Report 2024-133
Appendix B

PORT COLBORNE

City of Port Colborne

Corporate Asset Management Plan

2024

Executive Summary

Asset Management Plan Overview

The City of Port Colborne is located on Niagara's South Coast, a destination steeped in marine heritage. The City boasts shopping districts, many restaurants, ample beachfront and a selection of natural attractions. Whether it's cycling, fishing or relaxing, the City has something to offer each of its residents and visitors. The City of Port Colborne's infrastructure supports a variety of municipal services that residents and businesses rely on every day including roads and bridges which facilitate travel, watermains which deliver clean drinking water, and sewer and storm systems which manage waste and excess rainfall.

The City owns approximately $1.34 billion in infrastructure assets and requires a comprehensive plan for managing these assets to maximize service delivery while balancing costs to the community. An asset management plan (AMP) can help guide the City in making the best decisions in the management of its infrastructure assets and is designed to:

- Meet regulatory requirements.
- Outline the current state of the City's infrastructure assets.
- Describe the current levels of service provided by these assets.
- Identify the lifecycle activities used to manage these assets.
- Forecast the infrastructure spending required to maintain the current levels of service.
- Develop a plan for improving AM planning for future iterations of the plan.

The plan aligns with the guidelines set out by the Ontario Ministry of Infrastructure's Building Together Guide for Municipal Asset Management Plans as well as Ontario Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act which help to standardize asset management planning across the province. This plan meets the 2024 regulatory requirements and will be further updated to include proposed levels of service for 2025.

This plan represents the City's commitment to improving municipal services for the community. The City through this plan has developed a financial strategy to address the infrastructure needs in alignment with the City's Strategic Policy, as well as the Strategic Plan established for 2023-2026. The anticipated budget developed for this plan ultimately will assist the City to meet the priorities established in consultation with Council.

Asset Management Plan Scope

This AMP is divided into chapters for each of the following 11 asset categories:

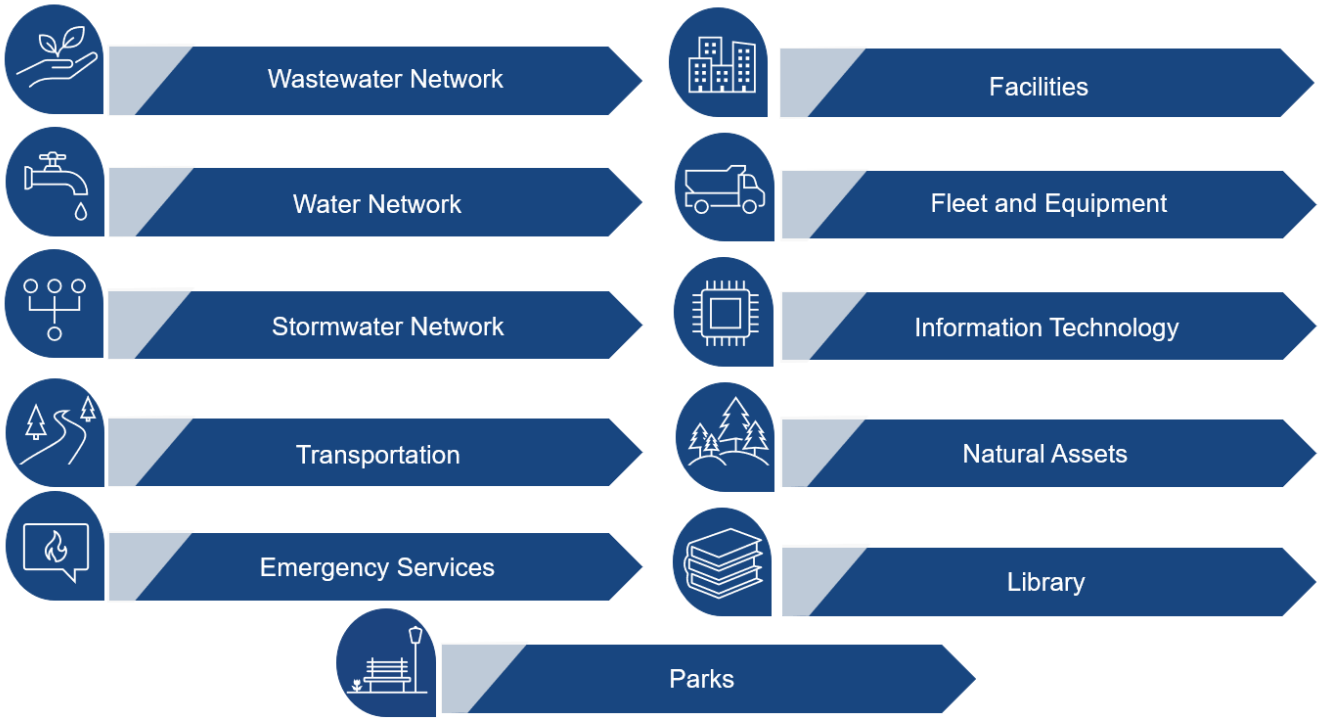

Figure 0-1. 2024 AMP Scope

For each of these asset category chapters, the following sections are included:

State of the Infrastructure – A high-level inventory of the City's assets and insights on the overall age, condition, replacement value, and key metrics of the assets owned by the City.

Levels of Service – The metrics which outline the services the City provides to its customers, residents, and visitors in terms of capacity, function, and quality. These parameters will reflect improvements or reductions in services as they are updated in the future and other metrics may be added as AMP policies are more thoroughly developed.

Lifecycle Management Strategies – The set of planned actions which help maintain current levels of service and include the maintenance, rehabilitation, replacement, disposal, and expansion of assets. These activities are funded through City operating and capital budgets and are detailed for each asset in the AMP.

Funding the Lifecycle Activities – The forecasted lifecycle investment requirements over the next 20 years based on these current activities, including the forecasted costs associated with the lifecycle activities and the performance (condition) of the City's assets.

Data Confidence and Improvement Plan – Information on the sources used to develop the asset inventory and the quality of the data.

These asset category specific chapters are followed by the Financial Strategy and Improvement and Monitoring Plan for all the City's assets.

Infrastructure Valuation and Condition Distribution

Overall, the City owns approximately $1.34 billion in infrastructure assets, broken out across 11 asset categories. As shown in Figure 0-2 below, Transportation assets account for the largest share of the City's assets by replacement value, totalling over $500M. This is followed by Water Network assets (~$250 million) and Stormwater Network assets (~$180 million).

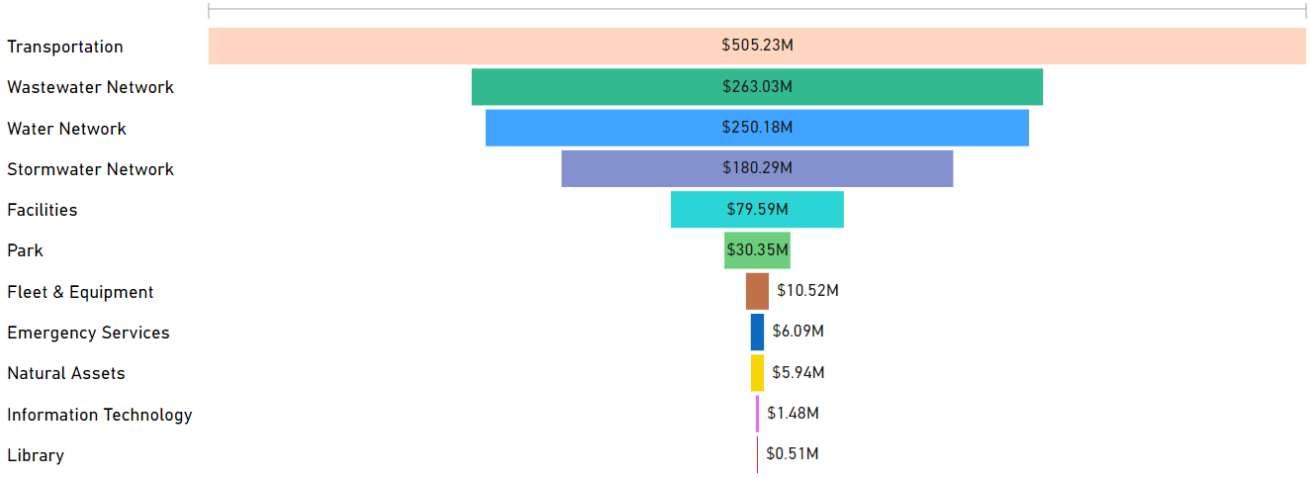

Figure 0-2. Overall Asset Valuation by Asset Category

On average, the City's assets are in Fair condition, with over 75% of the City's assets (by replacement value) falling into Fair or better condition (see Figure 0-3). Detailed breakdowns for each asset category can be found within each of this AMP's asset category chapters.

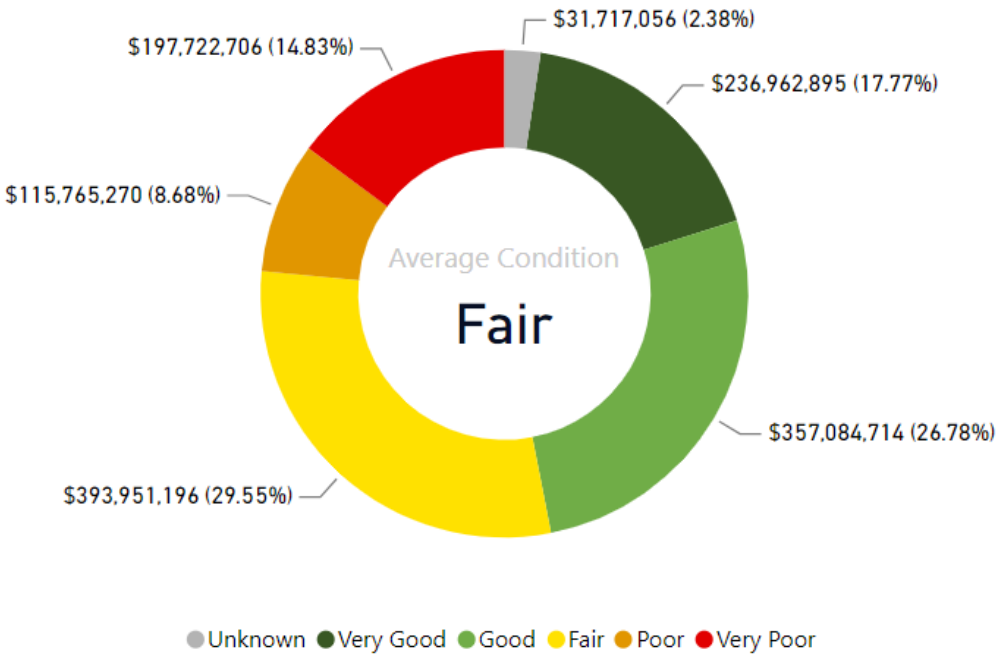

Figure 0-3. Overall Asset Condition by Replacement Value

The City's assets are split into two general funding categories, rate funded and tax funded. Stormwater, Wastewater and Water are rate funded asset categories, and the remaining are tax funded. Figure 0-4 shows the condition breakdown by asset category (by replacement value), separated into rate and tax asset categories. This information is also summarized on the following page in Table 0-1.

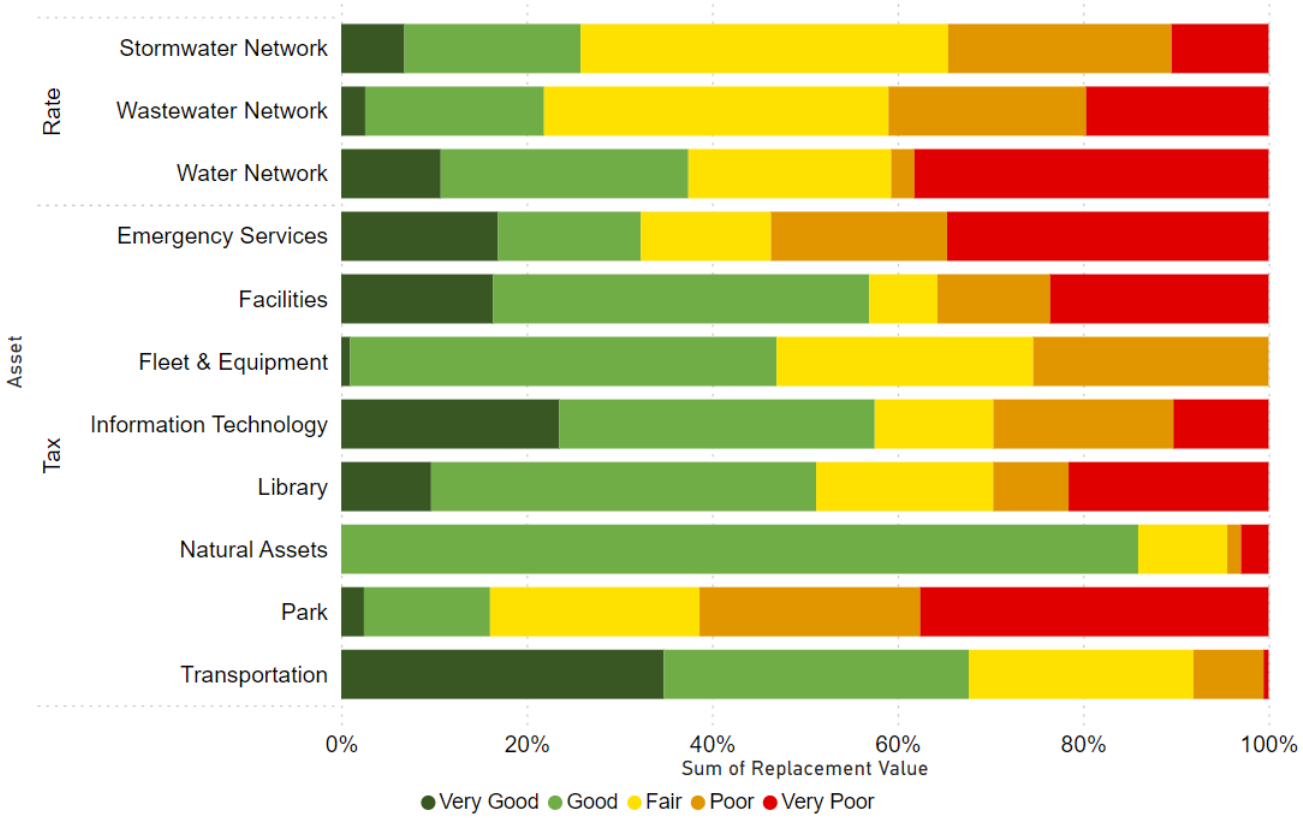

Figure 0-4. Asset Category Condition Profiles

Table 0-1. Condition Values by Replacement Value for Asset Categories

Asset	Very Poor	Poor	Fair	Good	Very Good	Total
Rate Funded						
Stormwater Network	$17,418,450	$40,112,317	$65,918,700	$31,622,273	$11,338,506	**$166,410,246**
Wastewater Network	$51,777,809	$56,034,016	$97,688,318	$50,728,029	$6,799,021	**$263,027,193**
Water Network	$95,477,946	$6,228,746	$54,671,356	$66,735,010	$26,812,475	**$249,925,533**
Total	**$164,674,205**	**$102,375,079**	**$218,278,374**	**$149,085,312**	**$44,950,002**	**$679,362,972**
Tax Funded						
Transportation	$2,702,175	$37,322,176	$119,827,532	$162,627,525	$171,931,411	**$494,410,819**
Emergency Services	$2,097,673	$1,149,206	$848,775	$932,166	$1,023,031	**$6,050,851**
Facilities	$18,546,699	$9,551,732	$5,790,567	$31,906,783	$12,893,070	**$78,688,851**
Fleet & Equipment	$0	$2,645,446	$2,883,498	$4,793,164	$100,000	**$10,422,108**
Information Technology	$88,432	$167,200	$110,252	$292,919	$202,590	**$861,394**
Library	$109,017	$41,068	$96,493	$209,807	$49,013	**$505,397**
Natural Assets	$176,000	$88,000	$568,000	$5,085,000	$0	**$5,917,000**
Park	$8,429,400	$5,335,000	$5,065,860	$3,049,800	$550,000	**$22,430,060**
Total	**$32,149,396**	**$56,299,828**	**$135,190,977**	**$208,897,164**	**$186,749,115**	**$619,286,480**

Financial Strategy

The Financial Strategy is one of the key components within the AMP, as it puts the AMP into action. The financial plan provides a way for municipalities to integrate asset management planning with financial budgeting.

Within each asset category chapter, three forecasting scenarios are run to analyze the City's assets, which provide insight on the City's ability to continue to provide services into the future. This is achieved by comparing the performance of assets based on needs and various budgetary or condition-based targets.

The following three scenarios are run:

Scenario 1: Anticipated Funding Model – Evaluates asset performance under the anticipated funding level that the City anticipates allocating towards each asset category. The anticipated budgets were obtained from the City's 2024 capital and operating budget, as well as based on the capital expenditures required based on the Infrastructure Needs Study. This scenario assumed that the funding will be made available as outlined in this AMP. Only renewal, rehabilitation and replacement activities are completed that fit within the current funding allotted to the asset category as part of this forecast.

Scenario 2: Maintain Current Performance (Level of Service) – This scenario determines the cost that would be required to maintain the City's assets in approximately the same condition they are currently assessed in over a 20-year forecast period. Understanding the cost to maintain current performance levels is a requirement of O.Reg. 588/17. For the purposes of this AMP, the current performance (condition) of the assets is used to determine the current level of service. The 2025 iteration of this AMP will require a further scenario, where the City will set targets to the level of service.

Scenario 3: Infrastructure Needs as Per Lifecycle Strategies – This scenario is run to determine the required spending for the 20-year period to address infrastructure needs based on expected/planned rehabilitation, renewals, and replacements of assets as per their defined lifecycle strategy. This scenario also identifies rehabilitation and replacement requirements backlog, which is work that should have already been completed by the time of this assessment. Typically, these are assets that are beyond their identified service life.

This scenario is not constrained by a budget, so any work that was planned based on the asset's lifecycle strategies are completed in the year it was triggered. Unlike the second scenario, the condition levels were not held to a specific target LOS, so the percent of asset value that fell into each condition grade varies based on where in their lifecycle the assets fall.

Scenarios 2 and 3 for each asset category were combined to assess the City's forecasted expenditures compared to the capital budget forecasts to determine if a gap in funding is present.

The expenditures for renewal, rehabilitation and replacement required for both scenarios are outlined below in Table 0-2. These expenditures represent the average annual cost of the 20-year forecast based on the identified scenarios.

