Water & Sewer staff are completed annually to determine the full extent of capital requirements. To ensure that money is available to meet future replacement requirements, a long-term capital plan was developed and plans to update the plan have been identified.

Levels of Service

- **Measure Current Levels of Service** – This AMP contains a basic measurement of the Municipality's current level of service according to the metrics established in O. Reg. 588/17. Staff will continue to measure the current level of service according to these metrics to allow for trend analysis that informs long-term planning.
- **Identify Additional LOS Metrics** – Staff may identify additional LOS metrics that would inform both short and long-term asset management planning. See Appendix E for examples.

- **Identify Proposed Levels of Service** – Staff will work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

5.2 Sanitary Sewer Network

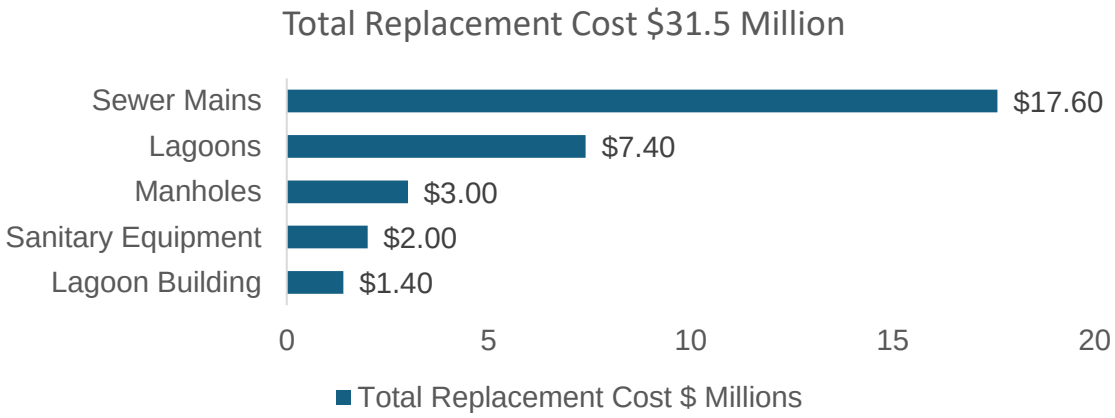
The Municipality of Wawa operates and maintains a sanitary sewer network including a wastewater collection system (20 km of sewer mains) consisting of primarily gravity mains and a handful of force mains. The Sewage Treatment Plant was constructed in 1988 and is a Class 1 plant which consists of 2 aeration ponds that are used for primary treatment.

The Sanitary Sewer Network is operated and maintained throughout the year by the Infrastructure Services Department.

5.2.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Municipality's Sanitary Sewer Network inventory.

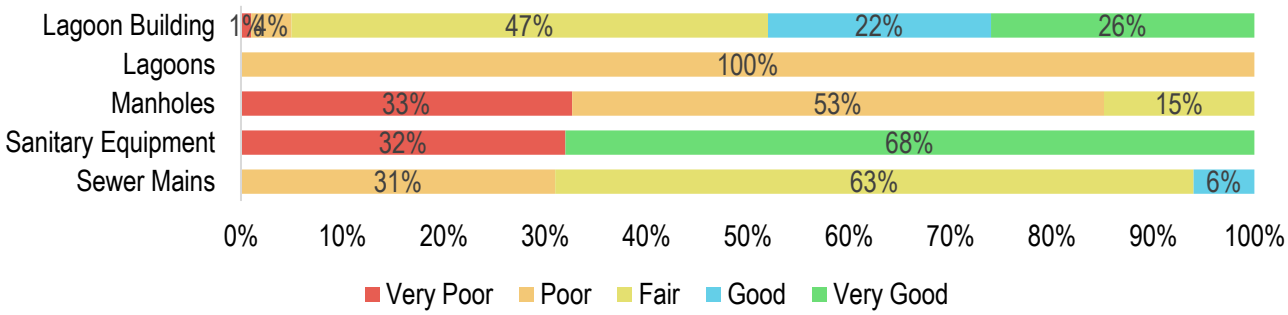
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Lagoon Building	1	Cost/Unit	$1,444,925
Lagoons	2	CPI Tables	$7,406,463
Manholes	252	Cost/Unit	$2,960,244
Sanitary Sewer Equipment	3	CPI Tables	$1,993,032
Sewer Mains	20,345 metres	Cost/Unit	$17,653,179
Total			**$31,457,843**



5.2.2 Asset Condition

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.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Lagoon Building	54%	Fair	100% Assessed
Lagoons	36%	Poor	Age-based
Manholes	30%	Poor	Age-based
Sanitary Sewer Equipment	61%	Good	Age-based
Sewer Mains	44%	Fair	Age-based
Total	**43%**	**Fair**	**5% Assessed**



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

Current Approach to Condition Assessment

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

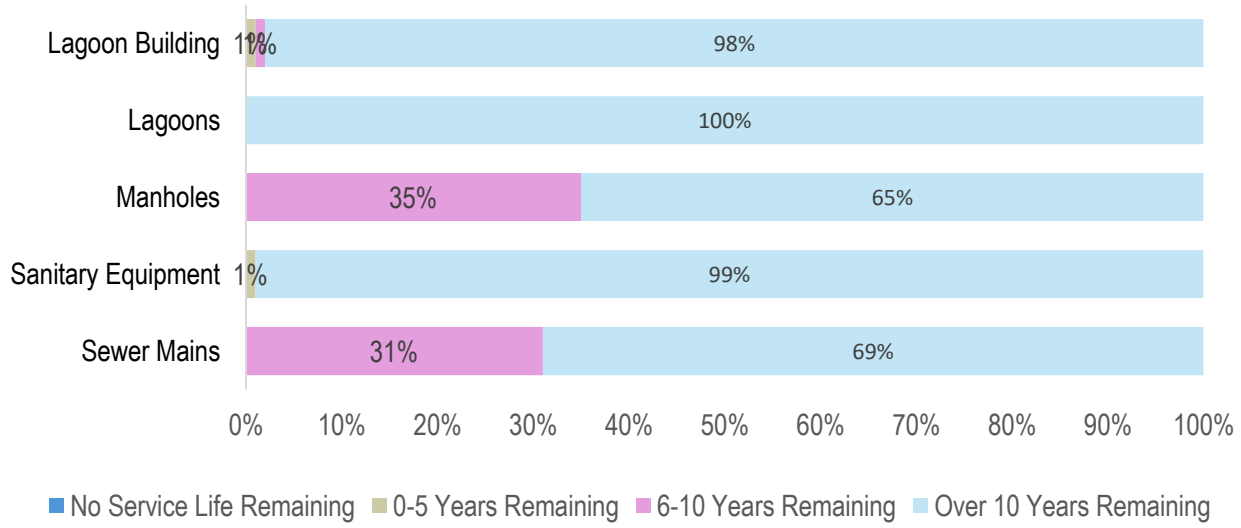
- CCTV inspections are completed on a case-by-case basis for sanitary laterals
- Similar to stormwater infrastructure, underground inspections are typically completed in coordination with ongoing construction projects
- Financial and time constraints prevent a more network-wide approach to assessment at this time
- Plans are in place to conduct a third-party assessment of sanitary mains and maintenance holes

5.2.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Sanitary Sewer Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Service Life Remaining (Years)
Lagoon Building	10 - 75 Years	26.1	23.0
Lagoons	20 - 50 Years	32.0	18.0
Manholes	60 Years	41.9	18.1
Sanitary Sewer Equipment	20 Years	11.8	8.2
Sewer Mains	75 Years	41.1	33.9
Total		**41.1**	**26.7**



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

5.2.4 Lifecycle Management Strategy

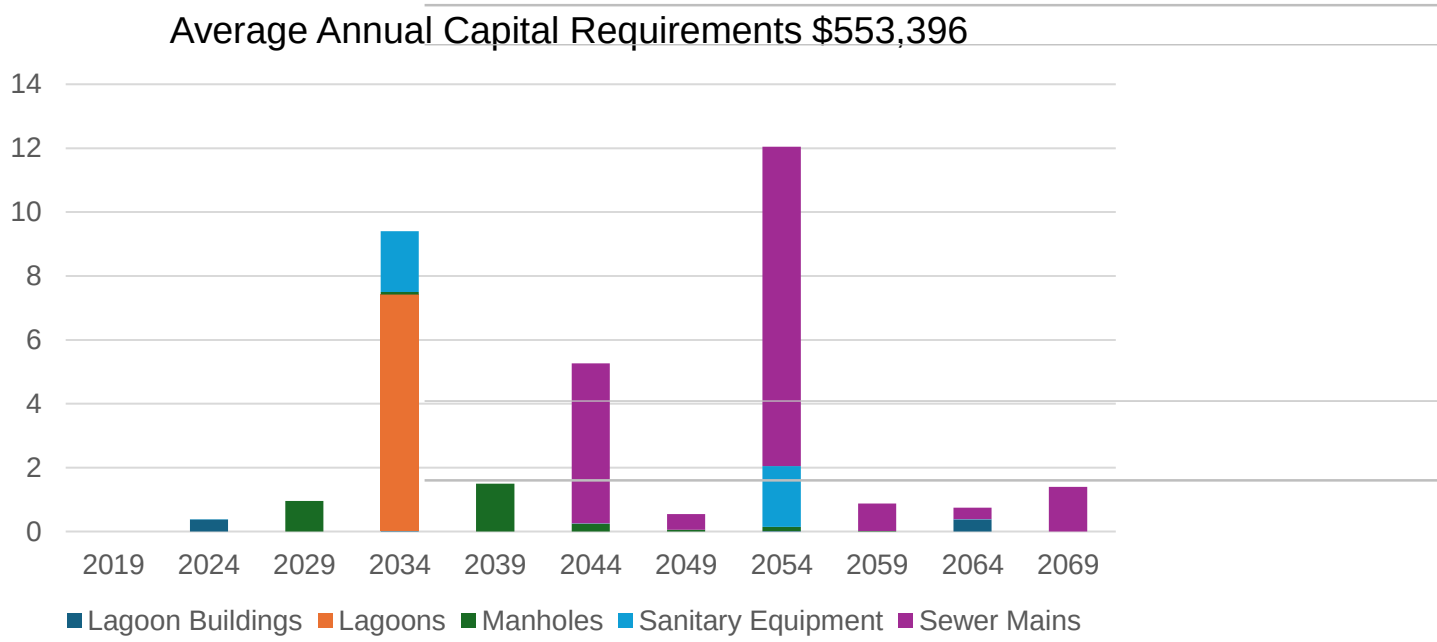
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance	O&M strategy is primarily reactive and based on issue identification (blockages etc.) Sanitary sewers are flushed as often as possible to maintain operational capacity WWTP was upgraded in 2016 (reduction in hydro costs); lagoon facility; sludge survey completed every 5 years; plant itself is fairly low maintenance compared to WTP
Replacement	In 2016, the aeration system was re-done at the lagoon; portion of Toronto Ave has been reconstructed over the past couple of years Future replacements will be coordinated with road/water projects

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Municipality should allocate towards funding rehabilitation and replacement needs.