Table 0-2. Cost to Maintain Current Level of Service and Infrastructure Needs as Per Lifecycle Strategies (Rate & Tax Supported)

Service Category	Average Annual Expenditure to Maintain Current LOS (Scenario 2)	Average Annual Expenditure for Infrastructure Needs as Per Lifecycle Strategies (Scenario 3)
Rate Supported		
Storm	$3,292,802	$4,520,212
Water	$395,040	$4,852,164
Wastewater	$956,721	$2,142,638
Total	**$4,644,563**	**$11,515,014**
Tax Supported		
Transportation	$4,209,705	$5,377,580
Emergency Services	$257,426	$329,085
Facilities	$2,456,720	$2,732,136
Fleet & Equipment	$890,582	$890,582
Information Technology	$193,372	$207,996
Library	$44,658	$67,235
Natural Assets	$200,000	$200,000
Parks	$1,151,648	$1,552,848
Total	**$9,404,111**	**$11,357,463**

Figure 0-5 and Table 0-3 provide an overview of the scenarios outlined, the operation budget, and the planned expenditures for the City. The City has made a significant effort to develop a forecasted budget to meet the infrastructure needs to improve the level of service provided to the community.

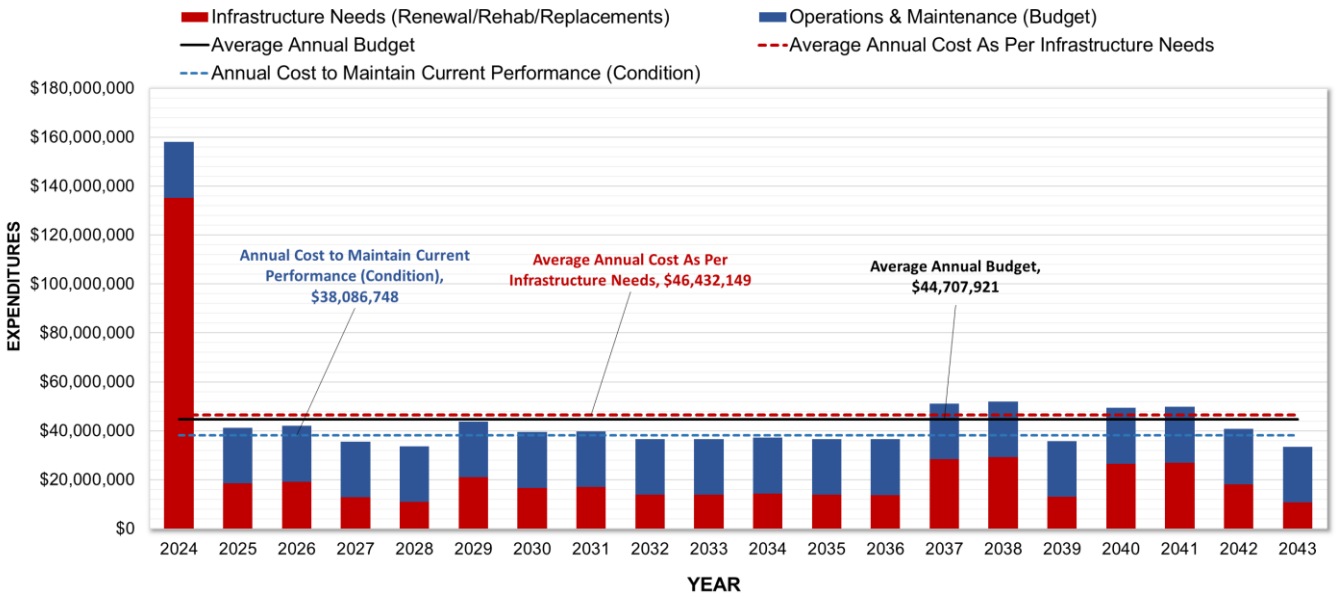

Figure 0-5. Lifecycle Activity Expenditures and Scenario Comparison

Table 0-3. Average Annual Lifecycle Expenditures

Lifecycle Activity	Average Budget	Average Annual Cost to Maintain Current Performance (Condition)	Average Annual Identified Infrastructure Spending Requirements
Operations & Maintenance	$22,740,600	$22,740,600	$22,740,600
Renewal, Rehabilitation & Replacement	$21,967,321	$15,346,148	$23,691,549
Total Expenditure	**$44,707,921**	**$38,086,748**	**$46,432,149**
Average Annual Funding Gap		**No Gap**	**$1,724,228**
Percentage Increase Required to Address Gap			**3.86%**

As shown here, if the City continues it's efforts to improve services for the community and provides the funding as documented in this plan to meet the funding requirements of the infrastructure needs, the City will not face an infrastructure gap. Since the previous AMP the City has taken significant steps to establish improved asset management planning through their efforts to obtain updated condition assessments for multiple assets, as well as to develop a comprehensive funding strategy (as outlined in this plan), to meet the infrastructure requirements as determined by the lifecycle strategies.

By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

The impact of the investments identified in this plan can be seen in Figure 0-6, which shows the overall condition profile of the City's assets currently and comparing it to the condition profile at the end of the of 20-year forecast.

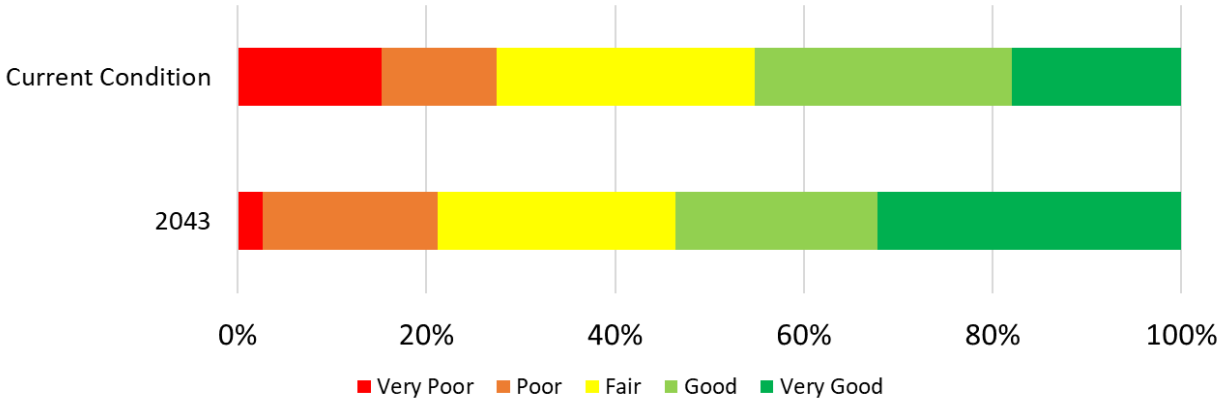

Figure 0-6. Impact of Following Infrastructure Needs on Overall Condition by end of 20-year Forecast

By following the infrastructure needs, and the budgets that have been developed for this plan, the City can see the improvement to the condition profile of the assets from the current condition to 2043. In the 2025 iteration of this plan, the City will have a further opportunity to set targets for the level of service provided.

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Glossary of Terms

Term	Definition
Asset	An item, thing or entity that has potential or actual value or benefit to an organization.
Asset Management	Coordinated activity of an organization to realize value from assets.
Asset Management Plan (AMP)	Long-term plans (usually 10-20 years or more for infrastructure assets) that outline the asset activities and programs for each service area and resources applied to provide a defined level of service in the most cost-effective way.
Asset Management Policy	A high-level statement of an organization's principles and approach to asset management (IIMM, 2015).
Bridge Condition Index (BCI)	A numerical index generally utilized for the assessment of the condition & structural reliability of bridges and culverts.
Connection Days	The number of properties connected to a municipal system that are affected by a service issue, multiplied by the number of days on which those properties are affected by the service issue.
Estimated Service Life (ESL)	An estimate of the duration of time that an asset is forecasted to be in service.
Infrastructure	The system of fundamental facilities and structures necessary for a public works of a country, state or region to function. Examples include roads, railway, bridges, tunnels, water supply, sewers, electrical, telecommunications, signs, equipment, fleet, etc.
Level of Service (LOS)	Parameter or combination of parameters, which reflect social, political, environmental and economic outcomes that the organization delivers. Levels of service statements describe the outputs or objectives an organization or activity intends to deliver to customers.
Lifecycle Activity	An activity undertaken to sustain asset integrity and service levels over the life of an asset, such as demand management or rehabilitation.
Lifecycle Cost	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
Lifecycle Management Strategy	The set of planned actions that will enable the assets to provide the desired levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost.

Term	Definition
LOS Framework	A set of tables which outlines the Levels of Service developed for each service category.
Ontario Regulation O.Reg. 588/17	Ontario Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act 2015, as amended. Principles are set out in this regulation by the provincial government to regulate asset management planning for municipalities.
Performance Measure	Parameters / metrics that can be measured and monitored to assess the delivery of a service that is being provided.
Pipeline Assessment and Certification Program (PACP)	A standardized protocol for coding pipeline condition information from CCTV inspection footage.
Replacement Cost/Value	The cost of acquiring an asset to replace an existing asset with a new modern equivalent asset.
Reserves	A reserve is an allocation of accumulated net revenue. The Town's current strategy is to contribute fixed amounts to capital reserves which supports capital spending together with grants, development charges, debt, etc.

Abbreviations

The table below provide a summary of the abbreviations referenced in this document.

Acronym	Definition
AM	Asset Management
AMP	Asset Management Plan
BCA	Building Condition Assessment
BCI	Bridge Condition Assessment
CCTV	Closed Circuit Television Camera
ESL	Estimated Service Life
LOS	Level of Service
OSIM	Ontario Structure Inspection Manual
NRBCPI	Non-Residential Building Construction Price Index
PACP	Pipeline Assessment and Certification Program
PCI	Pavement Condition Index

1.0 Introduction

1 Introduction

1.1 Purpose and Regulation

1.1.1 Asset Management Plan Purpose

The City of Port Colborne's infrastructure supports a variety of municipal services that residents and businesses rely on every day. City infrastructure includes a variety of asset types such as roads and bridges which facilitate travel, watermains which deliver clean drinking water, sewer and storm systems which manage waste and excess rainfall, emergency services which keeps residents and property safe, parks which provide leisure spaces for residents and visitors, and library services which aim to empower, enrich, and educate visitors of all ages.

The City owns approximately $1.34 billion in infrastructure assets and requires a comprehensive plan for managing these assets to maximize service delivery while balancing costs to the community. An asset management plan (AMP) can help guide the City in making the best decisions in the management of its infrastructure assets and is designed to:

- Meet regulatory requirements.
- Outline the current state of the City's infrastructure assets.
- Describe the current levels of service provided by these assets.
- Identify the lifecycle activities used to manage these assets.
- Forecast the infrastructure spending required to maintain the current levels of service.
- Develop a plan for improving AM planning for future iterations of the plan.

The plan aligns with the guidelines set out by the Ontario Ministry of Infrastructure's Building Together Guide for Municipal Asset Management Plans as well as Ontario Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act which help to standardize asset management planning across the province. Upon endorsement of this plan by the executive lead of the municipality, and approval by a resolution by the City Council, this plan will be made available on the City's website for public access. All background information and reports upon which informed the state of the infrastructure, which are not currently available on the City's website, may be requested through the City's clerk's office.

1.1.2 O.Reg. 588/17 Overview

New statutory and regulatory requirements have been an important driver of moving asset management forward. Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure requires municipalities to develop an Asset Management Policy outlining how asset

management practices will be incorporated into the municipal framework. The AMP Policy must also consider actions that may be required to address vulnerabilities caused by climate change. The regulation also requires municipalities to develop and implement an Asset Management Plan and provide supporting policies for municipal infrastructure. After 2025, annual review of AM processes and formal 5-year asset management plan updates will be required as part of compliance to the O. Reg. A summary of O.Reg. 588/17 timelines and requirements is shown in the Figure below.

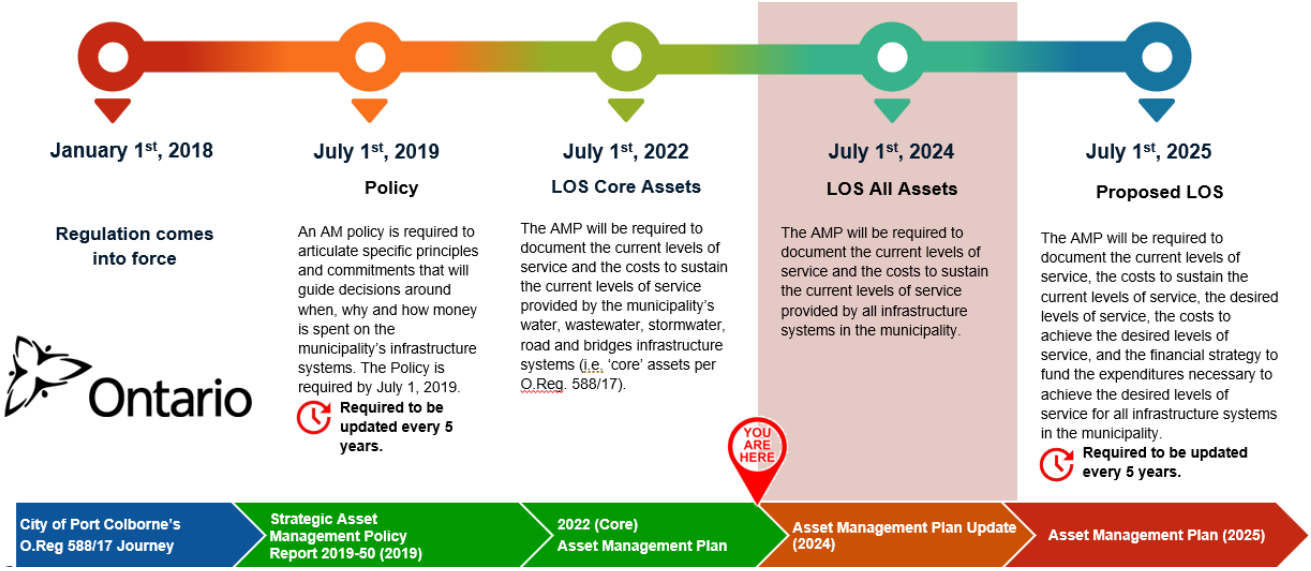


Figure 1-1. O.Reg. 588/17 Requirements and Timelines

This AMP satisfies requirements for July 1, 2024, as per the Ontario Regulation. This version of the AMP does not provide recommendations on the desired levels of service, nor the funding levels required to achieve them. This analysis will be included in the next AMP for compliance to year 2025 Regulation requirements.

1.2 Asset Management Program in the City of Port Colborne

1.2.1 Corporate Asset Management Overview

The City of Port Colborne developed the Strategic Asset Management Policy, as per O.Reg.588/17 requirements in 2019. The Strategic Asset Management Policy document is required to be updated at least every 5 years, so will be required to be updated this year to continue to be compliant with the regulation.

The objective of this policy is to provide leadership in and commitment to the development and implementation of the City's asset management program. It is intended to guide the consistent use of asset management across the organization, to facilitate logical and evidence-based decision-making for the management of municipal infrastructure and to support the delivery of sustainable community services now and in the future.

The City will continue to review the current policy to see the progress of implementing this plan, as well as complete a maturity assessment and road map on how to further asset management and initiatives in the City. These recommendations have been included in Section 14 Improvement and Monitoring Plan.

1.2.2 Asset Management Stakeholders Roles & Responsibilities

Asset management is managed collectively between the Director of Corporate Services, Treasurer, Director of Public Works and Manager of Infrastructure. Key stakeholders are an integral part of the asset management planning process. They will aid in facilitating logical and evidence-based decision-making for the management of municipal infrastructure assets and to support the delivery of sustainable community services now and in the future. Having various key stakeholders will improve accountability and transparency to the community.

The current key stakeholders and their roles and responsibilities, as per the policy, include:

Council approves the AM policy and direction of the AM program. They maintain adequate organizational capacity and prioritize effective stewardship of assets.

The **CAO** provides oversight to the AM policy to ensure the AM program aligns with the City's strategic plan and provincial and federal regulations.

The **Executive Lead** (Director of Corporate Services or Designate) manages the policy and any updates, provides leadership in AM concepts and practices organization-wide, coordinates department staff and AM program implementation, and monitors levels of service.

The **Asset Management Team** develops policy and provides corporate oversight to goals and directions of the AM program to ensure it aligns with the City's strategic plan. They also develop and monitor levels of service, provide recommendations to Council and track AM program progress and results.

Departmental Staff participate in implementation task teams to carry out AM activities and implement and maintain levels of service. Staff provide support and direction for AM practices within their department, as well as track and analyze AM program progress and results.

It is recommended that the City further define roles and responsibilities for departmental staff for asset management specific tasks.

1.3 Alignment to the City's Vision, Mission, and Strategic Pillars

The City has developed the 2023-2026 Strategic Plan to illustrate the City's priorities and the actions planned to achieve these priorities. This includes the following statements and values:

Vision Statement:	**A healthy and vibrant waterfront community embracing growth for future generations.**
Mission Statement:	**To provide an exceptional small-town experience in a big way.**

Corporate Values: **Integrity, respect, inclusion, responsibility, collaboration.**

To support these statements, the City developed Strategic Pillars which outline specific actions the City will take to achieve their goals in each area. Our strategic pillars were developed to support our vision and mission statements, and they are canopied by the concepts of sustainability and accessibility. Connecting the three core areas of sustainability – environmental, social and economic – to the importance of accessibility (for all) gives the structure an overarching element and a lens through which to view our decisions, actions, and outcomes. This AMP supports the strategic objectives of the City of Port Colborne by connecting the levels of service developed in this AMP to the strategic pillars (as shown below in Figure 1-2). This AMP directly supports a number of strategic pillars referenced in the Strategic Plan and provides the plans for the effective and efficient management of the City Assets to advance all of the strategic pillars.