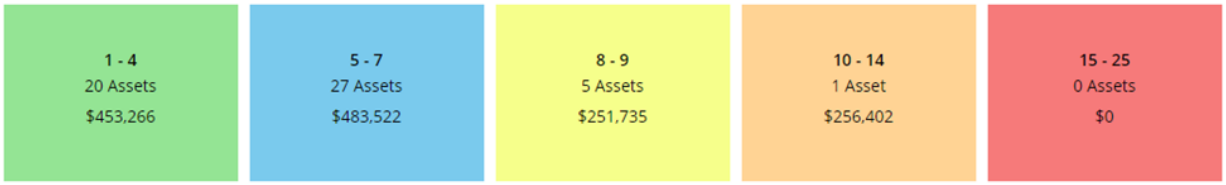


The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

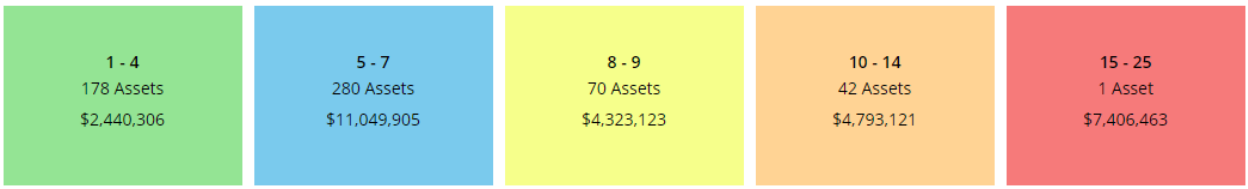
5.2.5 Risk & Criticality

The following risk ratings provide a visual representation of the degree of risk associated with the assets within this asset category. See Appendix C for the criteria used to determine the risk rating of each asset.

Sewage Lagoon Building (by components)



Other Segments – Lagoons, Manholes, Sanitary Equipment, Sewer Mains



The above risk rating provides a high-level overview of the level of risk present according to the criteria outlined in Appendix C. A high-level risk model was developed for the purposes of the previous AMP which is relevant and ongoing in this AMP. The Municipal team will periodically review and adjust the risk model to reflect an evolving understanding of both the probability and consequences of asset failure.

Critical Assets

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

5.2.6 Levels of Service

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

Community Levels of Service

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

Service Attribute	Qualitative Description	Current Level of Service
Scope	Description, which may include maps, of the of the user groups or	See Appendix B

	areas of the municipality that are connected to the municipal wastewater system	
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	No 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	No combined sewers
	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter into sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g. weeping tiles).
		In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its designed capacity. In some cases, this can cause water and/or sewage to overflow backup into homes.
		The disconnection of weeping tiles from sanitary mains and the use of sump pumps and pits directing storm water to the storm drain system can help to reduce the chance of this occurring.
	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration	The municipality follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers. These standards have been determined with consideration of the minimization of sewage overflows and backups.
	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.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Scope	% of properties connected to the municipal wastewater system	50%
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	0
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0
Performance	Capital reinvestment rate	0.25%

5.2.7 AMP Development Plan

Asset Inventory/Data Refinement

- **Review Replacement Costs –** Unit costs have been reviewed and applied to all linear sanitary infrastructure. Non-linear infrastructure, including lagoons and equipment, rely on the inflation of historical costs. The lagoon building was componentized during the building condition assessment in 2023, which included estimated replacement costs of components. These costs will be reviewed annually and updated according to the best available information on the cost to replace the asset in today's value.

Lifecycle Management Strategies

- **Long-term Capital Plan** - Similar to other sub-surface infrastructure, most of the Sanitary Sewer Network was built around the same time (1970s). While capital costs are expected to be minimal in the short-term, within 20-40 years significant capital costs are

projected for the rehabilitation and/or replacement of sanitary infrastructure. To ensure that money is available to meet future replacement requirements, a long-term capital plan was developed and plans to update the plan have been identified.

Levels of Service

- **Measure Current Levels of Service** – This AMP contains a basic measurement of the Municipality's current level of service according to the metrics established in O. Reg. 588/17. Staff will continue to measure the current level of service according to these metrics to allow for trend analysis that informs long-term planning.

- **Identify Additional LOS Metrics** – Staff may identify additional LOS metrics that would inform both short and long-term asset management planning. See Appendix E for examples.

- **Identify Proposed Levels of Service** – Staff will work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service

6 Impacts of Growth

Key Insights

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

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

6.1 Description of Growth Assumptions

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

6.1.1 Census Profile – Population / Households / Employment

The following table outlines trends in population, private dwellings and employment over the last three census periods:

	2006	2011	2016	Net Change (2006-2016)
Population				
Total Population	3,204	2,975	2,905	**-299**
Households				
Private Dwellings	1,453	1,310	1,279	**-174**
Employment				
Participation Rate	64.4%	66.1%	61.9%	**-2.5%**
Employment Rate	60.2%	60.8%	58.0%	**-2.2%**
Unemployment Rate	6.6%	8.0%	6.3%	**-0.3%**

6.2 Impact of Growth on Lifecycle Activities

By July 1, 2025, the Municipality'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. As growth-related assets are constructed or acquired, they should be integrated into the Municipality's AMP. While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the Municipality will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to, at a minimum, maintain the current level of service.

7 Financial Strategy

Key Insights

The Municipality is committing money towards capital projects annually through the capital budget.

This section is to be updated in 2025 as per the regulation.

7.1 Financial Strategy Overview

The updating of the financial strategy will be completed in 2025 as per the requirements of the regulation. In addition, an updated 10 Year Financial Plan will provide further meaningful input. The current strategy as outlined in the sections below will remain the governing guideline in the interim.

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 Municipality of Wawa to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

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

1. The financial requirements for:
    a. Existing assets
    b. Existing service levels
    c. Requirements of contemplated changes in service levels (none identified for this plan)
    d. Requirements of anticipated growth (none identified for this plan)

2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Reserves
    d. Debt
    e. Development charges

3. Use of non-traditional sources of municipal funds:
    a. Reallocated budgets
    b. Partnerships
    c. Procurement methods

4. Use of Senior Government Funds:
    a. Gas tax
    b. Annual grants

Note: Periodic grants are normally not included due to Provincial requirements for firm

commitments. However, if moving a specific project forward is wholly dependent on receiving a one-time grant, the replacement cost included in the financial strategy is the net of such grant being received.

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

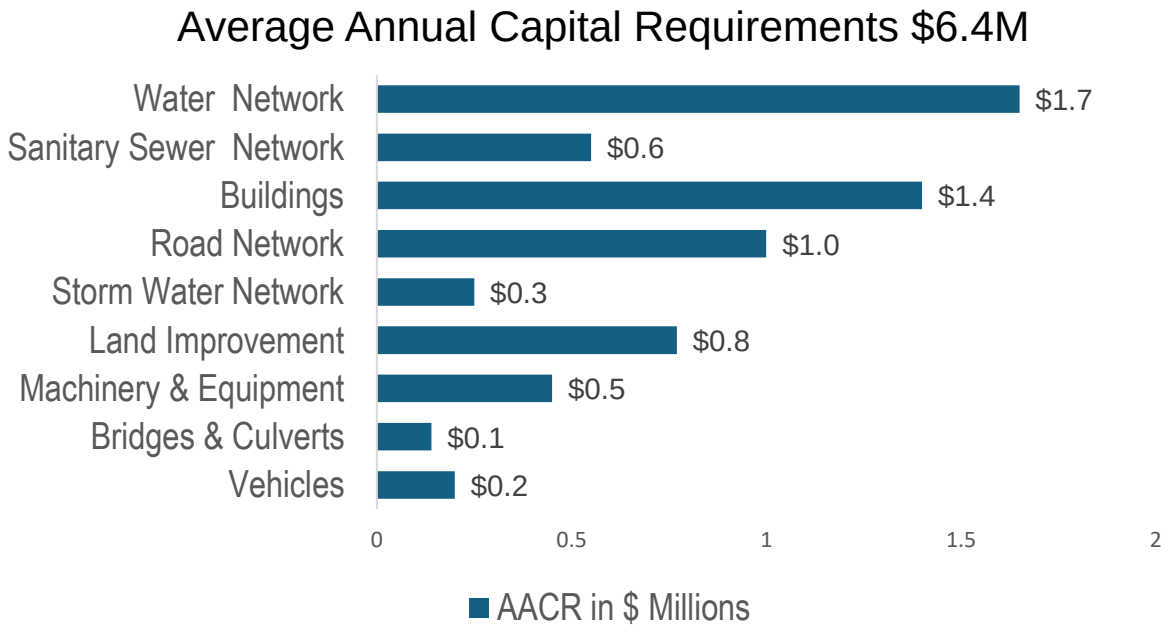
1. To reduce financial requirements, consideration has been given to revising service levels downward.