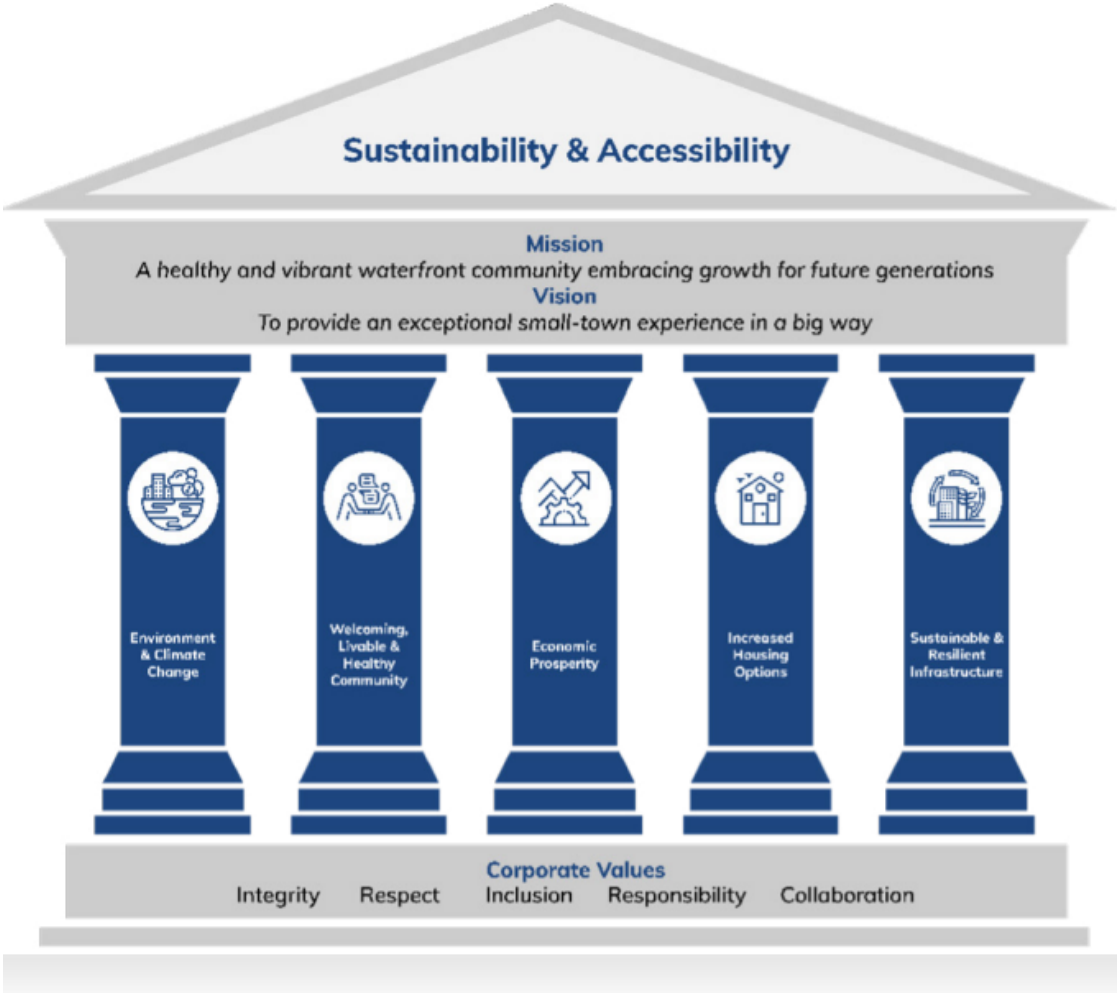


Figure 1-2. City of Port Colborne Strategic Pillars supported in this AMP

1.4 Development & Methodology of the Asset Management Plan

1.4.1 Asset Management Plan Scope

This Asset Management Plan (AMP) includes the following services:

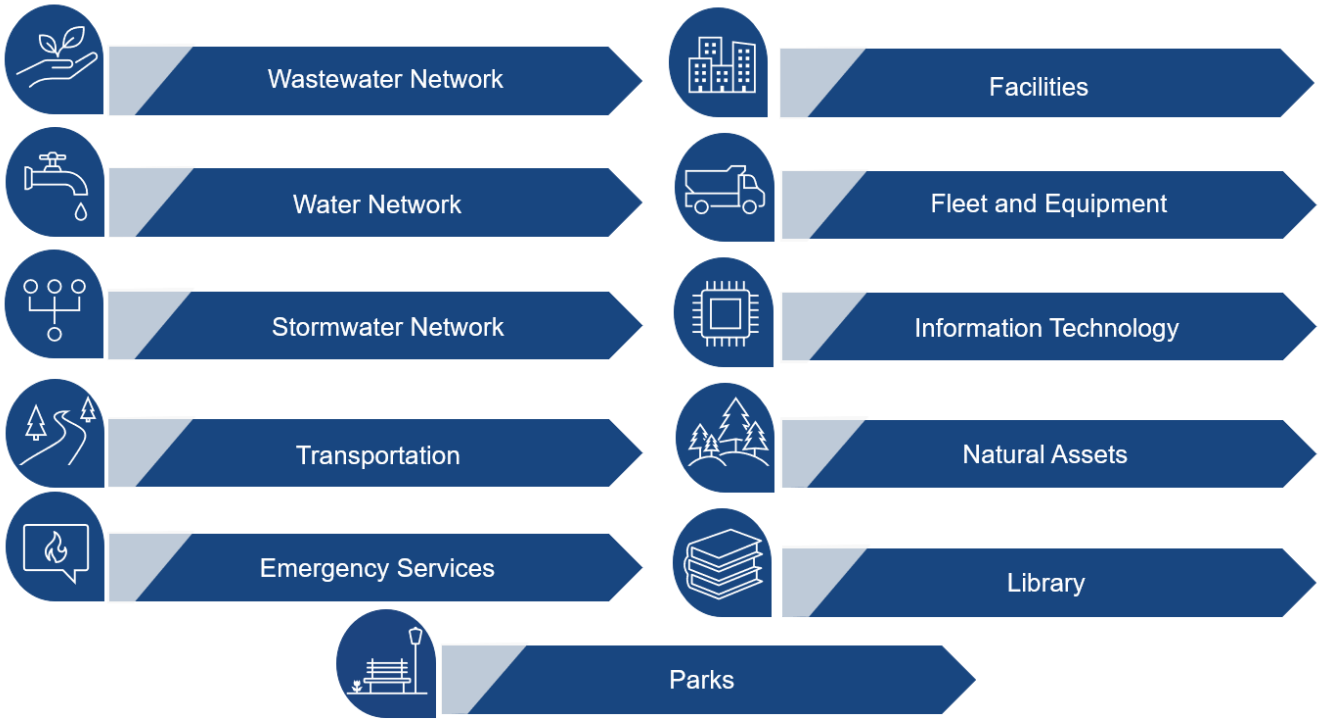


Figure 1-3. 2024 AMP Scope

Table 1-1 below outlines the types of assets included within each chapter of the AMP.

Table 1-1. Asset Management Plan Asset Scope

Asset Groups	Asset Types Included
Stormwater Network	Culverts, ditches, forcemains, leads, mains, outlets, ponds
Transportation	Bridge, culvert, parking lots, pedestrian bridge, retaining wall, right of way, roads
Wastewater Network	Forcemains, gravity mains
Water Network	Mains, meter, sample stations, bulk water station, water tower
Emergency Services	Equipment, fleet
Facilities	Corporate services, economic Development, fire, grain terminal, library, marina, museum, public works, recreation
Fleet and Equipment	Equipment, fleet
Information Technology	Hardware, software

Asset Groups	Asset Types Included
Library	Library collection, office equipment
Natural Assets	Stump, tree
Parks	Active transportation, park assets, parking lot, pavilion, playground structure, roadway, sport structure, sport surface, Spraypad, trail, walkway

1.4.2 Previous Plans and Studies

This AMP builds on the work completed in previous plans and studies to continually improve and enhance the accuracy of the plan. Previous plans and studies that have been used to inform this AMP include:

- **2022 Core Asset Management Plan:** The previous AMP reviewed all core infrastructure, and this AMP expands on this to include all City owned infrastructure assets. As well as the lessons learned from this plan.
- **2023 Infrastructure Needs Study:** The previous AMP highlighted the need for improved asset information, including condition assessments. The Infrastructure Needs Assessment was completed to provide the City with an actionable road map with an implementation schedule and budget based on updated condition data. Analysis included:
    - **Water Distribution INS:** Simulations of the existing water distribution hydraulic model were run to identify pressure and fire flow deficiencies throughout the system. The model outputs combined with an assessment of watermain material, watermain break data, age, and size were used to identify replacement and watermain upgrade needs. Recommendations included data collection, system analysis, watermain replacements, and new infrastructure improvements. This will be further augmented with the planned 2024 Master Plan, district metering analysis,
    - **Wastewater INS:** The objective of this assessment was used to assess current existing infrastructure condition, determine state of good repair needs, and identify capital projects needed to accommodate planned growth. Through this study, needs identified included data collection, system analysis, trenchless rehabilitation and new infrastructure projects, and wet weather management program. The City's existing CCTV data was analyzed for gaps and recommendations for improvements were included in this report.
    - **Stormwater INS:** Prior to the INS there was limited reliable data available on the storm system. Based on the recommendations of the INS, a condition assessment program for all storm sewers was initiated to collect updated GIS data as well as assess conditions of all pipes. Although the condition assessment program was not complete

at the time of the development of this AMP, data that was completed was used to inform this AMP. This data will be incorporated into the next AMP update in 2025

- **Roads INS:** A comprehensive roads need study was completed to allow staff to effectively allocate operating and capital funds to manage its road network. A key aspect of this study was to perform a network-wide road condition assessment using applicable MTO rating methodologies based on the surface type of the roadway. This study provided an updated Pavement Condition Index (PCI) score for each road segment of the road network.
- **Sidewalk, Guiderail, Bridges INS:** A sidewalk and guiderail inventory and condition assessment were completed as part of the INS to inform the City of major defects and general condition of these asset. The OSIM inspections provided updated condition assessment for Bridges.

- **Capital & Operating Budget:** The City's 2024 budgets were used to analyze the funding available for lifecycle management activities.

1.4.3 Future Plans, Programs and Studies

Future plans that will inform and further enhance the accuracy of future iterations of this AMP include:

- Water Master Servicing Plan and Model Calibration (Recommended in INS)
- Pollution Prevention Control Plan (PPCP) including updated Hydraulic Model (estimated to be complete in June 2024)
- Wastewater Flow Monitoring Program (Recommended in INS)
- Wastewater Wet Weather Management Program (Recommended in INS)
- Storm Master Servicing Plan

1.4.4 Asset Management Plan Structure & Methodology

The AMP is divided into chapters for each asset group listed above in Section 1.4.1 Asset Management Plan Scope. Each chapter outlines the State of the Infrastructure, Levels of Service, Lifecycle Management, Data Confidence, and Improvement Plan. The chapters are followed by the Financial Strategy and Improvement and Monitoring Plan for the City.

The methodology for each section is described below.

1.4.5 State of the Infrastructure

The State of the Local Infrastructure section provides a quantitative assessment of the infrastructure owned by the City. The primary objective is to provide a high-level inventory and insights on the

overall age, condition, replacement value, and key metrics of the assets owned by the City, as per O.Reg. 588/17. The information is developed based on provided datasets and documents that were assessed for data confidence and discussed with Subject Matter Experts (SMEs). This section summarizes the inventory of assets and their replacement values and provides the age and condition for assets in each chapter.

1.4.5.1 Asset Register

The asset register was developed by City staff, pulling information from multiple sources of information to compile the required information for asset management planning. Required information includes:

- Asset Identifier
- Install Date
- Current Replacement Value
- Estimated Useful Life
- Condition
- Asset type specific information

The resulting register, or inventory, provides the basis for the analysis completed for the asset management plan, including State of the Infrastructure, Levels of Service, and Lifecycle Management Strategies.

1.4.5.2 Current Replacement Value

Current Replacement Value (CRV) of an asset refers to the cost that would be incurred to replace the asset with a similar one. It represents the current market value of the asset, considering factors such as inflation and changes in market conditions. Determining the current replacement value is important for asset management purposes, as it helps the City assess the financial implications of asset replacement, and plan for future capital expenditures. It is best practice to include all costs required to a replacement and construct an asset with a comparable asset. It represents the current market value of the asset, considering factors such as inflation and changes in market conditions. Determining the current replacement value is important for asset management purposes, as it helps the City assess the financial implications of asset replacement, and plan for future capital expenditures. It is best practice to include all costs required to a replacement, and construct, an asset with a comparable asset. Where required, these costs may include engineering and design, project management, materials, and labour.

City staff have undergone a lengthy process to review, assess and update CRVs across all asset categories for the purposes of this AMP. To update these values, several strategies have been leveraged, including market assessment, analyzing recent contracts of similar assets, staff expertise,

engineering estimates and professional appraisals. This is an on-going effort, which will be continually improved upon for asset management purposes.

CRVs used in this AMP represent the best available information for the development of this document and will continue to be evaluated and updated as required prior to the 2025 AMP. Current market conditions have been reflected in this AMP, and in some cases are dramatically different than those provided in the previous AMP. There is no growth, technology change, or enhancement assumptions included in those costs (unless identified).

1.4.5.3 Estimated Service Life

Estimated Service Life in asset management planning refers to the anticipated duration over which an asset is expected to remain operational and provide its intended function. This estimate may be based on various factors such as design specifications, historical performance data, maintenance practices, environmental condition, and technological advancements. The purpose of estimating service life for asset management planning is to enable organizations to allocate resources for maintenance, repairs, replacements, and new acquisitions over the asset's lifecycle. It allows for budgeting long-term capital expenditures through replacement planning, risk management, optimizing maintenance and performance evaluation.

For the purposes of this AMP, staff reviewed and assessed estimated service lives to ensure appropriate values were used to ensure accurate forecasting for infrastructure spending needs.

1.4.5.4 Asset Condition

Assigning condition ratings to assets a across each asset category using a consistent rating scale is a crucial step in asset management. By using standardized scales, the City of Port Colborne can facilitate benchmarking with other Canadian municipalities and gain insights into the overcall condition of its assets, regardless of asset category. Condition ratings scale consists of a numerical or categorical value that represents the condition of the assets.

Within this AMP, condition ratings were assigned based on numerous methods, and then standardized into condition rating scale of Very Poor to Very Good. Where condition assessment data was available, these condition values were used and input into the condition rating scale, which are described in the category chapters.

Where assessed condition was not available, condition of an asset was assessed based on its remaining life compared to its age and estimated service life. This assessment involves categorizing the percentage of remaining life into different condition categories, as outlined in Table 1-2useful life. This assessment involves categorizing the percentage of remaining life into different condition categories, as outlined in Table 1-2.

Table 1-2. Condition Rating Scale

Condition	Age/ESL	Description
Very Good	>80% life remaining	The asset is fit for the future. It is well maintained, in good condition, new or recently rehabilitated.
Good	60-80% life remaining	The asset is adequate. It is acceptable and generally within the mid-stage of its expected service life.
Fair	40-60% life remaining	The asset requires attention. The asset shows signs of deterioration, and some elements exhibit deficiencies.
Poor	20-40% life remaining	There is an increasing potential for its condition to affect the service it provides. The asset is approaching the end of its service life, the condition is below the standard and a large portion of the system exhibits significant deterioration.
Very Poor	0-20% life remaining	The asset is unfit for sustained service. It is near or beyond its expected service life and shows widespread signs of advanced deterioration. Some assets may be unusable.
Unknown		Not enough data exists to determine condition.

1.4.6 Levels of Service

Levels of service (LOS) are measures for what the City provides to its customers, residents, and visitors. They support the organization's strategic goals and are derived from customer needs and expectations, Council objectives, City polities, legislative and regulatory requirements, standards, along with the financial capacity of the municipality to deliver those LOS.

The Levels of Service (LOS) section provides key performance indicators that support the provision of the respective service for each City asset group. O.Reg. 588/17 has prescribed LOS for core assets, only. Remaining assets LOS were developed by City staff. In general, LOS provide the following information:

- **Level of Service Statement:** A brief description presented in plain language for public understanding of the service provided by each asset category to residents based upon the City's core values and mission.
- **Key Service Attribute:** Categorizes the LOS metrics to specific areas of customer interest which are recognizable to the customer/public. These attributes are tied to the strategic objects of the City. See Table 1-3 for the City's Key Service Attributes.

Table 1-3. Strategic Pillars and Key Service Attributes

Service Attributes	Description	Supported Strategic Pillars
Accessible & Reliable	Services are convenient, reliable and available to the whole community with minimal service disruptions. Service Requests are responded to promptly.	✓ Welcoming, Liveable, Healthy Community ✓ Sustainable & Resilient Infrastructure
Cost Efficient	Services are managed cost-effectively for the expected level of service.	✓ Economic Prosperity ✓ Sustainable & Resilient Infrastructure
Safe & Regulatory	Services are provided that are safe and compliant with all regulatory requirements.	✓ Environment and Climate Change ✓ Sustainable & Resilient Infrastructure

Levels of Service Metrics (Community and Technical): A statement that describes quantifiable metrics of the service delivery outcomes from the perspective of the customer and service provider, expressed in terms that can be easily understood by customer.

These metrics serve multiple purposes:

Assessment of Customer Expectations: The metrics chose represent benchmarks or targets that reflect the level of service customers expect to receive. These may include factors such as response times for service requests, reliability of service delivery, water quality standards, and measures related to flood prevention or management.

Internal Reporting: The metrics can be used for internal reporting purposes within the City department or the broader city administration. These indicators provide a way to track and monitor the performance of the infrastructure and services. They may include metrics such as infrastructure condition performance, efficiency, compliance with regulatory standards, and operational costs.

Assessment of Assets: Both customer and technical metrics serve as tools to assess the overall effectiveness and performance of the City's assets. By tracking these indicators, the City can evaluate whether the infrastructure investments and operational strategies are meeting their intended goals.

This AMP assesses the current performance of the City using these levels of service metrics (which is based on data from the previous calendar year). The 2025 AMP will provide proposed (target) performance of these same metrics and evaluate the City's ability to afford the proposed levels of service.

1.4.7 Lifecycle Management Strategy

Within the Lifecycle Management Strategy sections of this AMP, defines the set of planned actions that will enable the assets to provide their desired level of service in a sustainable way while mitigating risks and reducing costs throughout their life. Lifecycle activities are important as they work together to extend the asset life, reduce overall lifecycle costs, and achieve other objectives such as environmental goals and balancing risk. The goal of this assessment is to capture the activities that are required to sustain the assets within each asset category.

1.4.7.1 Lifecycle Management Activities

Lifecycle management activities are categorized to summarize the various lifecycle activities that asset owners complete during the lifecycle of an asset. For the purposes of this plan, the lifecycle activity categories are as follows:

- **Non-Infrastructure Solution:** Actions or policies that can lower costs and contribute to the management of assets.
- **Operations & Maintenance Activities:** Including regulatory scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.
- **Renewal/Replacement Activities:** Significant repairs designed to extend the life of the asset, or activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehab is no longer an option.
- **Disposal Activities:** Associated with disposing of an asset once it has reached the end of its useful life or is otherwise no longer needed by the municipality.
- **Service Improvement:** Planned activities required to extend services to previously unserved areas or expand services to meet growth demands to maintain LOS.
- **Growth Activities:** Planned activities to improve LOS. Example, an asset's capacity, quality, or system reliability. Not driven by growth needs.

The lifecycle activities for each asset class are detailed in the individual asset category chapters. These activities are aligned with the asset hierarchies and includes the frequency at which they are performed in terms of the assets' Estimated Service Life. Each asset type is unique in the needs for the activities that are completed within the asset's lifecycle.

1.4.7.2 Lifecycle Management Strategies and Forecast Scenarios

The goal of asset management is aims to analyze and prepare for the entire lifecycle cost of asset ownership. The scope and assumptions of the lifecycle forecasts included in this AMP are as follows:

- The AMP focuses to identify renewal, rehabilitation and replacement needs for infrastructure investments.

- Expenditures required for the remaining lifecycle activities (non-infrastructure, service improvements, operations and maintenance, and growth) are assumed to be adequate to meet the needs of the City, based on the Operating and Capital Budget. These activities have been captured to analyze the full lifecycle cost of asset ownership.
- The forecast does not assume any increases in current funding over the forecast period for these activities. This is outside the scope of this AMP.
- Costs for non-infrastructure, service improvements, operations and maintenance and growth, in particular the costs for operations and maintenance, may not be reflective of actual operational needs and should be further analyzed.

To appropriately forecast the expenditure needs of each asset category, the lifecycle activities were reviewed for all Renewal, Rehabilitation, and Replacement activities, and developed to lifecycle management strategies to be applied in the forecasts outlined below. Each of the scenarios outlined in Section 1.4.3.7 consider only the asset renewal, rehabilitation, and replacement activities. These activities are crucial for ensuring that infrastructure remains in a state of good repair to continue to provide services to the community.

1.4.8 Funding the Lifecycle Activities

O.Reg. 588/17 requires a 10-year plan that selects the lowest cost life cycle activity that will maintain service levels over the plan period. This AMP will provide a 20-year plan. For the purposes of this AMP, the analysis is completed using the assumption that maintaining the current performance (condition) of assets, will ensure that the City continues to provide service levels moving forward. As part of the Lifecycle Management Strategy, an assessment is also completed to understand not only the costs associated with the lifecycle activities, but to also forecast the performance (condition) of the City's assets over the next 20 years. Three forecasting scenarios are run to analyze the City's assets, which provide insight on the City's ability to continue to provide services into the future. This is achieved by comparing the performance of assets based on needs and various budgetary or condition-based targets. The following three scenarios are run:

Scenario 1: Anticipated Funding Model – Evaluates asset performance under the anticipated funding level that the City anticipates allocating towards each asset category. The anticipated budgets were obtained from the City's 2024 capital and operating budget, as well as based on the capital expenditures required based on the Infrastructure Needs Study. This scenario assumed that the funding will be made available as outlined in this AMP.

Only renewal, rehabilitation and replacement activities are completed that fit within the current funding allotted to the asset category as part of this forecast.

Scenario 2: Maintain Current Performance (Level of Service) – This scenario determines the cost that would be required to maintain the City's assets in approximately the same condition they are currently assessed in over a 20-year forecast period. Understanding the cost to maintain current

performance levels is a requirement of O.Reg. 588/17. For the purposes of this AMP, the current performance (condition) of the assets is used to determine the current level of service. The 2025 iteration of this AMP will require a further scenario, where the City will set targets to the level of service.

Scenario 3: Infrastructure Needs as Per Lifecycle Strategies – This scenario is run to determine the required spending for the 20-year period to address infrastructure needs based on expected/planned rehabilitation, renewals, and replacements of assets as per their defined lifecycle strategy. This scenario also identifies rehabilitation and replacement requirements backlog, which is work that should have already been completed by the time of this assessment. Typically, these are assets that are beyond their identified service life.

This scenario is not constrained by a budget, so any work that was planned based on the asset's lifecycle strategies are completed in the year it was triggered. Unlike the second scenario, the condition levels were not held to a specific target LOS, so the percent of asset value that fell into each condition grade varies based on where in their lifecycle the assets fall.

Using the results of these scenarios, the Financial Strategy was developed.

1.4.1 Data Confidence and Improvement Plan

Each asset category will provide information on the data confidence and improvement plan specific to that asset category. This information will provide further information on the sources used to develop the asset register and provide a data quality grade based on the criteria outlined below in Table 1-4. Improvements for the data included in the chapter will then be provided.

Table 1-4. Data Confidence Rating Scale

Data Quality/Reliability Rating	Data Accuracy
Very Good	No assumptions, with available condition data from a reliable data source, and age and current replacement value are known.
Good	Minor assumptions are made for condition, age, or replacement values (e.g. most of condition, age, and replacement values are known). Data sources are reliable and updated.
Fair	Assumptions are made for condition, age, or replacement values from moderately reliable sources.
Poor	Data comes from significantly out of date documents, data sources are moderately reliable, or values are unknown or unreliable.

1.4.2 Financial Strategy

The Financial Strategy is one of the key components within the AMP, as it puts the AMP into action. The financial plan provides a way for municipalities to integrate asset management planning with financial budgeting.

The Financial Strategy forecasts the total required annual expenditures for the City to perform the lifecycle activities in alignment with the scenarios to maintain current performance and meeting infrastructure needs as per the lifecycle management strategies developed.

The scenarios for each asset category will be combined to assess the City's forecasted expenditures to understand the full cost of maintaining service levels and meeting infrastructure needs over the 20-year forecast period. Forecasts for expenditures will be compared to the capital budget forecasts to determine if an infrastructure gap is present. Strategies to address this gap will also be discussed.

Note that forecasts for major capital works including renewal/rehabilitation and replacement activities are derived from analysis of the data provided by the City, the level of service metrics developed with City staff, and the lifecycle strategies developed with subject matter experts based on best practices. For other costs, such as maintenance, and non-infrastructure and service improvements, the assumption was made the funding levels for these activities is enough to meet customer's expectations, unless there are documents or strategies that suggest otherwise.

1.4.3 Improvement and Monitoring Plan

As the City matures in their Asset Management journey, the processes for Asset Management Planning will continue to evolve and improve. Within the Category chapters, the data confidence and improvement plan provide category specific opportunities for improvements, while the Improvement and Monitoring Plan will speak to the opportunities for maturity on a city-wide or program level.

1.5 Asset Management Plan Assumptions and Limitations

This Asset Management Plan was developed based on the best available information and by employing professional judgement and assumptions to address gaps where necessary. Asset specific assumptions are recorded in the category chapters.

Where gaps or opportunities were identified, they have been included in the improvement plan.

Assumptions:

Scope

- The scope of this AMP covers the assets directly owned by the City of Port Colborne.

Costs

- All costs (including in the financial forecast) are presented in 2024 dollars, unless specified otherwise.

- Service improvement to an asset is generally not included in replacement costs. Some exceptions include if it is standard practice to upgrade infrastructure such as replacing a cast iron pipe with PVC.
- The cost of climate change has not been included in replacement costs identified in this AMP. Unexpected events such as severe storms attributed to climate change can cause immediate infrastructure replacement/renewal needs not identified in this AMP. Also not included are the likely effects climate change will have on the estimated useful life of the assets.

Risk

- The City has not implemented an asset risk management strategy that goes beyond legislative requirements for all assets. This will continue to be reviewed and enhanced for future iterations of the plan.

Budgets

- It is assumed that the projected capital budgets and expected available reserve funds will occur as planned over the period of analysis.
- This AMP assumes that the anticipated budgets are sufficient to meet current needs for non-infrastructure, operations and maintenance, growth, and service improvement activities to maintain current levels of service.

1.6 Asset Management Pressures

The management of public assets faces various pressures that can impact its operations, strategies, and overall success. Some of these pressures include:

- **Market Volatility:** Asset managers must navigate constantly changing market conditions, including fluctuations in asset prices, and interest rates. Market volatility can make it challenging to appropriately plan for future asset needs.
- **Regulatory Changes:** Municipalities are often subject to a wide range of regulations that can vary by jurisdiction. Changes in regulations, such as those related to reporting requirements, can require asset managers to adapt their processes and systems.
- **Budget Constraints & Funding Options:** Municipalities often operate within tight budget constraints, limiting their ability to invest in infrastructure maintenance, upgrades, and new projects. Balancing competing priorities within limited budgets. Municipalities must explore various funding and financing options to support asset management initiatives, and other infrastructure needs. Identifying sustainable funding sources and securing financing on favourable terms can be challenging.

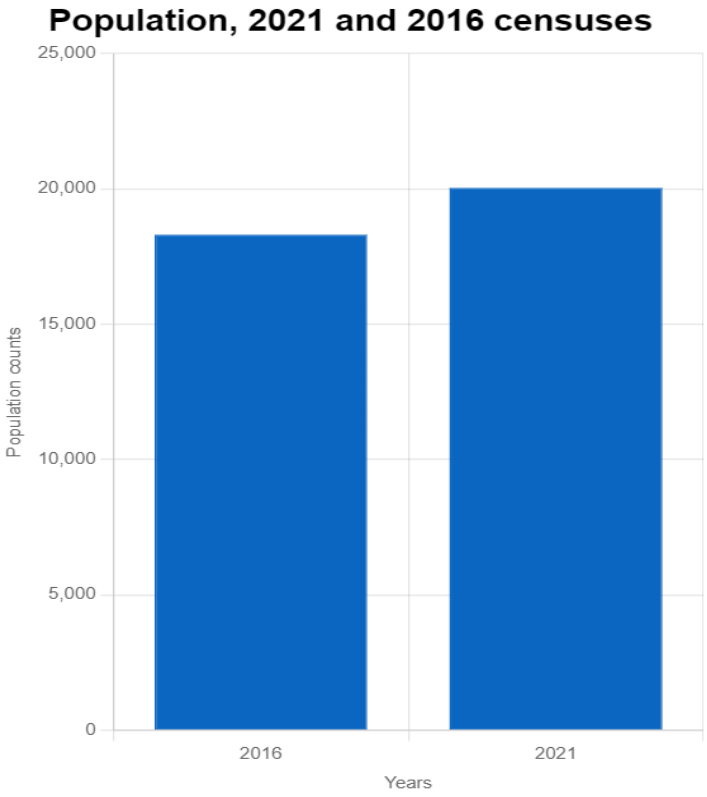
- **Population Growth and Urbanization:** Growing populations and urbanization place increased strain on municipal infrastructure and services. Municipalities must manage the demands for housing, transportation, utilities, and public amenities while ensuring sustainable development, and balancing the current asset portfolios.
- **Aging Infrastructure:** Many municipalities face aging infrastructure. Maintaining and upgrading this infrastructure requires significant investment, but funding may be insufficient to address all needs.
- **Environmental Regulations:** Municipalities must comply with environmental regulations related to air, water quality, waste management and land use. Meeting these regulations often requires investment in infrastructure upgrades and environmental mitigation measures. There is also significant staff time required for data tracking and reporting to ensure compliance.
- **Climate Change and Natural Disasters:** Climate change poses significant challenges for municipal asset management, including increased risk of extreme weather evens such as floods and storms. Municipalities must invest in resilience measures to protect infrastructure and communities from climate-related risks.
- **Limited Human Resources:** Municipalities may face challenges in recruiting and retaining qualified staff with expertise.
- **Political and Public Pressure:** Asset management decisions are often subject to political and public scrutiny. Balancing the needs and preferences of various stakeholders, including elected officials, residents, and businesses can be complex and contentious.
- **Data Management and Technology Adoption:** Effective asset management relies on accurate data collection, analysis, and decision-making. This requires reliable asset data, and implementing systems and processes that leverage technology to optimize asset performance.
- **Resilience and Sustainability Goals:** There are increasingly greater pressures to prioritize resilience and sustainability in asset management practices. This includes incorporating green infrastructure, renewable energy, and sustainable transportation solutions into asset planning and management.

Overall, municipal asset management requires navigating a complex landscape of financial, regulatory, environmental, and social pressures to effectively manage infrastructure and deliver services to residents.

1.7 Growth and Climate Change

Growing populations and urbanization place increased strain on municipal infrastructure and services. Municipalities must manage the demands for housing, transportation, utilities, and public amenities while ensuring sustainable development, and balancing the current asset portfolios. Development Charges (DCs) help to fund projects that are triggered by an increase in population. Where available, demographic and employment forecasts also inform asset.

The Canada Census information published in 2021 indicated that Port Colborne's population has increased from 18,306 in 2016 to 20,033 which represents a change of 9.4% (See Figure 1-4. Population Increase). Future growth will continue to be analyzed for the increase required of service and asset capacity needs, resulting in demand for new and/or enhanced municipal infrastructure construction. Any known activities required to accommodate growth have been identified in the infrastructure needs scenarios within the asset chapters. Upon completion of the Development Charge Study, and future master plans, this information will be expanded upon in future iterations of the AMP.



Climate change is increasingly impacting the communities and the infrastructure, making it crucial to mitigate and adapt to current and future changes in order to grow and protect the community into the future. Climate hazards are speeding up asset deterioration, according to a 2023 report titled "Costing Climate Change Impacts to Public Infrastructure" by the Financial Accountability Office (FAO) of Ontario. This means that more capital investments will be required for more frequent rehabilitations and early renewals, as well as increased pressure on operations and maintenance (O&M) activities. According to FAO projections, in the absence of any adaptation approaches, climate change will result in an increase in the annual maintenance costs of the $708 billion portfolio of current public infrastructure assets throughout the Province of Ontario by an average of $4.1 billion Figure 1-5.

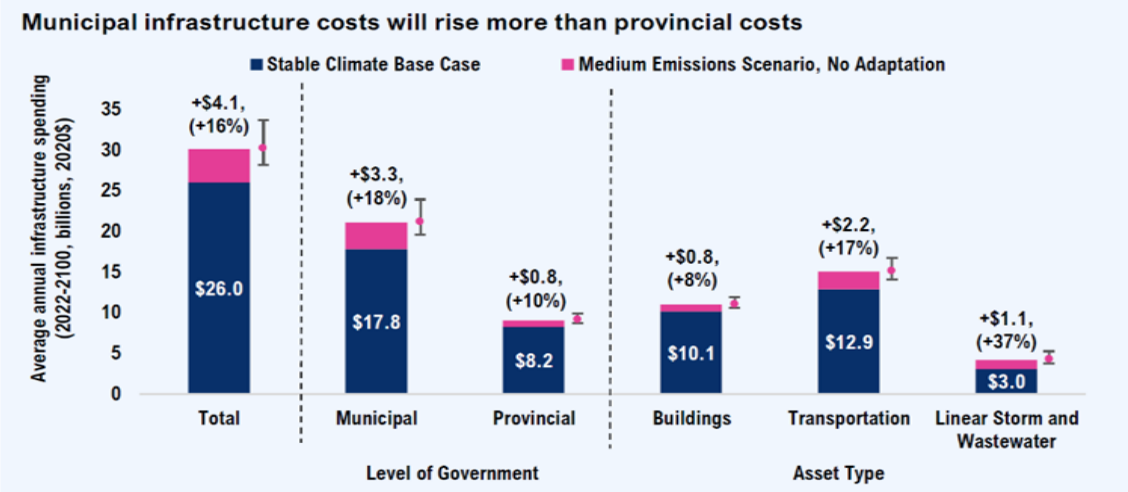


Figure 1-5. Infrastructure Cost Increase Analysis per Level of Government and Asset Type (Source: FAO report Costing Climate Change Impacts to Public Infrastructure)

The City of Port Colborne has been engaged in various efforts to mitigate and adapt to climate change, some of which include:

1. **Emissions Reduction Initiatives:** Implementing strategies to reduce greenhouse gas emissions from municipal operations, such as transitioning to renewable energy sources, and improving energy efficiency in buildings. The City's first Energy Conservation and Demand Management Plan (ECDM Plan) was approved by Council in 2014 and have set out goals for the 2019-2024 Plan which includes:
    - 10% reduction in annual energy intensity
    - 25% reduction in electricity used by computer servers
    - 200,000kWh reduction from electricity consumption associated with lighting and plug load
    - 15% reduction of yearly kwh/HDD
2. **Climate Action Plans:** Developing and implementing comprehensive climate action plans that outline specific goals, targets, and actions to reduce carbon emissions, and enhance resilience to climate impacts.
3. **Community Engagement:** Engaging residents, businesses, and community organizations in climate action efforts through education, outreach campaigns, and partnerships to raise awareness and encourage behavioural change.
4. **Monitoring and Reporting:** Tracking progress towards climate goals, monitoring key indicators such as emissions, energy consumption, and adaptation measures, and reporting results to stakeholders to ensure transparency and accountability.

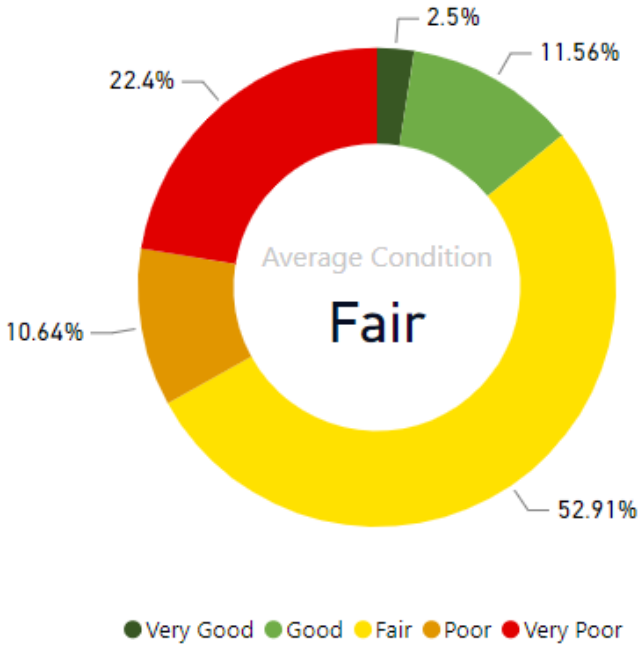
By systematically costing climate change impacts to our infrastructure, decision-makers can better understand the financial implications of climate risks, prioritize investments in adaptation and mitigation, and optimize resource allocation to enhance the resiliency of infrastructure systems.

2 Wastewater Network

Replacement Value

$263,027,193 M

Overall Average Asset Condition



Quick Facts

The Wastewater Network maintains:

- 92 km of gravity mains and forcemains including associated assets such as manholes, laterals, and cleanouts

2 Wastewater Network

Wastewater collection services are provided to the City under a "two-tier" system whereby the Niagara Region is responsible for the operation and maintenance of the Seaway Wastewater Treatment Plant, 17 pump stations and related forcemains, and some trunk sanitary sewer mains. The City operates and maintains 90 km of wastewater gravity mains. Wastewater is collected from properties within the City's urban area which flow by gravity to the Region's pump stations which direct flow to the treatment plant where it is treated before being discharged to the Welland Canal.

Like many other municipalities, the City's wastewater collection system is greatly impacted by wet weather which causes extraneous flow to enter the system through defects in the infrastructure and direct or indirect connections. Less than half of the City's urban centre is serviced by storm gravity mains, which normally collect runoff from precipitation. Thus, when many areas were developed, some private infrastructure such as downspouts and sump pump discharges were directed to the wastewater system. Finding and repairing system defects and separating storm flow from the wastewater network are two priority issues for the City to improve the reliability and efficiency of the system. Less stormwater flow entering the wastewater system reduces the likelihood of basement flooding, system overflows, and the cost of treating the flow.