2. All asset management and financial strategies have been considered. For example:
    a. If a zero-debt policy is in place, is it warranted? If not the use of debt should be considered.
    b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered

7.1.1 Annual Requirements & Capital Funding

Annual Requirements

The annual requirements represent the amount the Municipality should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Municipality must allocate approximately $3.9 million annually to address capital requirements for the assets included in this AMP.



For most asset categories the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset.

However, for the Road Network, lifecycle management strategies have been developed to identify capital cost savings that are realized through strategic rehabilitation and renewal. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table compares two scenarios for the Road Network:

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 replace is required.

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of $63,000 for the Road Network. This represents an overall reduction of the annual requirements for each category by 18%. As the lifecycle strategy scenario represents the lowest cost option available to the Municipality, we have used these annual requirements in the development of the financial strategy.

Annual Funding Available

Based on a historical analysis of capital funding sources, the Municipality is committing approximately $1.1 million towards capital projects per year from sustainable revenue sources. Given the annual capital requirement of $6.4 million.

7.2 Funding Objective

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

1. **Tax Funded Assets:** Bridges & Culverts, Road Network, Stormwater Network, Buildings & Facilities, Machinery & Equipment, Land Improvements, Vehicles
2. **Rate-Funded Assets:** Water Network, Sanitary Sewer Network

Note: For the purposes of this AMP, we have excluded gravel roads since they are a perpetual maintenance asset and end of life replacement calculations do not normally apply. If gravel roads are maintained properly, they can theoretically have a limitless service life.

For each scenario developed we have included strategies, where applicable, regarding the use of cost containment and funding opportunities.

7.3 Financial Profile: Tax Funded Assets

7.3.1 Current Funding Position

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

Asset Category	Annual Requirement	Average Annual Funding Available				
		Taxes	Gas Tax & OCIF	Other	Total Available	Annual Deficit
Road Network	285,000	40,000	74,000	0	114,000	171,000
Storm Water Network	175,000	25,000	22,000	0	47,000	128,000
Bridges & Culverts	99,000	14,000	0	0	14,000	85,000
Buildings & Facilities	587,000	82,000,	77,000	23,000	182,000	405,000
Machinery & Equipment	466,000	65,000	62,000	10,000	137,000	329,000
Land Improvements	440,000	62,000	0	20,000	82,000	358,000
Vehicles	185,000	26,000	9,000	10,000	45,000	140,000
	2,237,000	**314,000**	**244,000**	**63,000**	**621,000**	**1,616,000**

The average annual investment requirement for all categories is $2,237,000. Annual revenue currently allocated to these assets for capital purposes is $621,000 leaving an annual deficit of $1,616,000. Put differently, these infrastructure categories are currently funded at 28% of their long term requirements

7.3.2 Full Funding Requirements

In 2020, Municipality of Wawa has annual tax revenues of $4,941,000. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Road Network	3.5%
Storm Water Network	2.6%
Bridges & Culverts	1.7%
Buildings & Facilities	8.2%
Machinery & Equipment	6.7%.
Land Improvements	7.2%
Vehicles	2.8%

Other	0.0%
	32.7%

The following changes in costs and/or revenues over the next number of years should also be considered in the financial strategy:

a) Wawa's debt payments for these asset categories will be increasing by $91,000 over the next 5 years and decreasing by $152,000 over the next 10 years. Although not shown in the table, debt payment decreases will be $152,000 and $152,000 over the next 15 and 20 years respectively.

Our recommendations include capturing the above changes and allocating them to the infrastructure deficit outlined above. The table below outlines this concept and presents several options:

	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	1,616,000	1,616,000	1,616,000	1,616,000	1,616,000	1,616,000	1,616,000	1,616,000
Change in Debt Costs	N/A	N/A	N/A	N/A	91,000	-152,000	-152,000	-152,000
Resulting Infrastructure Deficit:	**1,616,000**	**1,616,000**	**1,616,000**	**1,616,000**	**1,707,000**	**1,464,000**	**1,464,000**	**1,464,000**
Tax Increase Required	32.7%	32.7%	32.7%	32.7%	34.5%	29.6%	29.6%	29.6%
Annually:	**6.5%**	**3.3%**	**2.2%**	**1.6%**	**6.9%**	**3.0%**	**2.0%**	**1.5%**

7.3.3 Financial Strategy Recommendations

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

a) when realized, reallocating the debt cost reductions of $152,000 to the infrastructure deficit as outlined above.
b) increasing tax revenues by 1.5% each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
c) allocating the current gas tax, OCIF & other revenue as outlined previously.

d) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment. The Municipality should take advantage of all available grant funding programs and transfers from other levels of government. While OCIF has historically been considered a sustainable source of funding, the program is currently undergoing review by the provincial government. Depending on the outcome of this review, there may be changes that impact its availability.

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 achieves full funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand $151,000 for the Buildings & Facilities, $652,000 for Machinery & Equipment, $245,000 for Vehicles, and $12,000 for Land Improvements.

Prioritizing future projects will require the current data to be replaced by condition-based data. Although our recommendations include no further use of debt, the results of the condition-based analysis may require otherwise.

7.4 Financial Profile: Rate Funded Assets

7.4.1 Current Funding Position

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

Asset Category	Avg. Annual Requirement	Annual Funding Available				
		Rates	To Operations	OCIF	Total Available	Annual Deficit
Water Network	1,201,000	826,000	-575,000	154,000	405,000	796,000
Sanitary Sewer Network	440,000	611,000	-611,000	57,000	57,000	383,000
	1,641,000	**1,437,000**	**-1,186,000**	**211,000**	**462,000**	**1,179,000**

The average annual investment requirement for the above categories is $1,641,000. Annual revenue currently allocated to these assets for capital purposes is $462,000 leaving an annual deficit of $1,179,000. Put differently, these infrastructure categories are currently funded at 28% of their long-term requirements.

7.4.2 Full Funding Requirements

In 2020, Wawa had annual sanitary revenues of $611,000 and annual water revenues of $826,000. As illustrated in the table below, without consideration of any other sources of revenue, full funding would require the following changes over time:

Asset Category	Tax Change Required for Full Funding
Water Network	96.4%
Sanitary Sewer Network	62.7%

Through the following table, we have expanded the above scenario to present multiple options. Due to the significant increases required, we have provided phase-in options of up to 20 years.

	Water Network				Sanitary Sewer Network			
	5 Yrs	10 Yrs	15 Yrs	20 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs
Rate Increase Required	96.4%	96.4%	96.4%	96.4%	62.7%	62.7%	62.7%	62.7%
Annually:	**19.3%**	**9.6%**	**6.4%**	**4.8%**	**12.5%**	**6.3%**	**4.2%**	**3.1%**

7.4.3 Financial Strategy Recommendations

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

a) increasing rate revenues by 3.1% for sanitary services and 4.8% for water services each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.

b) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. This periodic funding should not be incorporated into an AMP unless there are firm commitments in place.

2. We realize that raising rate revenues for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

3. Any increase in rates required for operations would be in addition to the above recommendations.

Although this option achieves full funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of $1,464,000 for the Water Network and $795,000 for the Sanitary Sewer Network.

Prioritizing future projects will require the current data to be replaced by condition-based data. Although our recommendations include no further use of debt, the results of the condition-based analysis may require otherwise.

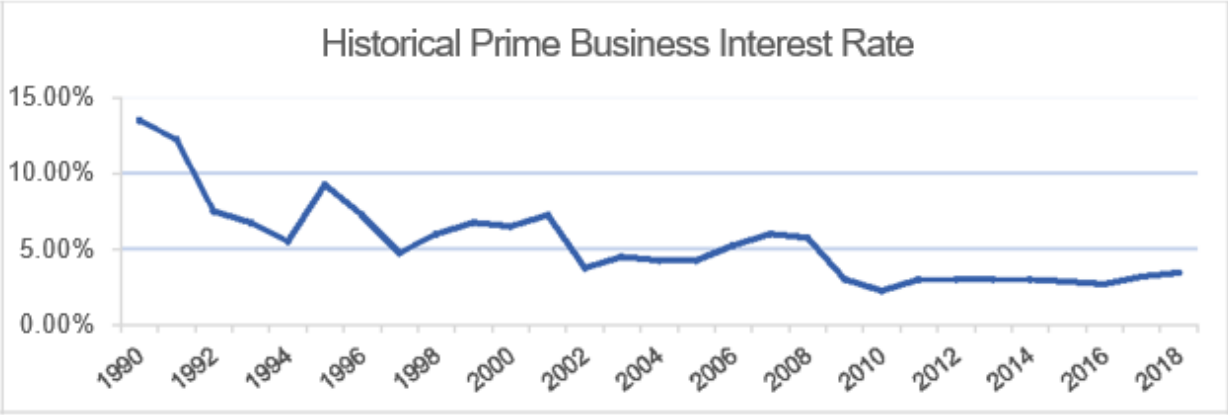
7.5 Use of Debt

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a $1M project financed at 3.0%[11] over 15 years would result in a 26% premium or $260,000 of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

Interest Rate	Number of Years Finance					
	5	10	15	20	25	30
7.0%	22%	42%	65%	89%	115%	142%
6.5%	20%	39%	60%	82%	105%	130%

6.0%	19%	36%	54%	74%	96%	118%
5.5%	17%	33%	49%	67%	86%	106%
5.0%	15%	30%	45%	60%	77%	95%
4.5%	14%	26%	40%	54%	69%	84%
4.0%	12%	23%	35%	47%	60%	73%
3.5%	11%	20%	30%	41%	52%	63%
3.0%	9%	17%	26%	34%	44%	53%
2.5%	8%	14%	21%	28%	36%	43%
2.0%	6%	11%	17%	22%	28%	34%
1.5%	5%	8%	12%	16%	21%	25%
1.0%	3%	6%	8%	11%	14%	16%
0.5%	2%	3%	4%	5%	7%	8%
0.0%	0%	0%	0%	0%	0%	0%

It should be noted that current interest rates are near all-time lows. Sustainable funding models that include debt need to incorporate the risk of rising interest rates. The following graph shows where historical lending rates have been:



2020 municipal Infrastructure Ontario rates for 15-year money was 3.2%.