2.1 State of the Infrastructure

2.1.1 Asset Inventory and Valuation

The Wastewater Network includes gravity mains, and forcemains with a total estimated replacement value of $263 million. Table 2-1 below details the inventory and the current estimated replacement value by asset type.

Table 2-1. Asset Inventory and Estimated Replacement Values - Wastewater Network

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Gravity Mains	90,587	m	$258,683,694
Forcemains	1,693	m	$4,343,499
Total			**$263,027,193**

2.1.2 Asset Condition

Condition was assigned to the wastewater network using PACP scores (for mains that have CCTV inspections completed) or using age/estimated service life. A description of the condition rating scale can be found in Table 2-2.

Table 2-2. Condition Rating Scale – Wastewater Network

Condition	Age/ESL	PACP Condition Rating
Very Good	>80% life remaining	1: Failure unlikely in foreseeable future (RSL = 35)
Good	60-80% life remaining	2: Pipe unlikely to fail for at least 20 years (RSL = 25)
Fair	40-60% life remaining	3: Pipe may fail in 10-20 years / Grade 3 (RSL = 15)
Poor	20-40% life remaining	4: Pipe will probably fail in 5 – 10 years (RSL = 7)
Very Poor	0-20% life remaining	5: Pipe failed or likely to fail within 5 years (RSL = 2)
Unknown		

The City has implemented a CCTV program on a 6-year cycle which means 16.7% of the system is flushed and inspected annually and all gravity mains are inspected once every six years. Through the Infrastructure Needs Study the specifications for the CCTV data collection were updated to be in line with industry best practices. It is recommended that the City follow the updated specifications and continue it's efforts to obtain CCTV data for it's wastewater system. Data management is a critical component of a successful CCTV and sewer rehabilitation program.

Wastewater network overall condition by replacement value can be seen in Figure 2-1 below. The condition distribution of the wastewater assets has drastically changed from the previous AMP, where age was mostly used to determine condition. The methodology of how the CCTV data is used was also updated to enhance the accuracy of the information within this AMP. The previous AMP took an overall condition rating from the PACP ratings, which were not assessed for likelihood of failure. The methodology to assign condition for this AMP were adjusted to provide a more accurate assessment, which used likelihood of failure calculated based on NASSCO methodology from the structural score, which provides an assessed remaining life (which differs from actual age and remaining life). Age-ESL was then applied as per Table 2-2.

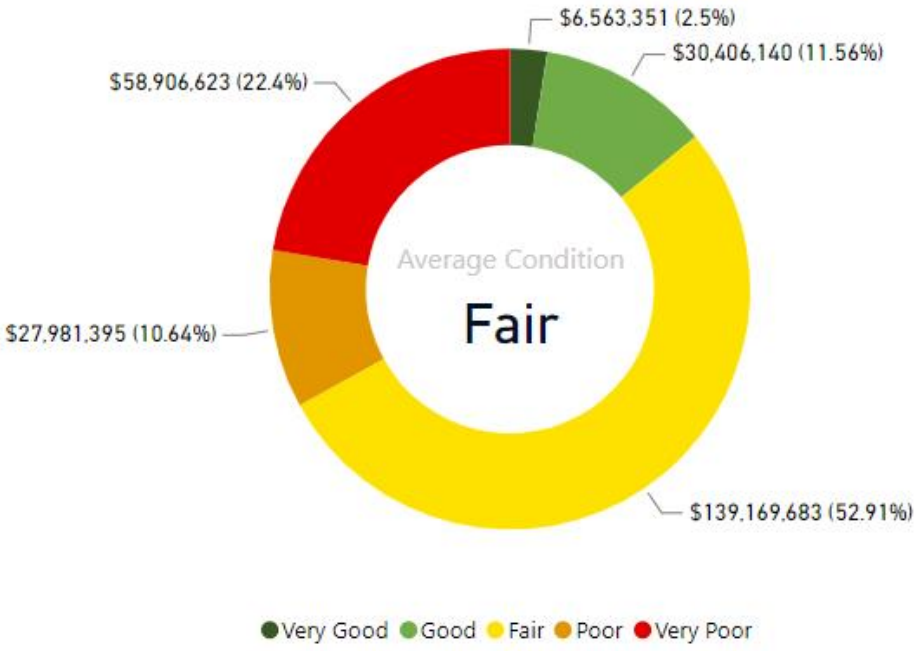


Figure 2-1. Asset Condition by Replacement Value – Wastewater Network

Wastewater Network assets are on average in **fair condition**. With over 66% of assets are in fair or better condition. Figure 2-2 shows a breakdown of condition by replacement value by asset type.

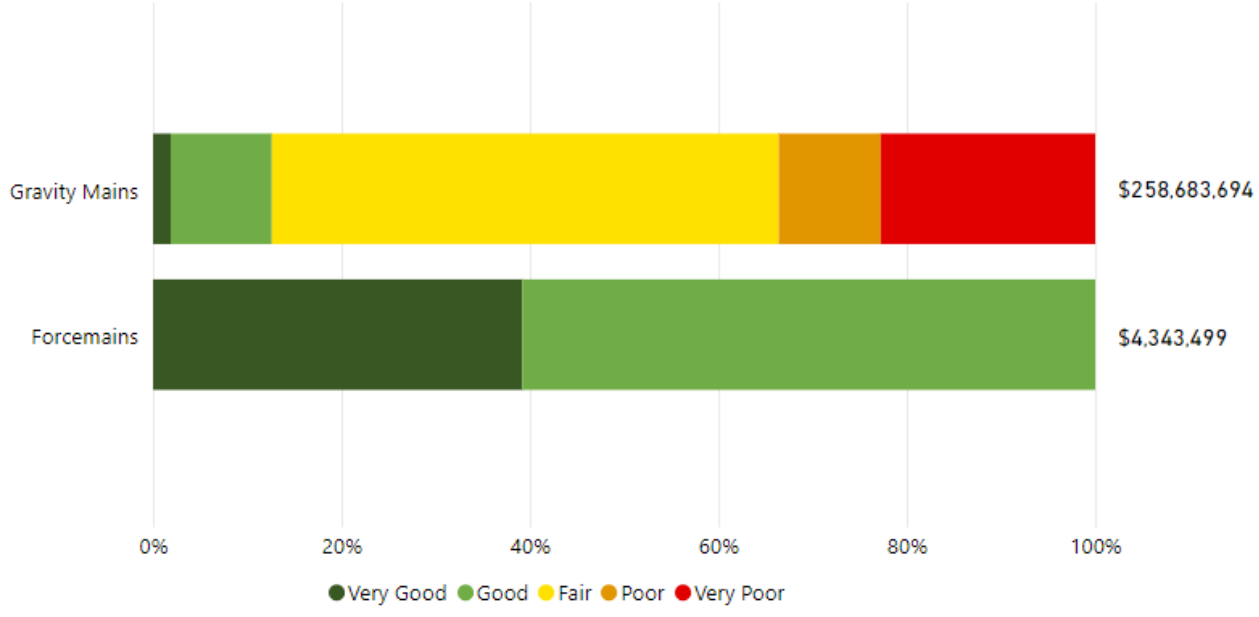


Figure 2-2. Asset Type Condition by Replacement Value – Wastewater Network

While forcemains are in good to very good condition, the large majority of gravity mains are in fair or worse condition. Approximately 48% of gravity mains condition is based on CCTV inspection PACP scores.

The City is continuing its efforts to obtain reliable CCTV ratings for the wastewater system. Future iterations of this AMP will be enhanced as updated information is made available. The work that was done as part of the Infrastructure Needs Study has been used to better inform this AMP.

2.1.3 Average Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Wastewater Network assets. The average age and average estimated service life for gravity mains and forcemains in the wastewater network can be seen below in Figure 2-3. The average age of gravity mains and forcemains is lower than the average estimated service life.

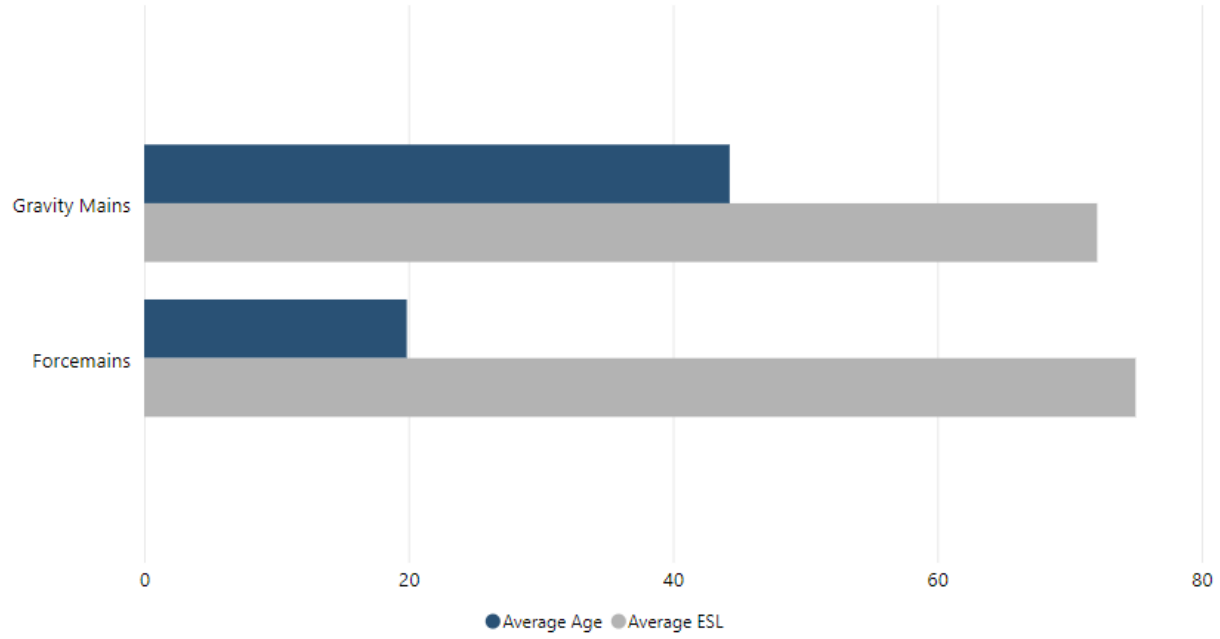


Figure 2-3. Average Age and Average Estimated Service Life – Wastewater Network

2.2 Levels of Service

Service Statement: Provide reliable and cost-efficient wastewater services while protecting the environment and the community.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 2-3 and Table 2-4 provide a summary of the community and technical levels of service metrics for the City's Wastewater Network. These are segmented into those that are required under the O.Reg.588/17 and other levels of service metrics that are defined by the City. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Wastewater Network assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

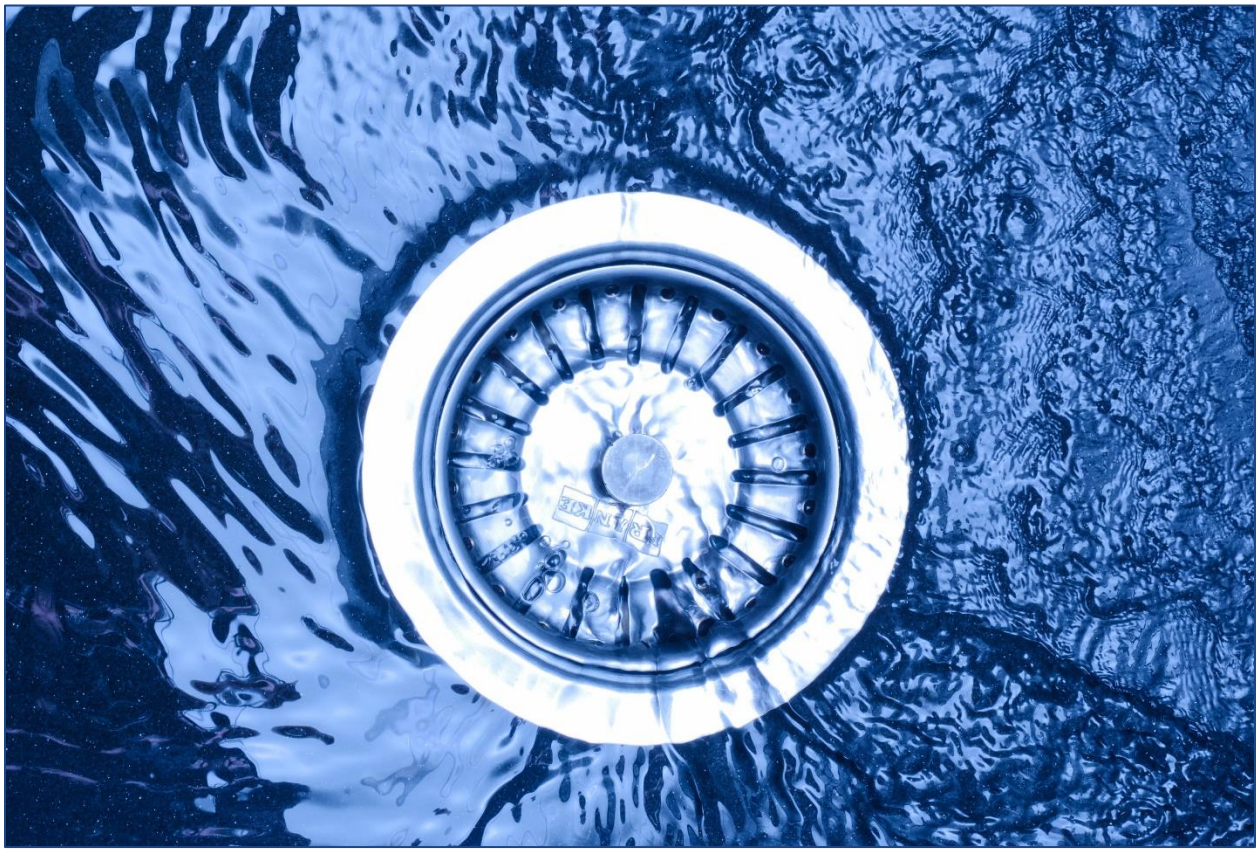


Table 2-3. Community Level of Service– Wastewater Network

Key Service Attribute	Performance Measure	Current Performance
Regulatory		
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system	The wastewater collection system is comprised of 90 km of sewer mains within the urban area which drain to the Region's pump stations for conveyance to the Seaway. Wastewater Treatment Plant. The Region owns and maintains 17 pump stations within the City. See Appendix A.
Scope	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.	N/A
Reliability	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches.	N/A
Reliability	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 enters the sanitary system through cracks, offset joints, maintenance hole covers, and private lateral defects. Parts of the system have connected downspouts and sump pump discharges.
Reliability	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events such as those listed above	Stormwater enters the sanitary system through cracks, offset joints, maintenance hole covers, and private lateral defects. Parts of the system have connected downspouts and sump pump discharges.

Key Service Attribute	Performance Measure	Current Performance
Reliability	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	This regulatory metric is not applicable to the City as the sewage treatment plants are owned and operated by the Regional Municipality of Niagara.
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	26%

Table 2-4. Technical Level of Service–Wastewater Network

Key Service Attribute	Performance Measure	Current Performance
Regulatory		
Scope	Percent of properties in City connected to the municipal wastewater system	67.34%
Reliability	The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system.	N/A
Reliability	# of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
Reliability	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	N/A
City Defined		
Accessible & Reliable	Percent of wastewater systems flushed and CCTV inspected annually	16.70%
Accessible & Reliable	Percent of replacement value of wastewater assets in very poor condition	22.4%
Accessible & Reliable	Percentage of inflow and infiltration in the sanitary sewer system (estimated using difference between billed wastewater volumes and wastewater received at treatment plant).	80
Cost Efficient	Reserve balance as percentage of target	Future Metric

2.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within the Wastewater Network.

2.3.1 Lifecycle Activities

Lifecycle activities for Wastewater Network assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that wastewater assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 2-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 2-5. Asset Management Practices and Associated Frequency – Wastewater Network

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Pollution Prevention Control Plan (PPCP)	• Every 5 years / as required
• Smoke testing	• As required
• Flow monitoring	• Annually
• Update/review of design standards	• As required
• Inflow and infiltration	• As required
• Operations and Maintenance Plan	• Annual review
Operations & Maintenance Activities	
• CCTV inspection and flushing / cleaning	• Annually
• Spot repairs / grouting	• As identified
• Renewal/Replacement Activities	• Annually
• Trenchless re-lining	• As per program
• Replacement of gravity mains	• As identified
• Replacement of remaining assets	• As identified
Disposal Activities	
• Removal of gravity mains through standard construction practices	• As required
• Removal or manholes through standard construction practices	• As required

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• Removal or remaining assets through standard construction practices	• As required
Service Improvement & Growth Activities	
• Pipe upsizing	• As required
• Expansion to support growth	• As required (e.g. development)

2.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 2.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 2.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

As the City is working on better understanding the wastewater system, it is expected the condition profiles of this asset system will change drastically once all the data has been collected to better inform this plan. The updated condition information will also assist in developing appropriate lifecycle strategies to address this asset category and to better protect public and private land from flooding.

2.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs of the asset category based on the wastewater financial plan. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Wastewater Network is $2.2 million. The condition distribution for the anticipated budget scenario can be seen in Figure 2-4. The condition distribution shows that assets in very poor condition decreases over the forecast period, starting at just over 19% and ending the forecast at 0%. With the

current anticipated funding, the overall condition of Wastewater Network assets improves. This performance forecast highlights the challenges the City may face in keeping up with infrastructure needs and ensuring assets are in a state of good repair.

The City is currently undergoing a project to better understand the condition of the wastewater system and will continue to enhance the lifecycle strategies and budget to meet the needs of the wastewater system to improve this asset system.