A change in 15-year rates from 3% to 6% would change the premium from 26% to 54%. Such a change would have a significant impact on a financial plan.

The following tables outline how Wawa has historically used debt for investing in the asset categories as listed. There is currently $4,134,000 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $309,000, well within its provincially prescribed maximum of $2,589,000.

Asset Category	Current Debt	Use of Debt in the Last Five Years				
	Outstanding	2015	2016	2017	2018	2019
Road Network	162,000	0	0	0	0	0

Storm Water Network	0	0	0	0	0	0
Bridges & Culverts	0	0	0	0	0	0
Buildings & Facilities	1,610,000	0	0	0	0	0
Machinery & Equipment	89,000	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total Tax Funded:	**2,273,000**	**0**	**0**	**0**	**0**	**0**
Water Network	2,273,000	0	0	0	0	0
Sanitary Sewer Network	0	0	0	0	0	0
Total Rate Funded:	**2,273,000**	**0**	**0**	**0**	**0**	**0**

Asset Category	Use of Debt in the Last Five Years						
	2020	2021	2022	2023	2024	2025	2030
Road Network	31,000	31,000	31,000	31,000	31,000	31,000	0
Storm Water Network	0	0	0	0	0	0	0
Bridges & Culverts	0	0	0	0	0	0	0
Buildings & Facilities	80,000	212,000	212,000	212,000	212,000	212,000	0
Machinery & Equipment	41,000	41,000	4,000	4,000	2,000	0	0
Land Improvements	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Total Tax Funded:	**152,000**	**284,000**	**0**	**0**	**0**	**0**	**0**
Water Network	157,000	157,000	157,000	157,000	157,000	157,000	157,000
Sanitary Sewer Network	0	0	0	0	0	0	0
Total Rate Funded:	**157,000**	**157,000**	**157,000**	**157,000**	**157,000**	**157,000**	**157,000**

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

7.6 Use of Reserves

7.6.1 Available Reserves

Reserves play a critical role in long-term financial planning. The benefits of having reserves available for infrastructure planning include:

a) the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
b) financing one-time or short-term investments
c) accumulating the funding for significant future infrastructure investments
d) managing the use of debt
e) normalizing infrastructure funding requirements

By asset category, the table below outlines the details of the reserves currently available to the Municipality.

Asset Category	Balance at December 31, 2019
Road Network	435,000
Storm Water Network	362,000
Bridges & Culverts	381,000
Buildings & Facilities	784,000
Machinery & Equipment	1,093,000
Land Improvements	459,000
Vehicles	651,000
Other	0
Total Tax Funded:	**4,165,000**
Water Network	802,000
Sanitary Sewer Network	464,000
Total Rate Funded:	**1,266,000**

There is considerable debate in the municipal sector as to the appropriate level of reserves that a Municipality should have on hand. There is no clear guideline that has gained wide acceptance. Factors that municipalities should take into account 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

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 Wawa's judicious use of debt in the past, allows the scenarios to assume that, if required, available reserves and debt capacity can be used for high priority and emergency infrastructure investments in the short- to medium-term.

7.6.2 Recommendation

In 2024, Ontario Regulation 588/17 will require Wawa to integrate proposed levels of service for all asset categories in its asset management plan update. We recommend that future planning should reflect adjustments to service levels and their impacts o reserve balances.

8 Appendices

Key Insights

Appendix A identifies projected 10-year capital requirements for each asset category

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

Appendix C identifies the criteria used to calculate risk for each asset category

Appendix D provides the Condition Assessment Implementation Strategy

Appendix E provides examples of key performance indicators that may be considered in the development of a levels of service framework

Appendix A: 10-Year Capital Requirement

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

Road Network											
Asset Segment	Backlog	Event Cost	2025	2026	2027	2028	2029	2030	2031	2032	2033
Paved Roads	$0	$1,015,648	$0	$0	$0	$150,699	$0	$0	$128,376	$651,157	$85,416
Unpaved Roads	$8,672,319	$10,137,434	$0	$0	$0	$0	$316,676	$0	$0	$1,148,439	$0
Streetlights	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$8,672,319	$11,153,082	$0	$0	$0	$150,699	$316,676	$0	$128,376	$1,799,596	$85,416

Bridges & Culverts											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Bridges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Culverts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Storm Water Network											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Catch Basin Leads	$0	$0	$0	$0	$0	$0	$0	$0	$41,574	$1,216,363	$0
Catch Basins	$0	$0	$0	$0	$0	$0	$0	$0	$108,927	$2,626,351	$0
Culverts	$0	$0	$0	$0	$0	$0	$30,819	$0	$0	$0	$0
Manholes	$0	$0	$0	$0	$0	$0	$0	$0	$11,747	$1,010,242	$0
Storm Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$30,819	$0	$162,248	$4,852,956	$0

Buildings											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Airport Buildings	$0	$102,742	$52,530	$46,974	$103,484	$23,178	$0	$242,279	$107,689	$6,154	$604,390
Community Centre	$0	$1,532,074	$501,523	$557,543	$0	$2,104,802	$0	$697,305	$457,933	$41,024	$209,633
Fire Hall	$0	$264,825	$0	$49,537	$53,460	$10,359	$0	$35,076	$0	$1,795	$88,000
Marina Facilities	$0	$7,590	$5,989	$14,338	$0	$0	$0	$5,128	$0	$0	$0
Miscellaneous Buildings	$0	$522,899	$224,726	$264,534	$73,002	$87,311	$95,381	$299,497	$301,477	$10,512	$200,397
Municipal Building	$0	$779,659	$267,996	$23,076	$2,513	$126,149	$13,332	$311,161	$33,845	$0	$281,407
Public Works Buildings	$3,077	$707,520	$23,999	$258,100	$0	$52,942	$0	$205,143	$53,935	$0	$215,428
Tourist Information Centre	$0	$47,681	$6,667	$134,354	$41,065	$2,923	$149,257	$16,409	$5,384	$0	$21,537
	$3,077	$3,964,990	$1,083,430	$1,348,456	$273,524	$2,407,664	$257,970	$1,811,998	$960,263	$59,485	$1,620,792

Appendix A: 10-Year Capital Requirement

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

Machinery & Equipment											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Environmental Services	$0	$0	$0	$2,719	$0	$0	$0	$0	$243,243	$0	$167,720
General Government	$48,353	$58,880	$46,374	$135,563	$29,483	$15,979	$104,190	$47,843	$143,693	$26,440	$17,448
Protection Services	$0	$0	$0	$20,542	$0	$0	$150,255	$0	$2,719	$0	$0
Recreation Services	$80,979	$89,934	$76,094	$17,301	$51,743	$22,462	$44,191	$135,411	$218,594	$13,853	$141,701
Transportation Services	$320,328	$173,613	$0	$15,808	$214,685	$179,550	$0	$951,174	$250,782	$11,686	$17,723
	$449,660	$322,427	$122,468	$191,933	$295,911	$217,991	$298,636	$1,134,428	$859,031	$51,979	$344,592

Vehicles											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Buses	$0	$0	$0	$0	$0	$0	$94,743	$0	$0	$0	$0
Heavy Trucks	$0	$155,953	$0	$0	$0	$232,097	$330,484	$0	$0	$0	$0
Pumpers	$0	$281,292	$0	$0	$358,870	$0	$0	$0	$0	$0	$0
SUV	$0	$0	$0	$0	$0	$33,852	$0	$0	$0	$0	$33,852
Trailers	$0	$14,177	$0	$0	$0	$0	$0	$0	$0	$0	$0
Trucks	$0	$43,197	$43,194	$0	$106,389	$411,075	$0	$0	$43,197	$0	$0
	$0	$494,619	$43,194	$0	$465,259	$677,024	$425,227	$0	$43,197	$0	$33,852

Land Improvements											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Airport	$0	$0	$0	$828,739	$0	$0	$0	$0	$0	$0	$7,520,758
Beach Improvements	$0	$283,700	$0	$376,062	$0	$268,017	$0	$154,220	$0	$0	$268,017
Cemetery	$0	$0	$0	$0	$78,763	$0	$0	$0	$0	$0	$0
Industrial Park	$0	$544,108	$0	$0	$0	$0	$0	$0	$0	$0	$0
Landscaping	$0	$0	$0	$0	$0	$0	$13,732	$0	$0	$0	$0
Parking Lots	$0	$0	$0	$0	$0	$20,181	$0	$0	$0	$0	$0
Playground Equipment	$0	$68,834	$70,056	$0	$0	$0	$0	$0	$0	$0	$32,485
Recreation	$0	$0	$0	$0	$0	$0	$0	$0	$16,556	$0	$0
	$0	$896,642	$70,056	$1,204,801	$78,763	$288,198	$13,732	$154,220	$16,556	$0	$7,821,260

Appendix A: 10-Year Capital Requirement

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

Water Network											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Hydrants	$934,080	$175,140	$0	$0	$70,056	$0	$46,704	$0	$0	$140,112	$0
Pumping Stations	$0	$110,458	$7,692	$8,718	$3,077	$820	$3,590	$27,180	$9,077	$0	$21,435
Service Leads	$0	$0	$0	$1,115	$0	$0	$0	$0	$0	$386,207	$0
Valves	$92,560	$117,480	$106,088	$51,620	$11,392	$5,696	$3,402,292	$0	$0	$0	$0
Water Equipment	$523,643	$0	$0	$89,014	$760,029	$0	$0	$1,057,439	$229,694	$0	$0
Water Meters	$0	$0	$0	$0	$0	$0	$0	$937,220	$0	$0	$0
Water Treatment Plant	$0	$28,332	$0	$0	$538,850	$0	$0	$15,230	$0	$743,355	$0
Watermains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$1,550,283	$431,410	$113,780	$150,467	$1,383,404	$6,516	$3,452,586	$2,037,069	$238,771	$1,269,674	$21,435

Sanitary Sewer Network											
Asset Segment	Backlog	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Lagoon Building	$0	$15,204	$2,821	$3,077	$0	$11,692	$0	$30,255	$0	$0	$20,897
Lagoons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Manholes	$0	$0	$0	$0	$0	$0	$0	$0	$58,735	$904,519	$0
Sanitary Sewer Equipment	$0	$0	$0	$0	$0	$10,049	$0	$0	$0	$0	$0
Sewer Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$15,204	$2,821	$3,077	$0	$21,741	$0	$30,255	$58,735	$904,519	$20,897

Appendix B: Level of Service Maps & Images

INSERT PDF PICTURES AND MAPS

Appendix B: Level of Service Maps & Images

Images of Bridge in Good Condition (Wawa Creek Bridge)

Municipality of Wawa
Wawa Creek Bridge

Site Photograph Photo No.: 1

Description
Structure approach - looking north. Note no snowplow markers on hazard signage.

Municipality of Wawa
Wawa Creek Bridge

Site Photograph Photo No.: 3

Description
Minor erosion of asphalt granular sealing at road shoulders.

Site Photograph Photo No.: 2

Description
Downstream façade of bridge.

Site Photograph Photo No.: 4

Description
Upstream façade.

Images of Culvert in Good Condition (Catfish Creek Culvert)

Municipality of Wawa
Catfish Creek Culvert

Site Photograph Photo No.: 1

Description
Structure approach - looking northeast. Note no snowplow markers on hazard signage.

Municipality of Wawa
Catfish Creek Culvert

Site Photograph Photo No.: 3

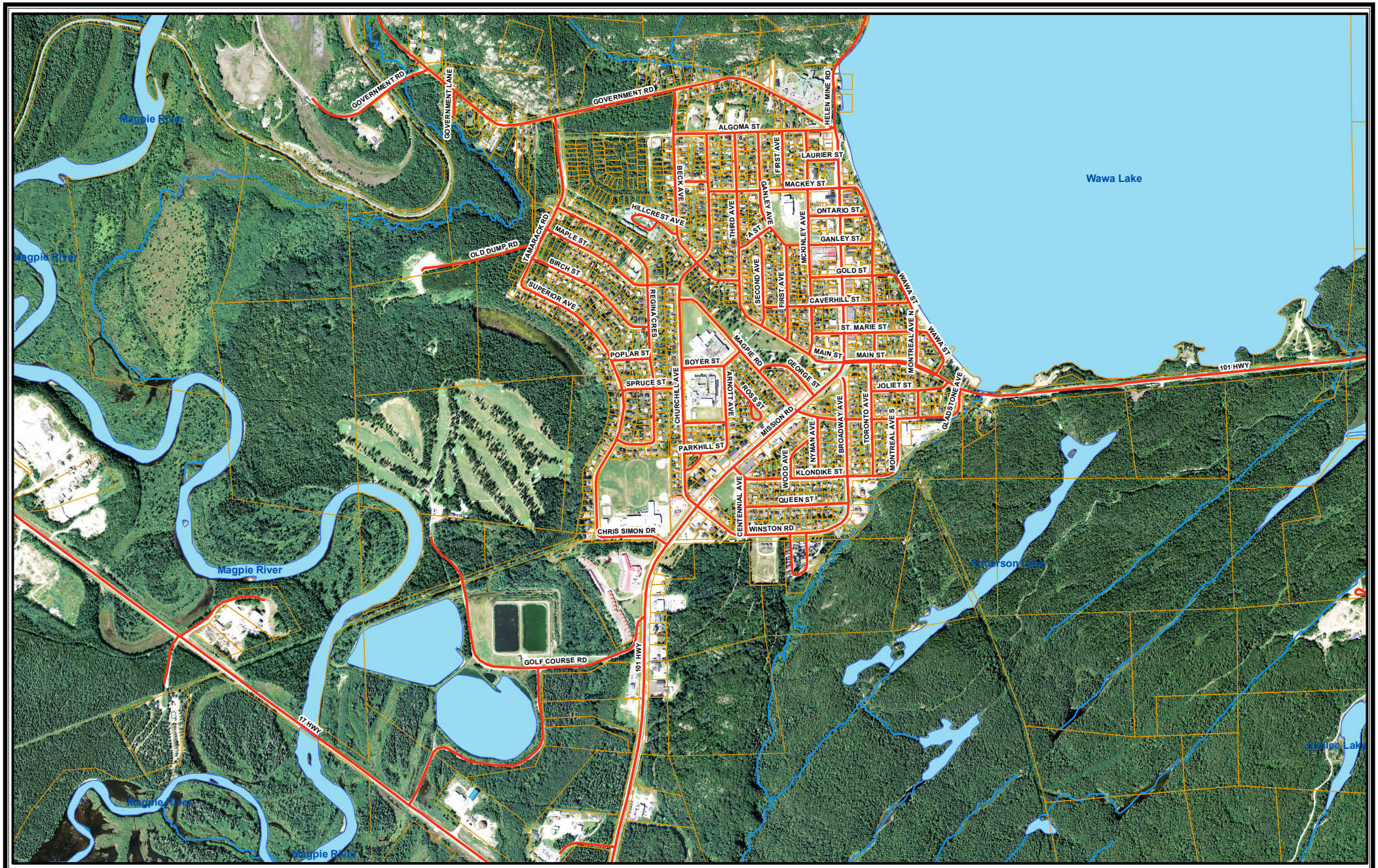
Description
Culvert outlet end - looking upstream

Site Photograph Photo No.: 2

Description
Structure approach - looking southwest.

Site Photograph Photo No.: 4

Description
Culvert inlet end - looking downstream.



Legend

- Roads
- Municipality of Wawa
- Lakes
- Rivers and Creeks

Wawa Road Network
Municipality of Wawa

0 135 270 540 810

Meters

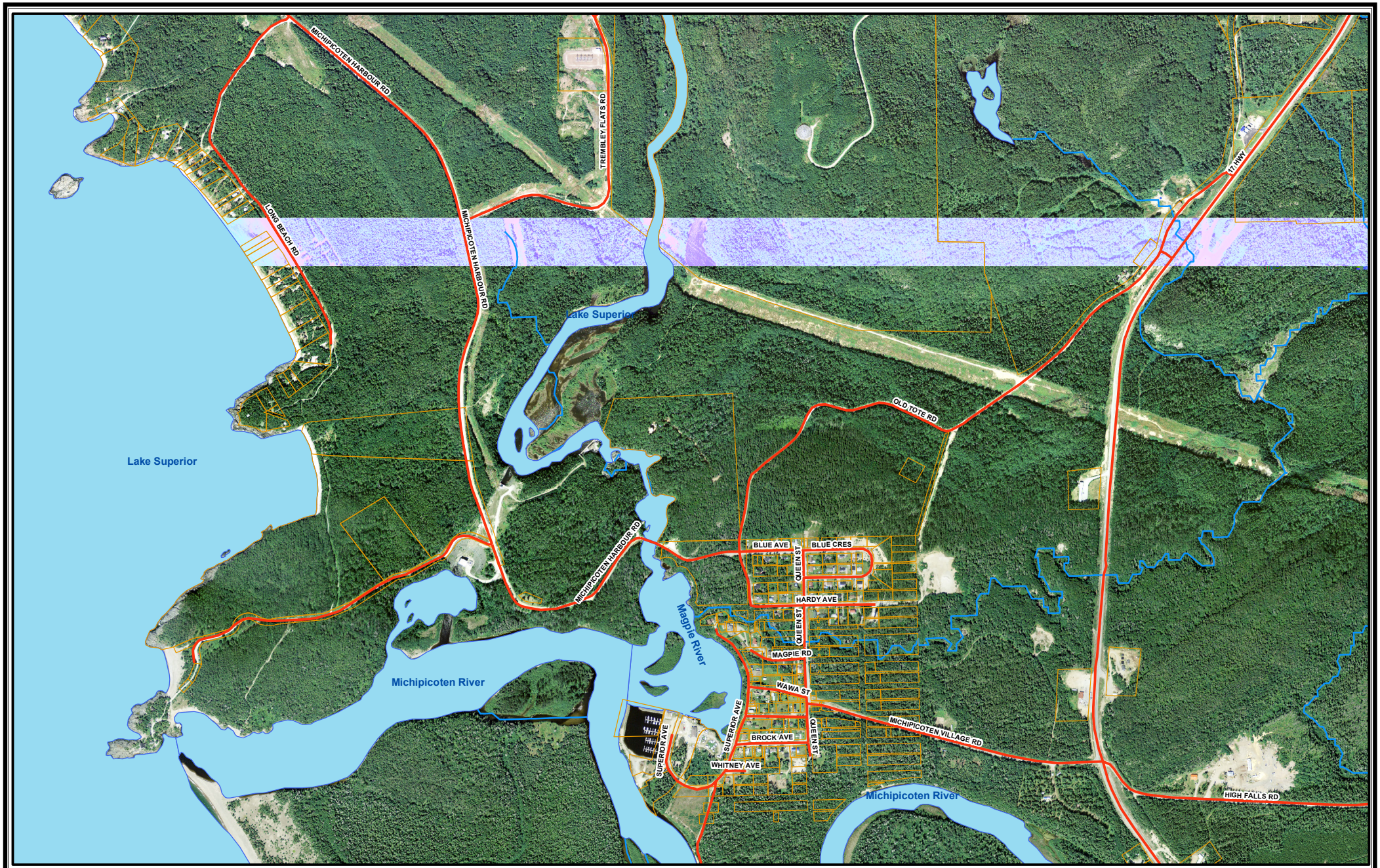
NITGC

NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S

Maps are provided as a courtesy only and the Municipality of Wawa makes no warranties as to the accuracy of this information. This map is not intended to be used for conveyance, authoritative definition of the legal boundary, or property title. This is not a survey product.