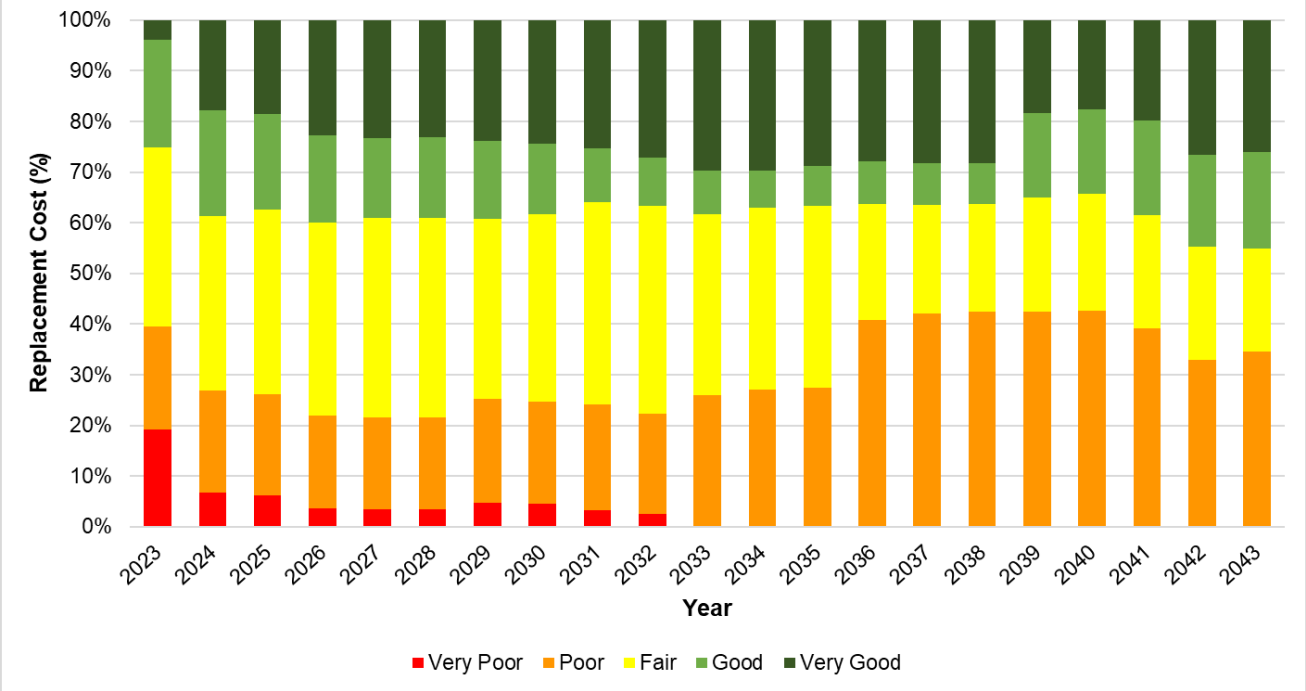


Figure 2-4. Wastewater Network Performance Forecast with Current Funding

2.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Stormwater Network asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $957K for renewal and replacements is needed to maintain the current performance (condition/level of service) for Wastewater Network assets. The condition distribution for the cost to maintain LOS scenario can be seen below is Figure 2-5. Assets in poor to very poor condition increases slightly during this scenario, while assets in good to very good remain fairly constant.

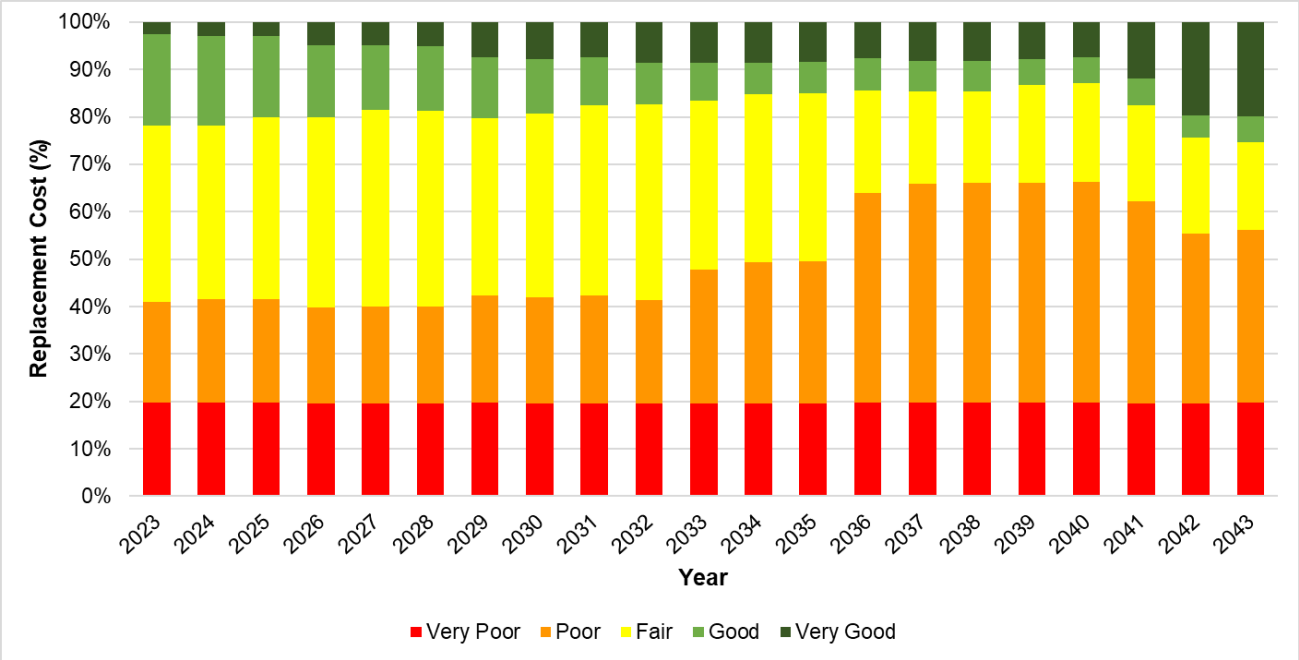


Figure 2-5. Wastewater Network Performance Forecast to Maintain Levels of Service

2.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. The Infrastructure Needs Study was used to inform the strategies and recommended needs for the wastewater system, which is further explained in the aforementioned report. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $2.1M is required for this scenario. There is no anticipated funding gap compared to the anticipated budget allocation in the Wastewater Network. The condition distribution for Wastewater Network assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 2-6. With this scenario the overall asset condition profile significantly improves and removes any assets in very poor condition.

As new information is available, the lifecycle strategies will continue to evolve to be more concise and will improve the accuracy of this strategy.

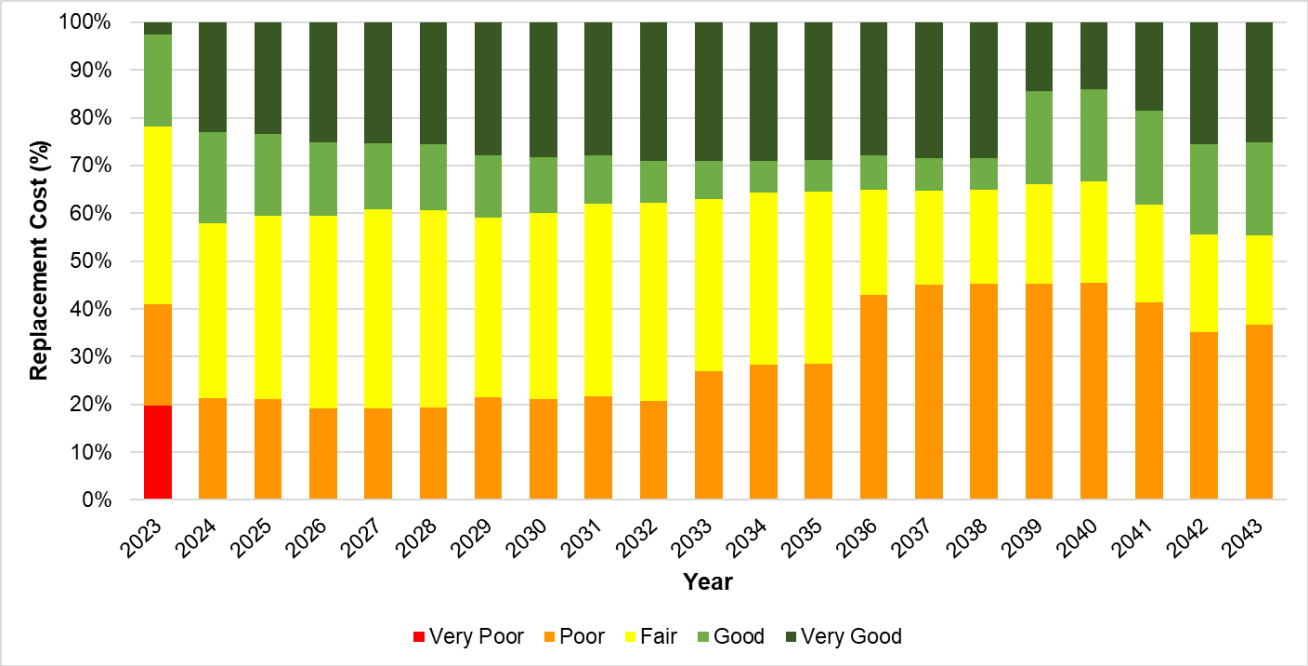


Figure 2-6. Wastewater Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

If all backlog, as well as infrastructure expenditures are complete in year one, there would not be any assets in very poor condition after 2024. It is assumed that this amount of work is not achievable in year one, but would be split out into multiple years.

2.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 2-7 and Table 2-6. Figure 2-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above.

The City's anticipated budget has been developed to meet the infrastructure needs of the asset category based on the wastewater financial plan. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies if the funding levels developed are provided as reported in this plan. If current anticipated investments in the Wastewater Network are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

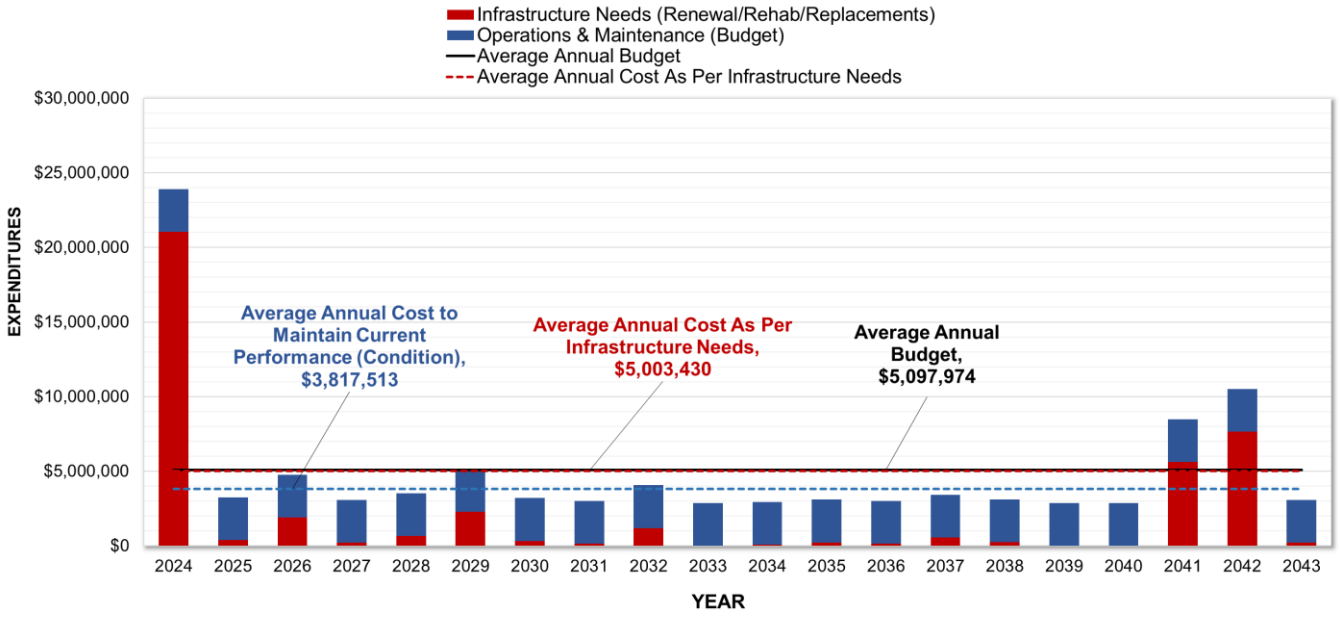


Figure 2-7. Wastewater Network Scenario Comparison

There is a "backlog" included in the year 2024, which represents the cumulative backlog of deferred work that has accumulated and is needed to be complete. Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals work puts the City of Port Colborne at risk to not achieve intergenerational equality. If the City continues to push out necessary renewals, future generations will be unable to maintain the level of service the customers currently enjoy and burden future generations with significant costs.

Growth needs will be further reviewed for this asset category through future master plans to clearly identify needs for growth, which will then be incorporated into future iterations of this AMP, as they become available. This may greatly impact the infrastructure expenditure requirements.

Continued deferrals of projects will also lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

2.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 2-6.

Table 2-6. Wastewater Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$2,860,792	$2,860,792	$2,860,792
Renewal, Rehabilitation, & Replacement	$2,237,182	$956,721	$2,142,638
Total Expenditure	**$5,097,974**	**$3,817,513**	**$5,003,430**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

2.5 Data Confidence and Improvement Plan

Table 2-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 2-7. Data Confidence – Wastewater Network

Data Source	Data Confidence
GIS Infrastructure Needs Study CCTV Assessments	Good

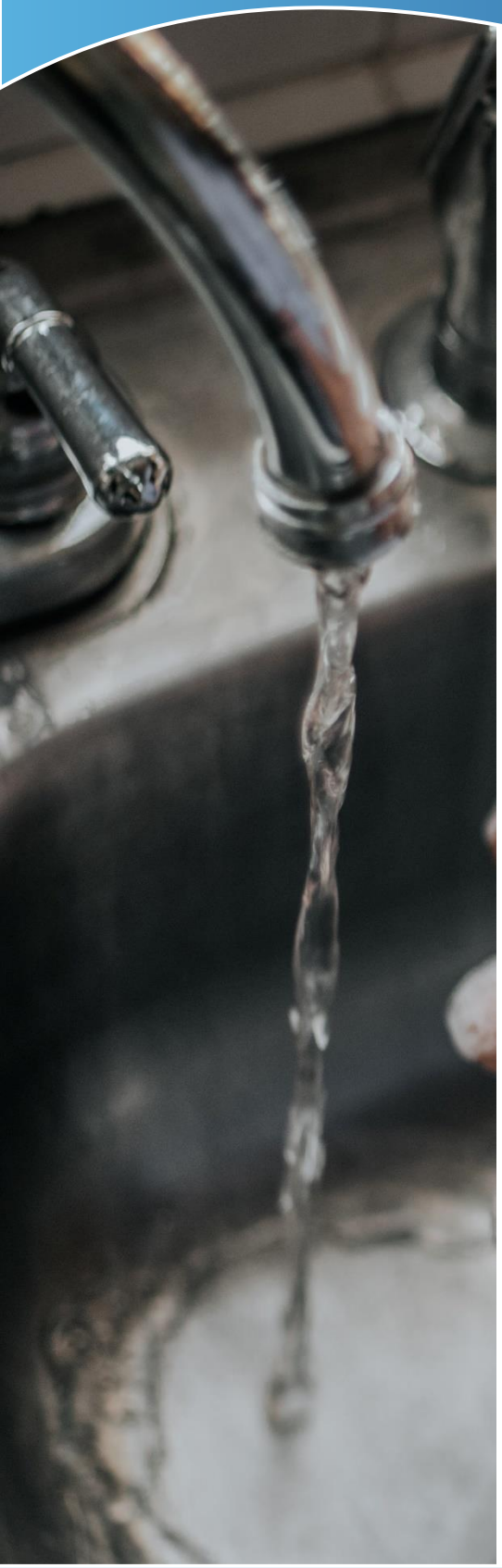
2.5.1 Recommendations for Improvements

The level of confidence in the wastewater network data has increased from the previous plan as a result of the Infrastructure Needs Study completed, although there was still limited CCTV data available for the system, so where accurate CCTV data was unavailable, age was still used to assign condition data. Future iterations of this plan will reflect updated data as it becomes available.

Future studies planned for the City include a Pollution Prevention Control Plan, Wastewater Flow Monitoring Program, and a Wet Weather Management Program. These studies will further inform asset management initiatives to ensure the City is making information decisions and maximizing investments to their infrastructure while also planning for growth.

It is also recommended that the City review and document needs for the GIS to fill gaps and document processes and governance of all data. As the City continues down their asset management journey, a strong data management strategy is required to keep and maintain information on all assets, including condition information and renewal activities.

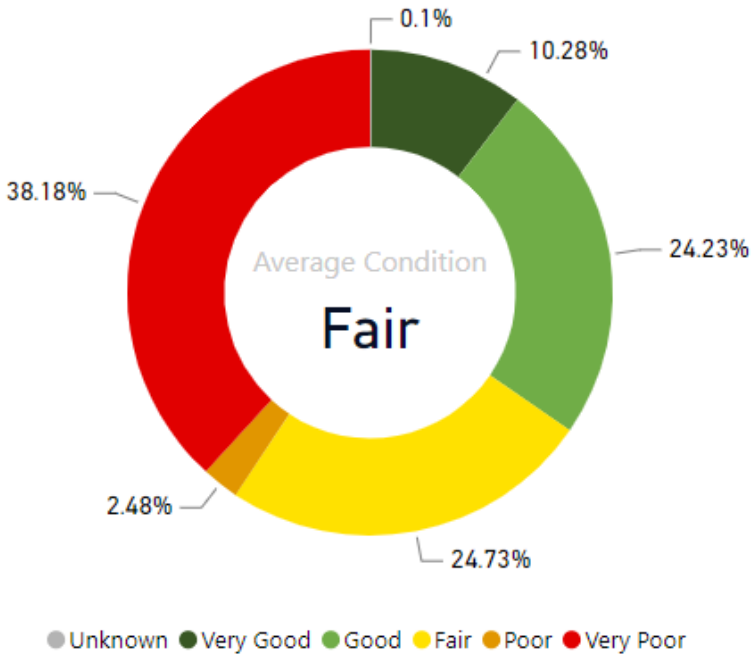
3 Water Network



Replacement Value

$250,181,669 M

Overall Average Asset Condition



Quick Facts

The Water Network has

- 112 km of distribution water mains providing clean drinking water to residents

3 Water Network

Water is provided to the City under a "two-tier" system whereby the Niagara Region is responsible for the operation and maintenance of the Port Colborne Water Treatment Plant, two storage facilities, and transmission trunk watermains. Water is drawn from the Welland Canal, treated to be drinkable, and sent via the transmission watermains to storage and the City's water distribution system. The City operates and maintains roughly 112km of distribution watermains.

The Region and City water systems are strictly regulated by the Ontario Ministry of Environment, Conservation and Parks (MECP) under the Safe Drinking Water Act (2002) and extensive testing and annual inspections ensure compliance to numerous standards and requirements for the protection and safety of users of the system.

3.1 State of the Infrastructure

3.1.1 Asset Inventory and Valuation

The Water Network includes mains, meters, bulk water stations, sample stations and water towers with a total estimated replacement value of $250 million. Table 3-1 below details the inventory and current estimated replacement value by asset type.