08/05/2020



Legend

- Roads
- Municipality of Wawa
- Lakes
- Rivers and Creeks

08/05/2020

Wawa Road Network
Michipicoten River Village
Municipality of Wawa

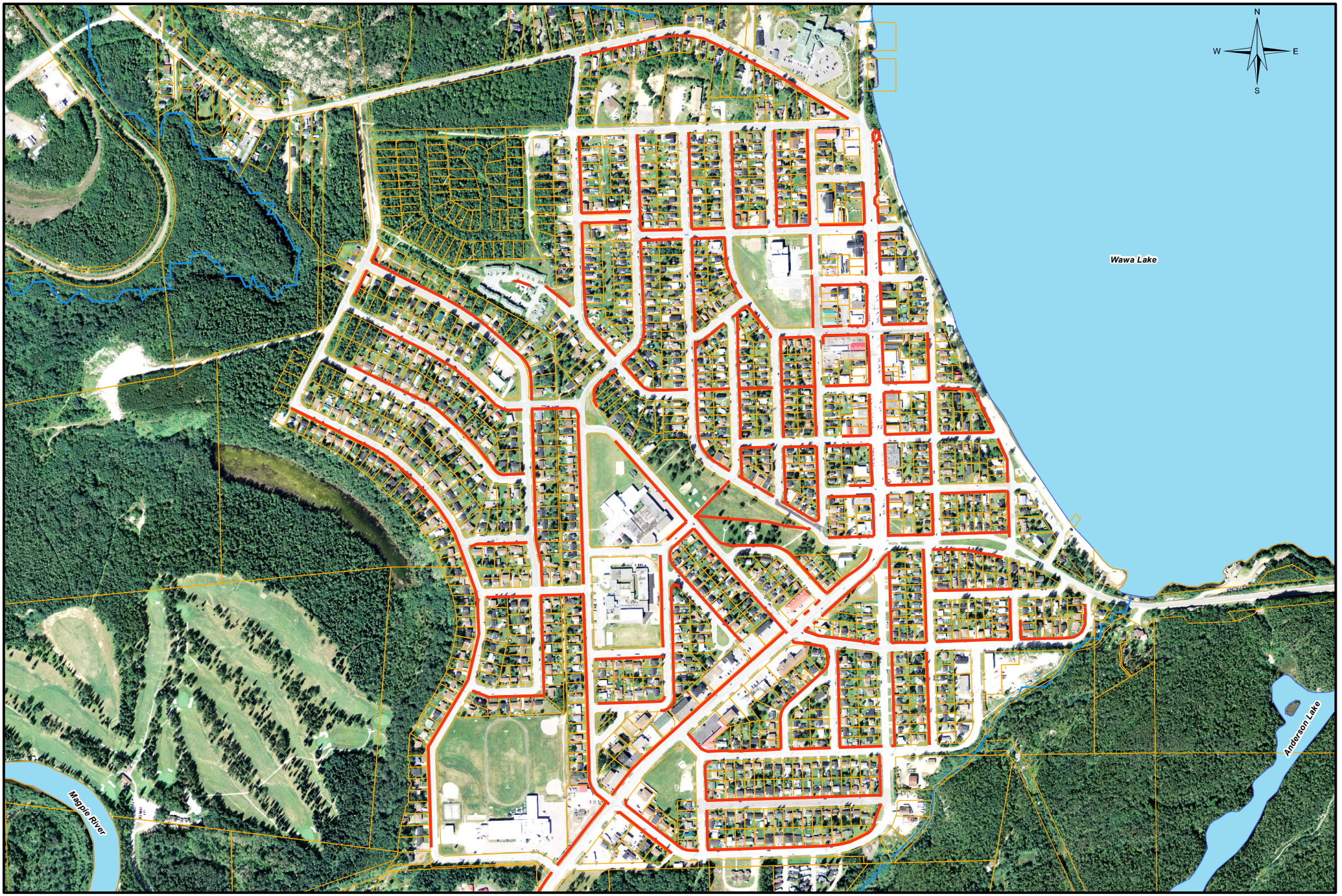
0 125 250 500 750

Meters

NITGC

NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S



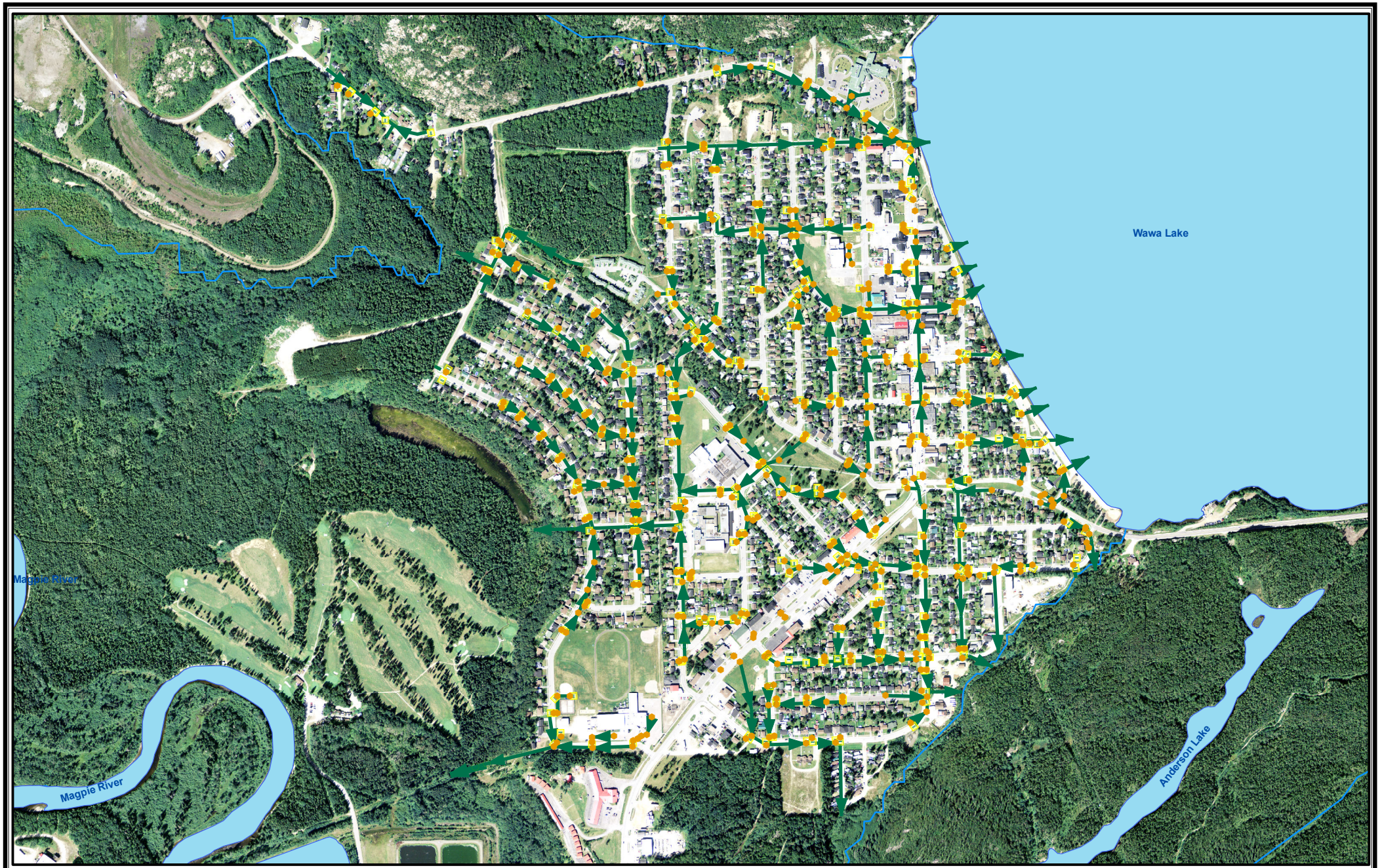
Legend

- Sidewalks
- Municipality of Wawa
- Lakes
- Rivers and Creeks

Sidewalk Network
Municipality of Wawa

0 185 370 740 1,110
Feet

Wawa



Legend

- Catch Basin
- Storm
- STORM, CBMH
- STORM, MH
- Rivers and Creeks

08/05/2020

Wawa Storm Network
Municipality of Wawa

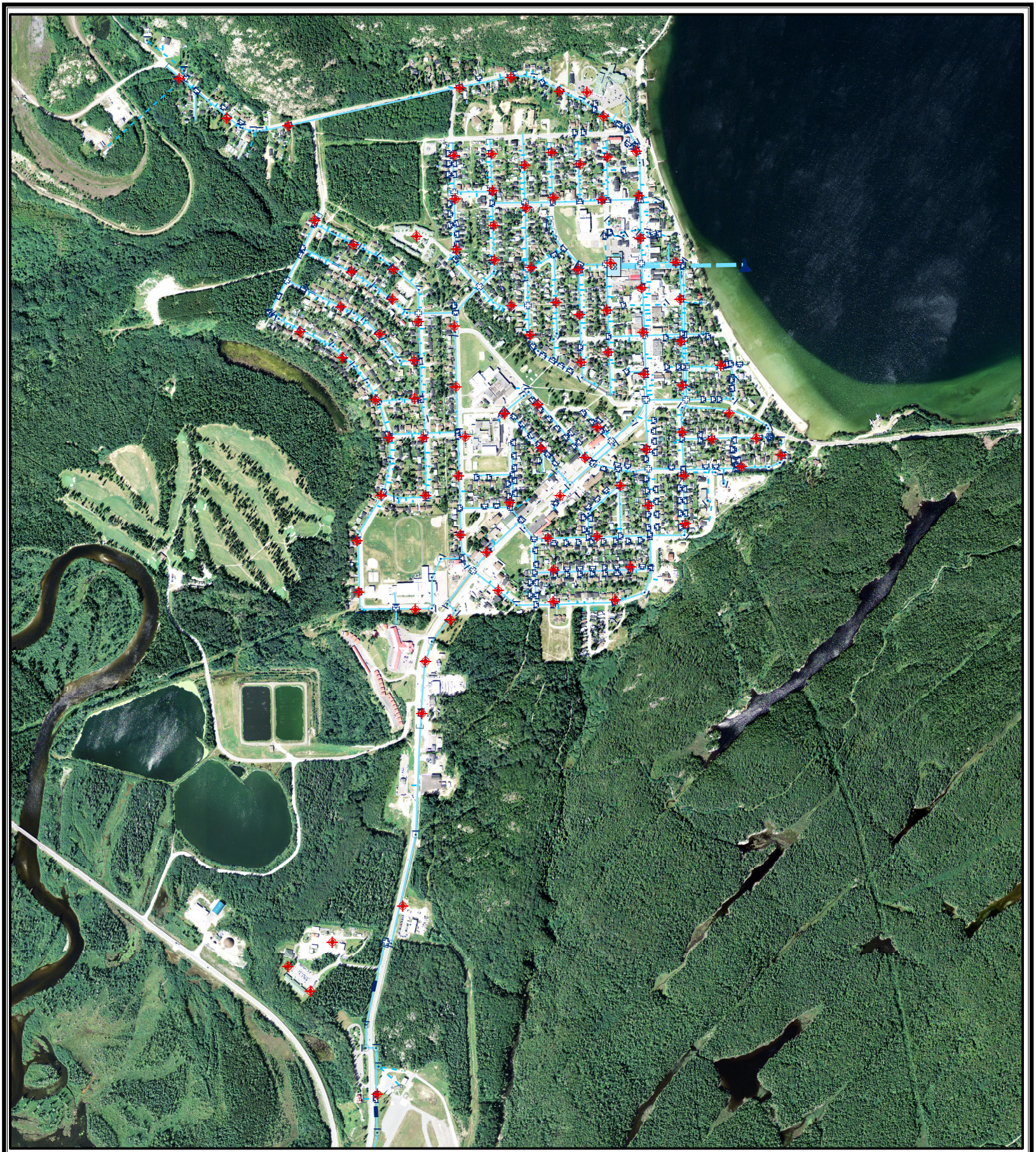
0 90 180 360 540

Meters

NITGC

NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S



Legend

- Hydrant
- 13 - 300
- 301 - 900
- Service Lead
- Tank
- PS Pump Station
- Intake
- Bend
- Cap
- Cross
- Reducer
- Saddle
- Sleeve
- Tee

08/05/2020

Wawa Water Network
Municipality of Wawa

0 100 200 400 600

Meters

NITGC

NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S

Legend

- Hydrant
- 13 - 300
- 301 - 900
- Service Lead
- Tank
- PS Pump Station
- Intake
- Bend
- Cap
- Cross
- Reducer
- Saddle
- Sleeve
- Tee

08/05/2020

Wawa Water Network
Michipicoten River Village
Municipality of Wawa

0 75 150 300 450

Meters

NITGC

NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S

Legend

- Hydrant
- 13 - 300
- 301 - 900
- Service Lead
- Tank
- PS Pump Station
- Intake
- Bend
- Cap
- Cross
- Reducer
- Saddle
- Sleeve
- Tee

08/05/2020

Wawa Water Network
Pinewood Dr/Highway 17
Municipality of Wawa

0 100 200 400 600

Meters

NITGC
NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S

Legend

- SAN, CHAM
- SAN, MH
- Pumping Station
- Lagoons
- Bend
- Coupling
- Elbow_11.25D
- Elbow_45D
- Endcap
- Tee
- Wye
- Sanitary
- Sanitary

Wawa Sewer Network
Municipality of Wawa

0 90 180 360 540

Meters

NITGC

NORTHERN INFORMATION TECHNOLOGY AND GEOMATICS COOPERATIVE

N W E S

08/05/2020

Appendix C: Risk Rating Criteria

Probability of Failure

Asset Category Rated
Bridges & Culverts Buildings Land Improvements Machinery & Equipment Road Network (Roads) Vehicles Storm Water Network (Mains) Water Network (Mains) Storm Water Network (Mains) Sanitary Sewer Network (Mains)

Risk Criteria	Criteria Weighting	Value/Range	Probability of Failure Score
Condition	100%	80-100	1
		60-79	2
		40-59	3
		20-39	4
		0-19	5

Consequence of Failure

Asset Category	Criteria Weighting	Value/Range	Probability of Failure Score
Bridges & Culverts	Replacement Cost 100%	$2,000,000+	5
		$1,500,000 - $2,000,000	4
		$1,000,000 - $1,500,000	3
		$500,000 - $1,000,000	2
		$0 - $500,000	1
Buildings	Replacement Cost 100%	$300,000 - $500,000	5
		$150,000 - $300,000	4
		$80,000 - $150,000	3
		$20,000 - $80,000	2
		$0 - $20,000	1
Land Improvements	Replacement Cost 100%	$1,000,000+	5
		$500,000 - $1,000,000	4
		$250,000 - $500,000	3

		$100,000 - $250,000	2
		$0 - $100,000	1
Machinery & Equipment	Replacement Cost 100%	$500,000+	5
		$350,000 - $500,000	4
		$250,000 - $350,000	3
		$100,000 - $250,000	2
		$0 - $100,000	1
Road Network	Replacement Cost 100%	$500,000+	5
		$350,000 - $500,000	4
		$150,000 - $350,000	3
		$50,000 - $150,000	2
		$0 - $50,000	1
Vehicles	Replacement Cost 100%	$500,000+	5
		$350,000 - $500,000	4
		$150,000 - $350,000	3
		$50,000 - $150,000	2
		$0 - $50,000	1
Storm Water Network	Pipe Diameter Cost 100%	UNKN	5
		1050 mm	5
		900 mm	4
		825 mm	4
		750 mm	4
		675 mm	3
		600 mm	3
		525 mm	3
		450 mm	3
		375 mm	2
		350 mm	2
		300 mm	2
		250 mm	1
		200 mm	1
		150 mm	1
Water Network	Pipe Diameter Cost 100%	600 mm	5
		300 mm	4
		250 mm	3
		200 mm	3
		150 mm	2
		100 mm	2
		50 mm	1
		37 mm	1
		19 mm	1
		UNKN	5
		525 mm	5

Sanitary Sewer Network (100%)	Pipe Diameter (100%)	500 mm	5
		450 mm	4
		375 mm	3
		300 mm	3
		250 mm	2
		200 mm	2
		150 mm	1
	Sewer Type	FM	4
		GRAV	2

Appendix D

Municipality of Wawa

Asset Management
Condition Assessment

Implementation Strategy

Cindy Godson, Asset Manager

Municipality of Wawa

Background

Providing services to the community is a function of municipal government, and infrastructure assets are a conduit for service provision. The asset management program is developed with the goal of balancing costs, opportunities and risks against the desired performance of assets to achieve the Municipality's levels of service objectives.

The Corporation of the Municipality of Wawa's ("Municipality of Wawa" or "Municipality") infrastructure systems are the foundation of our community. They support a range of municipal services that enable the quality of life experience by residents, businesses, visitors to our community, and other stakeholders.

The development of this Condition Assessment Strategy was a recommendation in the 2020 Asset Management Plan, and is a further step in the ongoing advancement of the Municipality's asset management program. This project has been facilitated by a grant approved by the Federation of Canadian Municipalities (FCM) through their Municipal Asset Management Program (MAMP). The project also included conducting condition assessments on the Municipality's facilities, and provided current condition ratings of componentized assets, recommended interventions (install, repair, replace) with photos and estimated costs for facilities assets.

Purpose

The information contained herein will ultimately be incorporated into the asset management plan being prepared for July 1, 2024, as per the deadline for all municipal assets in Ontario Regulation 588/17.

This strategy has been developed in cooperation with the staff and management of the Municipality of Wawa, and relates to those assets currently owned and maintained by the Municipality and used in providing services to the community. The condition assessment strategy will be applied as current assets are maintained, rehabilitated or replaced, and as new assets are acquired.

Role of Asset Condition Data

The goal of collecting asset condition data is to ensure that data is available to inform maintenance and renewal programs required to meet the desired levels of service. Assessed condition is a key variable in the determination of an asset's probability of failure. An incomplete or limited understanding of asset condition can mislead long-term planning and decision-making.

Accurate and reliable condition data allows municipal staff to:

- ✓ determine the estimated remaining service life of assets;
- ✓ identify the most cost-effective approach to asset deterioration, whether it involves extending the life of the asset through remedial efforts or determining that replacement is required to avoid asset failure.

In addition to the optimization of lifecycle management strategies, asset condition data also impacts the Municipality's risk management and financial strategies. 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.

Guidelines for Condition Assessment

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

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. In some cases, internal staff may have sufficient expertise or training to complete condition assessments, however, staff capacity is limited. In other cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure.

Condition Assessment Ratings

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

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

Developing a Condition Assessment Schedule

Condition assessments and general data collection can be both time-consuming and resource-intensive. As it is not an effective strategy to collect assessed condition data across the entire asset inventory, the goal is to prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. All of the various types of municipal assets are considered, with the aim to find the balance of assessment cost to benefits achieved in performing the assessments.

The Municipality's assets are organized in the following asset categories:

- Bridges and Culverts
- Road Network
- Storm Water Network
- Sanitary Sewer Network
- Water Network
- Buildings
- Machinery and Equipment
- Vehicles
- Land Improvements

Criteria for Consideration When Identifying Assets to be Assessed

Several factors were identified as important to consider when determining which assets to assess and setting the assessment schedules.