Table 3-1. Asset Inventory and Current Replacement Value – Water Network

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Mains	112,996	m	$248,745,533
Meter	7	Units	$4,033
Stations – Bulk Water Station	2	Units	$252,103
Sample Stations	59	Units	$1,000,000
Water Tower	3	Units	$180,000
Total			**$250,181,669**

3.1.2 Asset Condition

Condition was assigned to assets in the water network based on age/estimated service life. A description of the condition ratings scale can be found in Table 3-2. Conditions were assessed for the water system in line with the previous AMP, and the Infrastructure Needs Study. It is recommended

through future initiatives that the City evaluate other ways to determine condition of their water system such as the analysis of watermain break data (as it is compiled into a single location).

Table 3-2. Condition Rating Scale – Water Network

Condition	Age/ESL
Very Good	>80% life remaining
Good	60-80% life remaining
Fair	40-60% life remaining
Poor	20-40% life remaining
Very Poor	0-20% life remaining
Unknown	

Water Network overall condition by replacement value can be seen in Figure 3-1 and Figure 3-2.

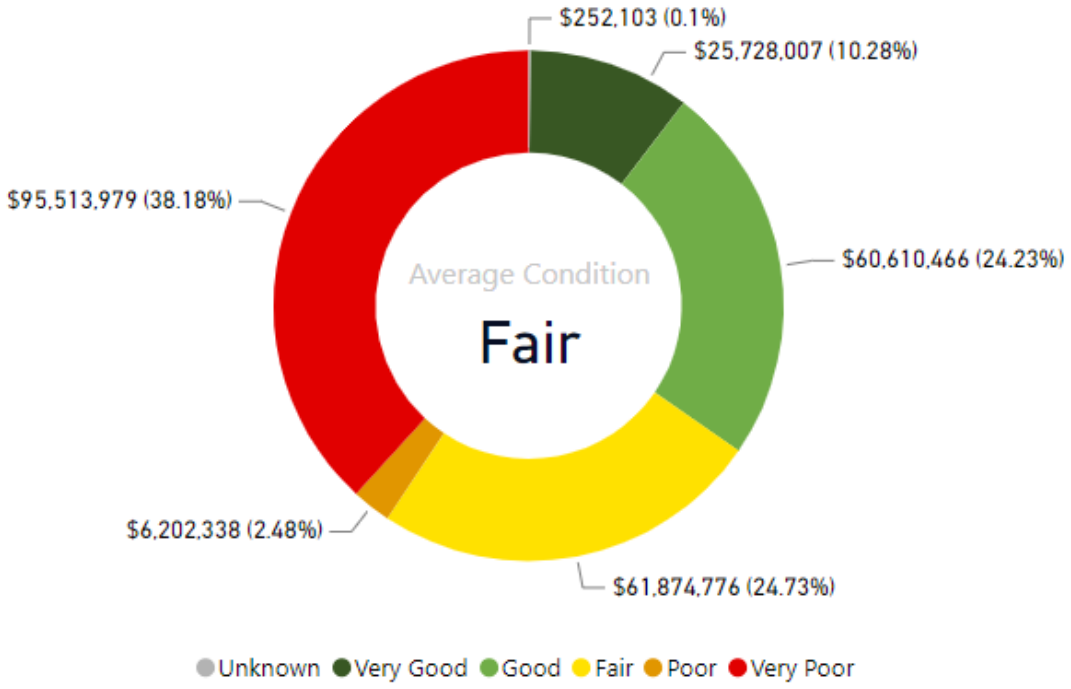


Figure 3-1. Asset Condition by Replacement Value – Water Network

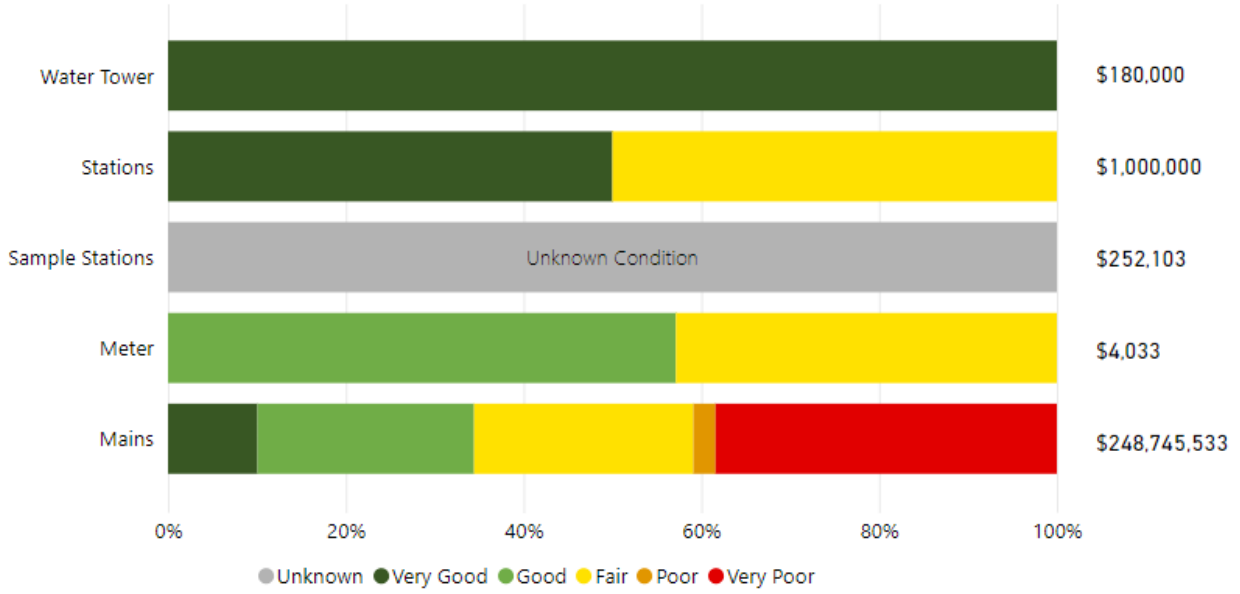


Figure 3-2. Asset Type Condition by Replacement Value – Water Network

On average Water Network assets are in **fair condition**. Water mains make up a large proportion of the assets in the Water Network. Install dates for the Sample Stations were not available at the time of the development of this AMP. It is recommended that the City continue its efforts to fill gaps in asset information.

Many water mains are currently close to or past their estimated service lives, which accounts for the large portion of assets in very poor condition, which consists of over 38% of the total replacement value of Water Network assets. A large portion of these water mains are cast iron and ductile iron mains which are due for replacement with more reliable material such as PVC. While these assets are close to or past their estimated service lives, many assets can continue to provide service well beyond their service lives. Figure 3-3 below shows the length of watermain by material type. The largest portions of the water network are PVC and cast iron watermains, with small portions of other materials such as asbestos cement, ductile iron and steel. The large portion of cast iron (CI) pipes are priorities for replacement.

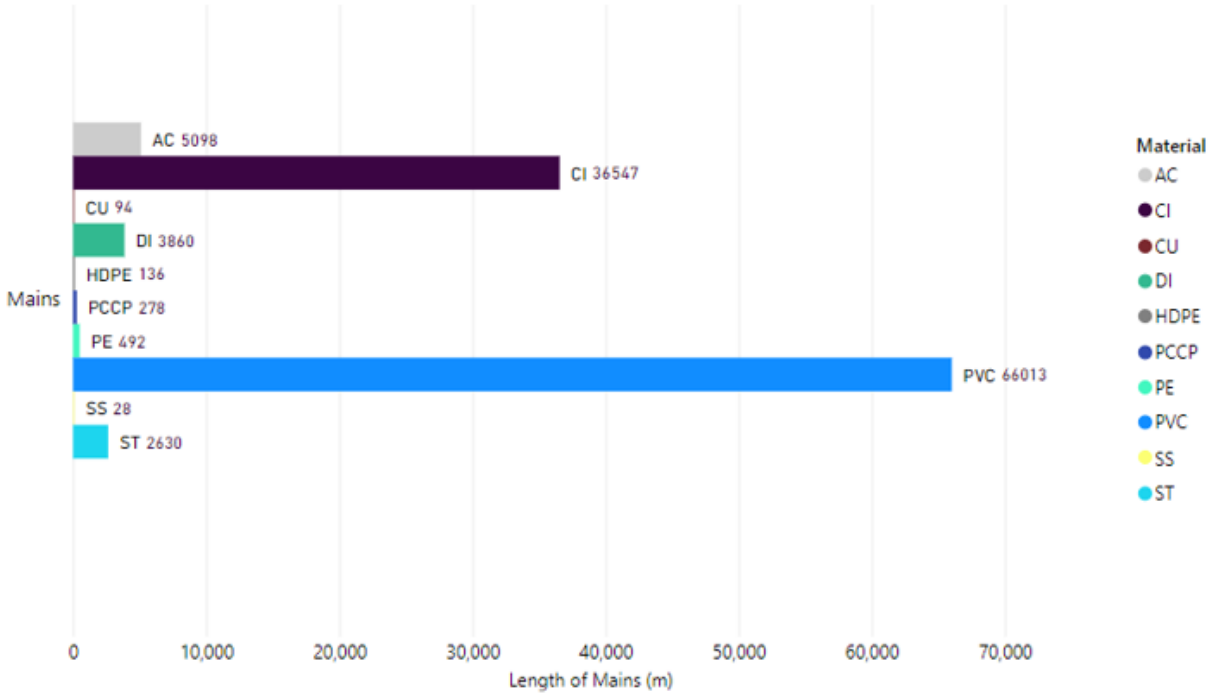


Figure 3-3. Water Main Length by Material Type (m)

3.1.3 Average Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Water Network assets. Average age and average estimated services lives for assets in the Water Network are shown in Figure 3-4.

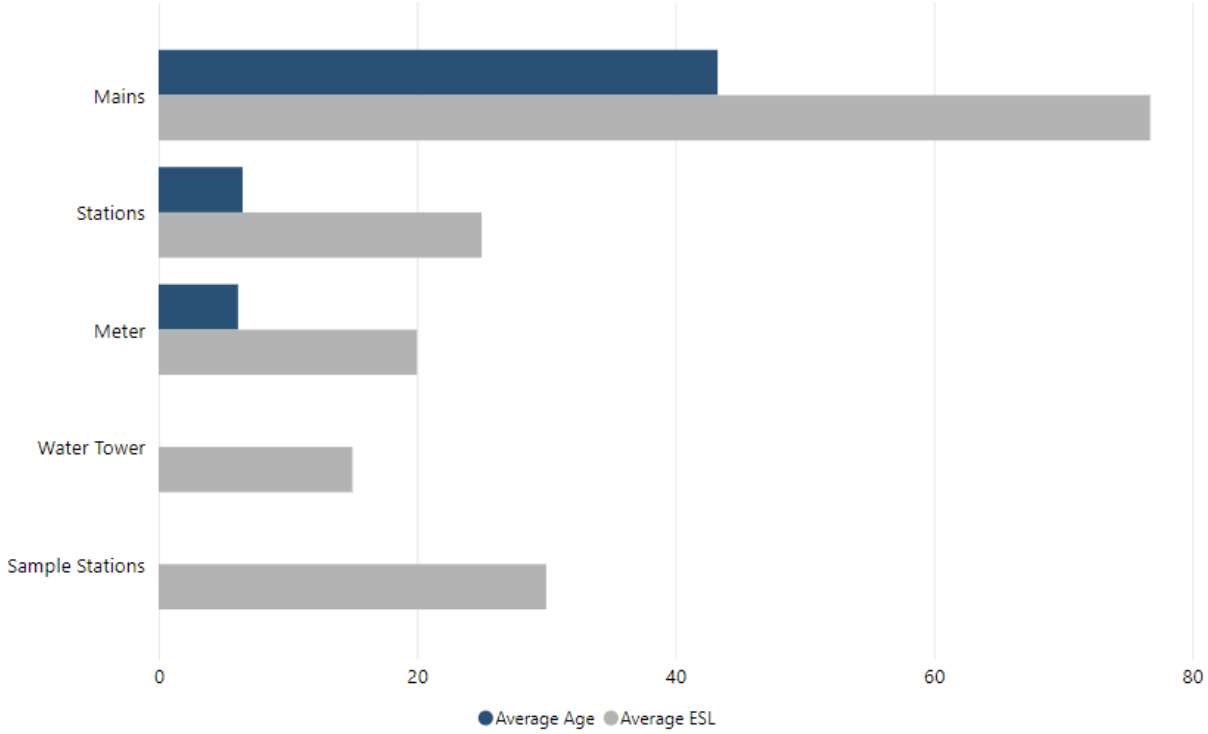


Figure 3-4. Average Age and Average Estimated Replacement Value – Water Network

Water mains, stations (bulk water stations) and meters have an average age well below the average estimated service lives while water towers and sample stations do not have any age information. There is currently unknown ages for the water tower and sample stations. It is recommended that the City make efforts to fill out any remaining information for this asset category.

3.2 Levels of Service

Service Statement: Provide reliable and cost-efficient, safe, high quality drinking water with adequate pressure and flow.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 3-3 and Table 3-4 provide a summary of the community and technical levels of service metrics for the City's Water Network. These are segmented into those that are required under the O.Reg.588/17 and other levels of service metrics that are defined by the City. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Water Network assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 3-3. Community Level of Service– Water Network

Key Service Attribute	Performance Measure	Current Performance
Regulatory		
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system.	Drinking water is supplied to the urban area of the City via 112 km of watermains as illustrated in Appendix XX. This Class 1 distribution system conveys water purchased from the Region who draws water from the Welland Canal and treats it to meet regulatory requirement
Scope	Description, which may include maps, of the user groups or areas of the municipality that have fire flow.	Fire flow is provided by 622 hydrants within the urban area of the City. See Appendix B.
Reliability	Description of boil water advisories and service interruptions.	0
City Defined		
Safe & Regulatory	# of confirmed water quality customer complaints.	14
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	8%

Table 3-4. Technical Level of Service–Water Network

Key Service Attribute	Performance Measure	Current Performance
Regulatory		
Accessible & Reliable	Percent of properties connected to the municipal water system	67.99%
Accessible & Reliable	Percent of properties where fire flow is available	67.99%
Accessible & Reliable	# of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system	
Safe & Regulatory	# 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
City Defined		
Accessible & Reliable	Percent of replacement value of water network assets very poor condition	38.18%
Accessible & Reliable	5-year average number of water main breaks	10
Cost Efficient	Water loss as a percentage of Water Purchased	35%
Safe & Regulatory	Percentage of water sampling meeting Safe Drinking Water Standards	100%

3.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within the Water Network.

3.3.1 Lifecycle Activities

Lifecycle activities for Water Network assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that water assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 3-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 3-5. Asset Management Practices and Associated Frequency – Water Network

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Water quality complaint tracking	• As required
• Water loss reports	• Monthly
• AWWA audits	• Annually
• Hydraulic analysis (water modelling)	• As required
• GIS & asset tracking	• On-going
• Water Master Plan, Infrastructure Needs Study, Asset Management Plan	• Every 5 years
• Water Financial Plan	• Every 5 years
• Drinking Water Quality Management Standard Audits (DWQMS)	• Annually (internal & external), accreditation every 3 years
Operations & Maintenance Activities	
• Flushing	• Targeted areas
• Valve turning	• 25% annually
• Break repairs	• As required
• Hydrant inspection	• Twice annually
• Fire flow testing	• 25% annually
• Hydrant Painting	• 10 years
• Hydrant Repairs	• As required
• Leak detection	• Twice annually

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• Bulk Water Station inspections	• Twice annually
• Curb Stop repairs	• As required
• Large industrial meter calibrations (AWWA standards)	• Annually (based on AWWA standards)
Renewal/Replacement Activities	
• Trenchless relining	• As identified
• Watermain Replacement	• As identified
• Replacement of remaining assets	• End of service life
Disposal Activities	
• Watermain removal through standard construction practices or abandoned in place	• As required
• Hydrants - decommission and store parts	• As required
• Hydrants - decommission and scrap	• As required
• Removal through standard construction practices for remaining asset types	• As required
Service Improvement & Growth Activities	
• Upsizing	• As required
• Expansion to support growth	• As required (e.g. development)
• Local improvements	• Based on opportunity
• Hydrants - design standards requirements	• As required

3.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 3.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 3.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

As the City is working on better understanding the water system, it is expected the condition profiles of this asset system will change drastically once all the data has been collected to better inform this plan. The updated condition information will also assist in developing appropriate lifecycle strategies to address this asset category and to better protect public and private land from flooding.

3.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs of the asset category and based on the approved water financial plan. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement for the Water Network is $3.9 million. The condition distribution for the anticipated budget scenario can be seen in Figure 3-5. Overall asset condition increases throughout the 20-year forecast period. This suggests that the current anticipated budget is sufficient to ensure infrastructure needs are met, increasing

asset condition over time. If the City sustains the annual anticipated investment of $3.9 million into the future, Water Network assets will provide quality services to residents.

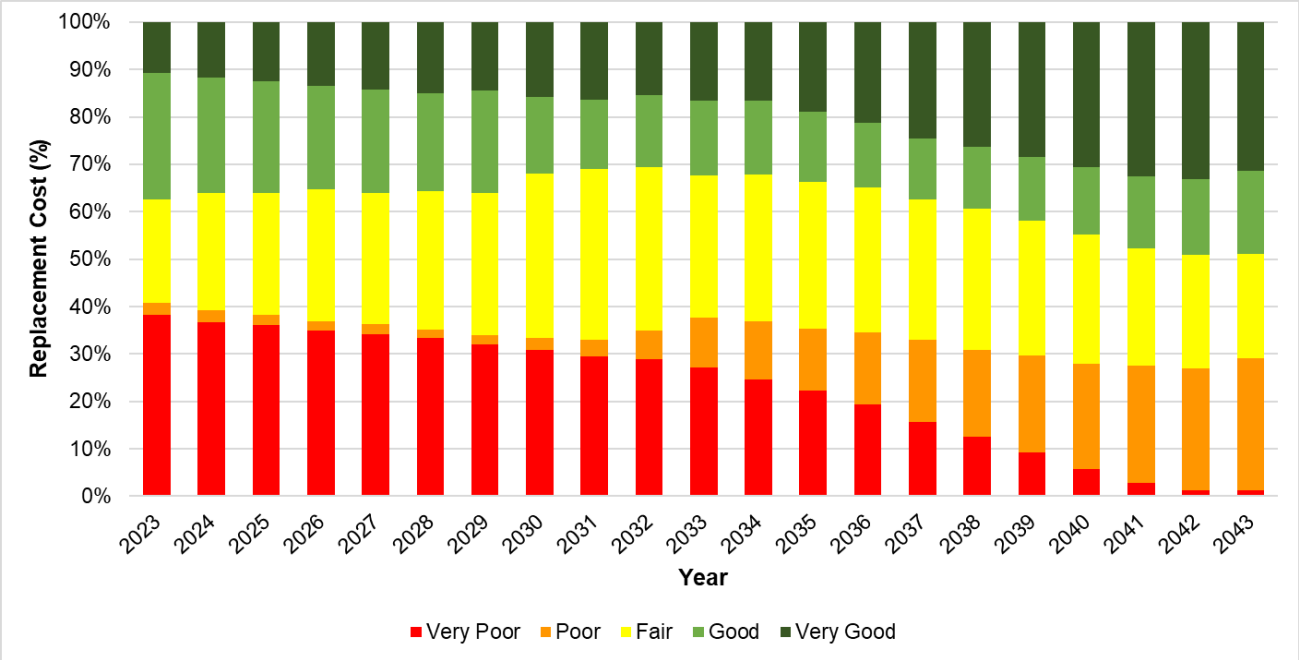


Figure 3-5. Water Network Performance Forecast with Current Funding

3.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Water Network asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $395,000 is needed to maintain the current performance (condition/level of service) for Water Network assets. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 3-6. The Water Network has a large proportion of assets in poor to very poor condition (40.66%). Through this scenario, the amount of assets in poor to very poor condition increase to over 60%. This highlights the need to ensure appropriate investments are made in the Water Network, to help ensure that the overall asset condition can be improved.