1. Is there legislation requiring a condition assessment/inspection?
   Examples of legislation regarding infrastructure assets include:
   - DWQMS – Drinking Water Quality Management Standard;
   - SDWA – Safe Drinking Water Act;
   - TSSA – Technical Standards and Safety Authority;
   - MMS – Minimum Maintenance Standards – Road Network;
   - Our own By-laws/policies.
2. Are there reporting requirements regarding legislated inspections?
   - Completed inspections can help to fulfill reporting requirements.
3. How often are the inspections required/recommended?
   - Manufacturer recommendations should be identified;
   - Assessment should be accelerated on deteriorating assets.
4. How often are inspections being done now?
   - Appropriateness – confirm how frequently to perform the inspection.

5. What are the risks of not doing inspections? Or doing inspections less frequently?
    - Identify the probability of failure.
    - Identify the consequence of failure if not inspected.
6. Can the assessment be done by municipal staff or are outside contractors required?
    - Does Municipal staff have the training/certification to complete the assessment?
    - Does Municipal staff have the capacity/time to complete the assessment?
7. Is the cost of assessment reasonable or prohibitive?
    - Does the cost of the inspection outweigh the benefit of the data it would provide?
    - Is it labour or time intensive?
8. Are there grants available to help cover inspection costs?
    - Where possible, delay inspection until there is funding to help mitigate the cost;
    - Where possible, include inspection costs as part of a capital project.
9. Is there a collaborative opportunity with nearby communities to achieve savings when arranging condition assessments?
    - When engaging outside consultants who may have to travel to the community from larger centres – collaborating can bring a larger contract to the consultant and encourage cost savings for each community involved.
10. Is the Municipality receiving public input regarding this asset?

Informing Asset Maintenance Schedules and Inventory Records

All new assets are added to the inventory records as they are acquired or at a minimum once per calendar year. The asset maintenance schedule of new acquisitions will be determined by the staff and Director of the department managing the assets, and related lifecycle events (assessments, routine maintenance, preventative maintenance) will be added to the asset inventory records to assist with department scheduling and planning.

Assessment and maintenance schedules for existing assets will be reviewed by department Directors once per calendar year, and any needed adjustments to the schedules/lifecycle events will be adjusted in the asset inventory records.

Other than scheduled assessments, information on asset performance can also be obtained from public or staff input. Service requests, comments, or complaints submitted will be reviewed by the department Director, who will determine the actions to be taken in that situation.

As condition assessments are completed (or at a minimum once per calendar year), the results will be added to the relevant asset's inventory record, as part of the process of keeping the inventory records updated. Any required repairs will be completed as they are identified (if feasible), or added to the relevant department's list of maintenance/repairs to be scheduled.

An Action Plan has been prepared to identify steps to update assessment and maintenance data for existing assets in the inventory records.

The final step includes the incorporation of the Condition Assessment Strategy details into the draft asset management plan being prepared for July 1, 2024.

Action Plan			
Task		**Who is responsible**	**Schedule**
1.	Assemble condition assessment information for current assets, including: - schedule of assessments being done/planned - reports/results for completed assessments	Asset Management Coordinator with the assistance of department Directors, Assistant Directors	In Progress Complete by Nov. 20, 2023
2.	Update asset inventory records with results from completed condition assessments: - determine gaps in inventory records for assessments already done - input results that are outstanding	Asset Management Coordinator	Identify data gaps by Nov. 30, 2023 Input results to inventory records by Dec. 31, 2023
3.	Assemble lifecycle events for current assets, including: - schedule of maintenance activities planned (routine maintenance, preventative maintenance) with related Costs	Asset Management Coordinator with the assistance of department Directors, Assistant Directors	In Progress Complete by Dec. 11, 2023
4.	Update asset inventory records with lifecycle event details	Asset Management Coordinator	Input results to inventory records by Dec. 31, 2023
5.	Incorporate Condition Assessment Strategy details into Asset Management Plan	Asset Management Coordinator	Add to draft AMP by Apr. 30, 2024

APPENDIX "A"

Wawa Building Condition Assessments Accent Building Sciences Inc. (ABSI) Consultant's Recommendations as at June 30, 2023						
	Deficiency Repairs	**Replacement Costs Estimated for Years 2024-2027**				**Total Estimated Costs**
Costs by Building (samples - not all listed)	**Estimated Repair Cost 2023-2024**	**2024**	**2025**	**2026**	**2027**	**2023-2027**
96 Broadway Ave.	$63,250	$359,318	$750	$246,050	$60,000	$729,368
Fire Hall	$26,300	$258,213	$7,500	$48,300	$52,125	$392,438
Michipicoten Memorial Community Centre	$262,600	$764,575	$473,000	$603,625	$150,000	$2,253,800
Municipal Offices (Town Hall)	$265,441	$572,513	$273,304	$472,500	$23,450	$1,607,208
Public Works Garage (Magpie)	$25,500	$688,605	$23,400	$289,155	$0	$1,026,660
Public Works Storage Garage (Montreal)	$4,000	$40,950	$0	$0	$0	$44,950
Tourist Information Centre	$64,750	$23,640	$6,500	$113,500	$28,740	$237,130
Total Costs by Year - All Buildings	**$1,057,571**	**$3,344,811**	**$1,233,912**	**$1,857,010**	**$981,807**	**$8,475,111**

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Appendix E: Level of Service Metrics (Examples)

Road Network, Bridges & Culverts

Indicator	KPI (Reported Annually)
Strategic	• Percentage of total reinvestment compared to asset replacement value • Completion of strategic plan objectives (related to right-of-way)
Financial Indicators	• Annual revenues compared to annual expenditures • Annual replacement value depreciation compared to annual expenditures • Cost per capita for roads, and bridges & culverts • Maintenance cost per square metre • Revenue required to maintain annual network growth • Total cost of borrowing vs. total cost of service
Tactical	• Overall Bridge Condition Index (BCI) as a percentage of desired BCI • Percentage of road network rehabilitated/reconstructed • Percentage of paved road lane km rated as poor to very poor • Percentage of bridges and large culverts rated as poor to very poor • Percentage of asset class value spent on O&M • Percentage of signage that pass reflectivity test. The remaining should be replaced
Operational Indicators	• Percentage of roads inspected within the last five years • Percentage of bridges and large culverts inspected within the last two years • Operating costs for paved lane per km • Operating costs for bridge and large culverts per square metre • Percentage of customer requests with a 24-hour response rate

Water, Sanitary and Sewer Networks

Indicator	KPI (Reported Annually)
Strategic	• Percentage of total reinvestment compared to asset replacement value • Completion of strategic plan objectives (related water ! sanitary ! storm)
Financial Indicators	• Annual revenues compared to annual expenditures • Annual replacement value depreciation compared to annual expenditures • Total cost of borrowing compared to total cost of service • Revenue required to maintain annual network growth • Lost revenue from system outages
Tactical	• Percentage of water ! sanitary ! storm network rehabilitated ! reconstructed • Overall water ! sanitary ! storm network condition index as a percentage of desired condition index • Annual adjustment in condition indexes • Annual percentage of growth in water ! sanitary ! storm network • Percentage of mains where the condition is rated poor or critical for each network • Percentage of water ! sanitary ! storm network replacement value spent on operations and maintenance
Operational Indicators	• Percentage of water ! sanitary ! storm network inspected • Operating costs for the collection of wastewater per kilometre of main. • Number of wastewater main backups per 100 kilometres of main • Operating costs for storm water management (collection, treatment, and disposal) per kilometre of drainage system. • Operating costs for the distribution! transmission of drinking water per kilometre of water distribution pipe. • Number of days when a boil water advisory issued by the medical officer of health, applicable to a municipal water supply, was in effect. • Number of water main breaks per 100 kilometres of water distribution pipe in a year. • Number of customer requests received annually per water ! sanitary ! storm networks • Percentage of customer requests responded to within 24 hours per water ! sanitary ! storm network

Buildings & Facilities

Indicator	KPI (Reported Annually)
Strategic	• Percentage of total reinvestment compared to asset replacement value • Completion of strategic plan objectives (related to buildings and facilities)
Financial Indicators	• Annual revenues compared to annual expenditures • Annual replacement value depreciation compared to annual expenditures • Revenue required to meet growth related demand • Repair and maintenance costs per square metre Energy, utility and water cost per square metre
Tactical	• Percentage of component value replaced • Overall facility condition index as a percentage of desired condition index • Annual adjustment in condition indexes • Annual percentage of new facilities (square metre) • Percent of facilities rated poor or critical • Percentage of facilities replacement value spent on operations and maintenance Increase facility utilization rate by [x] percent by 2020. • =
Operational Indicators	• [x] sq.ft. of facilities per full-time employee (or equivalent), i.e., maintenance staff • Percentage of facilities inspected within the last five years • Number/type of service requests • Percentage of customer requests responded to within 24 hours

Fleet & Equipment

Indicator	KPI (Reported Annually)
Strategic	• Percentage of total reinvestment compared to asset replacement value • Completion of strategic plan objectives (related to fleet and equipment)
Financial Indicators	• Annual revenues compared to annual expenditures • Annual replacement value depreciation compared to annual expenditures • Revenue required to maintain annual network growth • Total cost of borrowing vs. total cost of service
Tactical	• Percentage of vehicles replaced • Average age of fleet vehicles • Percent of vehicles rated poor or critical • Percentage of fleet replacement value spent on operations and maintenance
Operational Indicators	• Average downtime per fleet category • Average utilization per fleet category and/or each vehicle • Ratio of preventative maintenance repairs vs. reactive repairs • Percent of vehicles that received preventative maintenance • Number/type of service requests • Percentage of customer requests responded to within 24 hours • Percentage of customer requests responded to within 24 hours