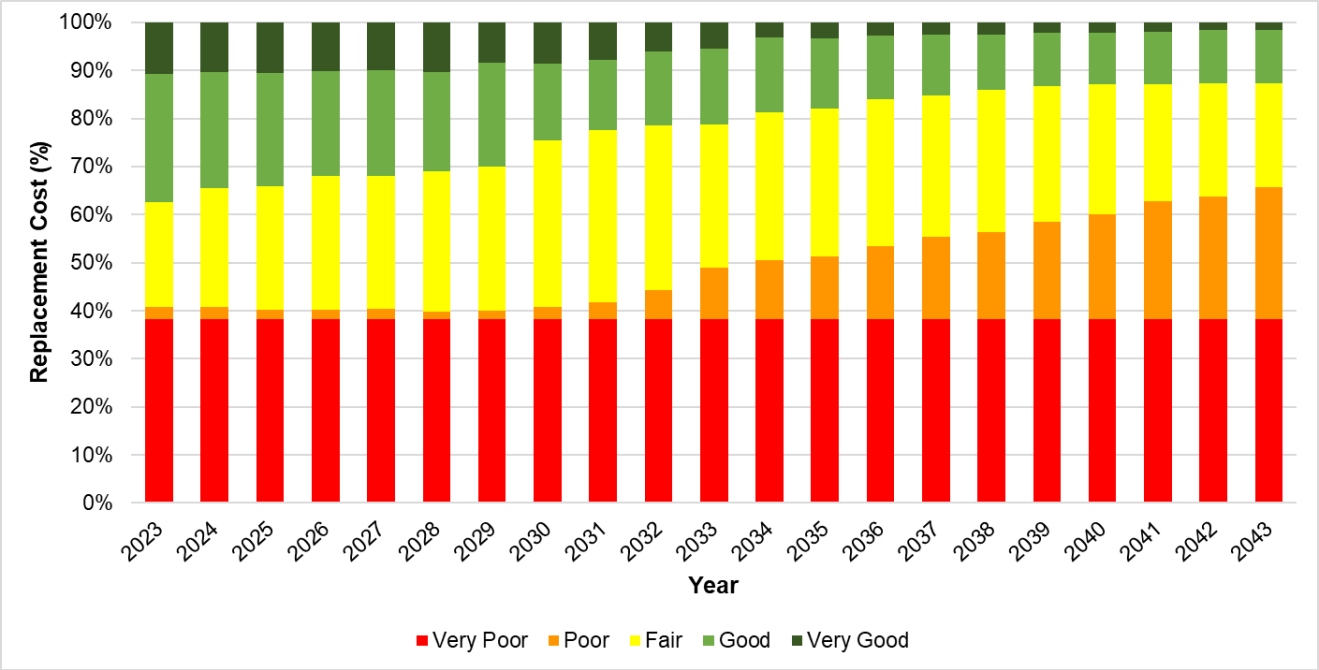


Figure 3-6. Water Network Performance Forecast to Maintain Levels of Service

3.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $4.8 million is required for this scenario. There is a small funding gap of approximately $900,000 funding gap compared to the anticipated budget allocation in the Water Network. The condition distribution for Water Network assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 3-7. This forecast condition distribution is similar to scenario one, with a sharp decline of assets in very poor condition, and slight increase of assets in good to very good condition.

water

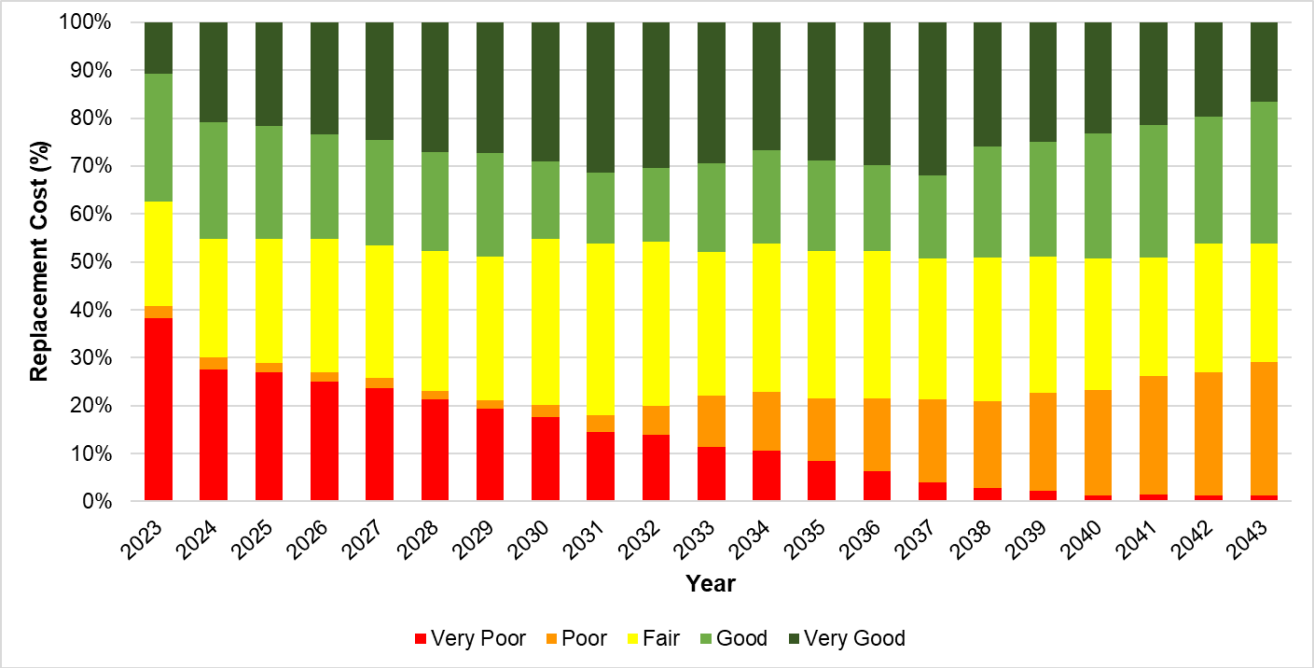


Figure 3-7. Water Network Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

3.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 3-8 and Table 3-6. Figure 3-8 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 3-6.

The City's anticipated budget has been developed to meet the infrastructure needs of the asset category and based on the approved water financial plan. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets. There is a small gap of $900,000 to optimize performance of assets based on lifecycle strategies. If current anticipated investments in the Water Network are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

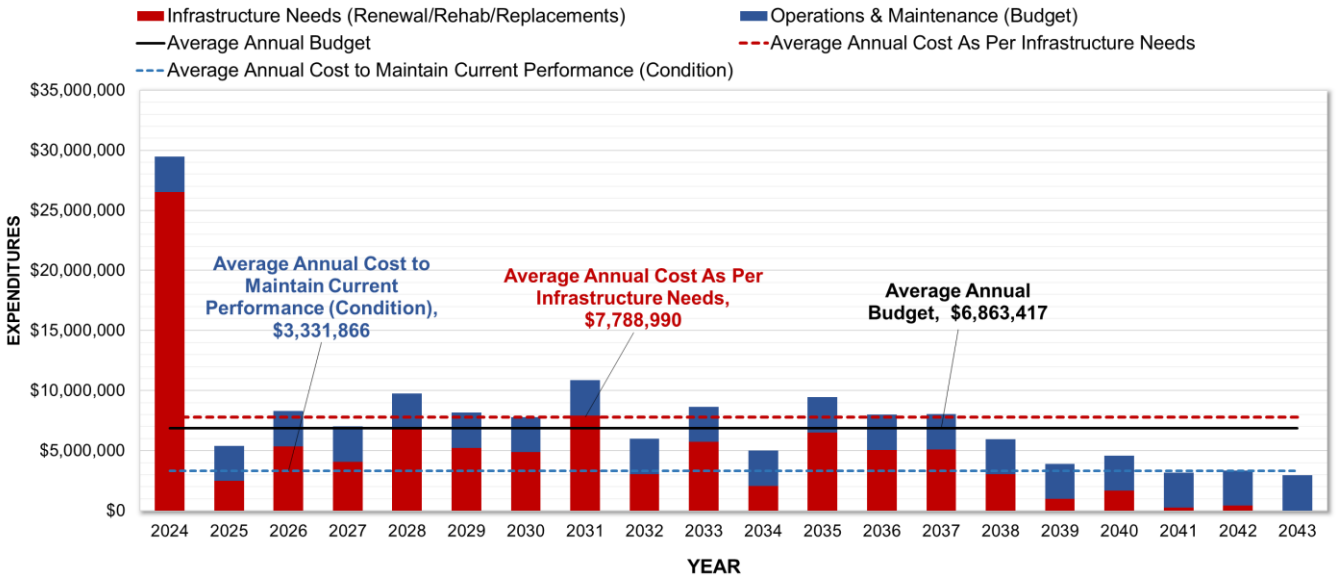


Figure 3-8. Water Network Scenario Comparison

There is a "backlog" included in the year 2024, which represents the cumulative backlog of deferred work that has accumulated and is needed to be complete. Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals work puts the City of Port Colborne at risk to not achieve intergenerational equality. If the City continues to push out necessary renewals, future generations will be unable to maintain the level of service the customers currently enjoy and burden future generations with significant costs.

Growth needs will be further reviewed for this asset category through future master plans to clearly identify needs for growth, which will then be incorporated into future iterations of this AMP, as they become available. This may greatly impact the infrastructure expenditure requirements.

Continued deferrals of projects will also lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

3.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 3-6.

Based on planned actions of the City, it is expected that the infrastructure needs funding will ultimately be achieved.

Table 3-6. Water Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$2,936,826	$2,936,826	$2,936,826
Renewal, Rehabilitation, & Replacement	$3,926,591	$395,040	$4,852,164
Total Expenditure	**$6,863,417**	**$3,331,866**	**$7,788,990**
Average Annual Funding Gap		**No Gap**	**$925,573**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets

3.5 Data Confidence and Improvement Plan

Table 3-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 3-7. Data Confidence – Water Network

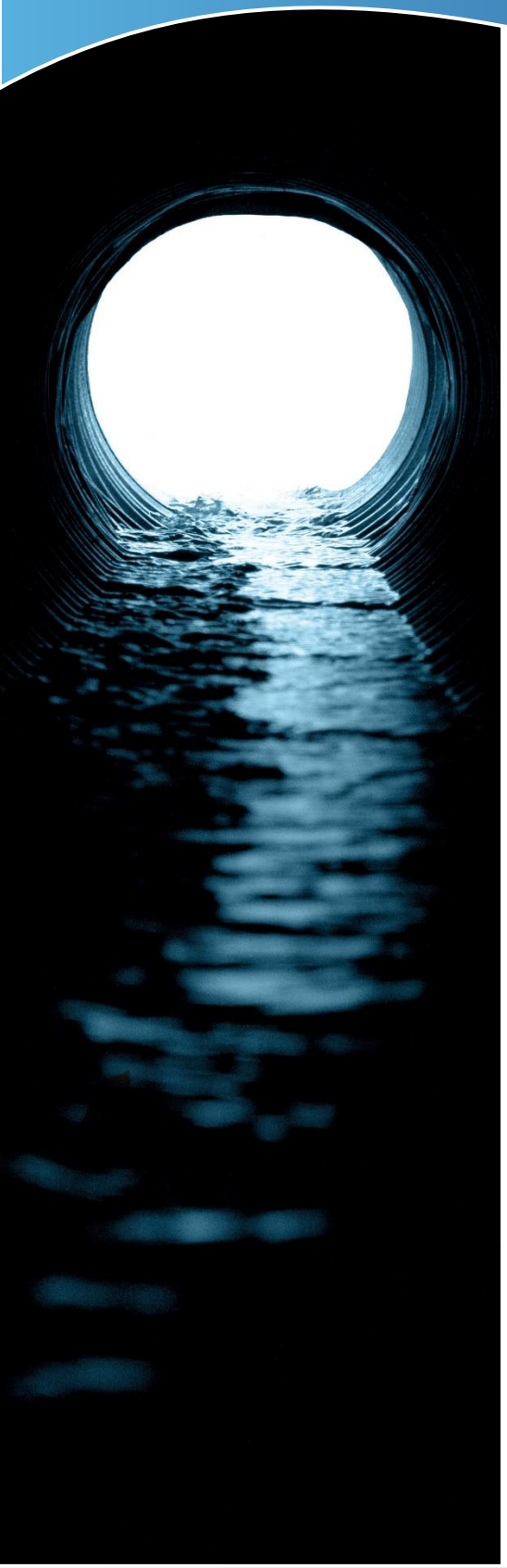
Data Source	Data Confidence
GIS Infrastructure Needs Study	Good

3.5.1 Recommendations for Improvements

The Infrastructure Needs Study provided simulations of needs based on existing hydraulic models to identify pressure and fire flow deficiencies throughout the system, which informed the needs forecasted in this AMP. The planned Water Master Servicing Plan and Model Calibration will further improve the information available for asset management planning.

It is also recommended that the City review and document needs for the GIS to fill gaps and document processes and governance of all data. As the City continues down their asset management journey, a strong data management strategy is required to keep and maintain information on all assets, including condition information and renewal activities.

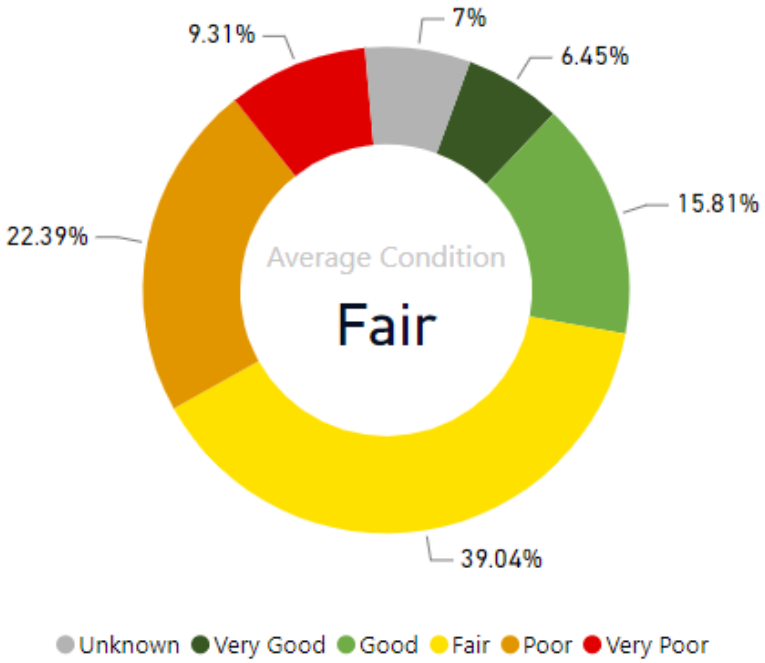
4 Stormwater Network



Replacement Value

$180,288,677 M

Overall Average Asset Condition



Quick Facts

The Stormwater Network has

- 98 km of stormwater mains (42% designed to current standards)
- Supporting assets including stormwater management ponds, outlets, forcemains, ditches and culverts

4 Stormwater Network

The City's stormwater infrastructure is located primarily throughout the urban setting. Rain and snowmelt generate stormwater, which permeates into the soil or flows as surface runoff. The storm sewer system gathers runoff through catch basins and directs it towards the nearest water body through gravity mains, predominantly the Welland Canal or Lake Erie, mitigating the potential for property flooding. Urban development and increased impervious surfaces have diminished natural drainage, underscoring the growing importance of stormwater management, especially amid climate change-induced intensification of storms.

4.1 State of the Infrastructure

4.1.1 Asset Inventory and Valuation

The Stormwater Network includes mains, forcemains, leads, ditches, culverts, outlets, and ponds with a total estimated replacement value of $180 million. Currently only 42% of the storm system is designed to current standards. Table 4-1 below details the inventory and the current estimated replacement value by asset type.

Table 4-1. Asset Inventory and Current Replacement Value – Stormwater Network

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Mains	96,580	m	$174,012,825
Outlets	58	Units	$1,529,549
Forcemains	1,569	m	$1,520,585
Leads	1,614	Units	$1,336,327
Ditches	334	Units	$870,564
Ponds	2	Units	$780,109
Culvert	418	Units	$238,718
Total			**$180,288,677**

4.1.2 Asset Condition

Condition was assigned to assets in the stormwater network using PACP scores (for mains that have Zoom camera inspections completed) or age/estimated service life for remaining assets. A description of the condition rating scale is shown below in Table 4-2. Based on the previous AMP and the Infrastructure Needs Study, the City began an initiative to acquire updated condition data by zoom camera, which will provide a baseline condition of the storm system. While not completed at the time of the development of this plan, where zoom camera information was available, this was used to inform this AMP. Where the information was unavailable, age and estimated service life were used to determine.

Table 4-2. Condition Rating Scale – Stormwater Network

Condition	Age/ESL	PACP Condition Rating
Very Good	>80% life remaining	1: Failure unlikely in foreseeable future (RSL = 35)
Good	60-80% life remaining	2: Pipe unlikely to fail for at least 20 years (RSL = 25)
Fair	40-60% life remaining	3: Pipe may fail in 10-20 years / Grade 3 (RSL = 15)
Poor	20-40% life remaining	4: Pipe will probably fail in 5 – 10 years (RSL = 7)
Very Poor	0-20% life remaining	5: Pipe failed or likely to fail within 5 years (RSL = 2)
Unknown		

The Stormwater Network overall condition by replacement value can be seen in Figure 4-1. Stormwater Network assets are on average in **fair condition** with over 61% of assets in fair or better condition. 7% of assets have an unknown condition.

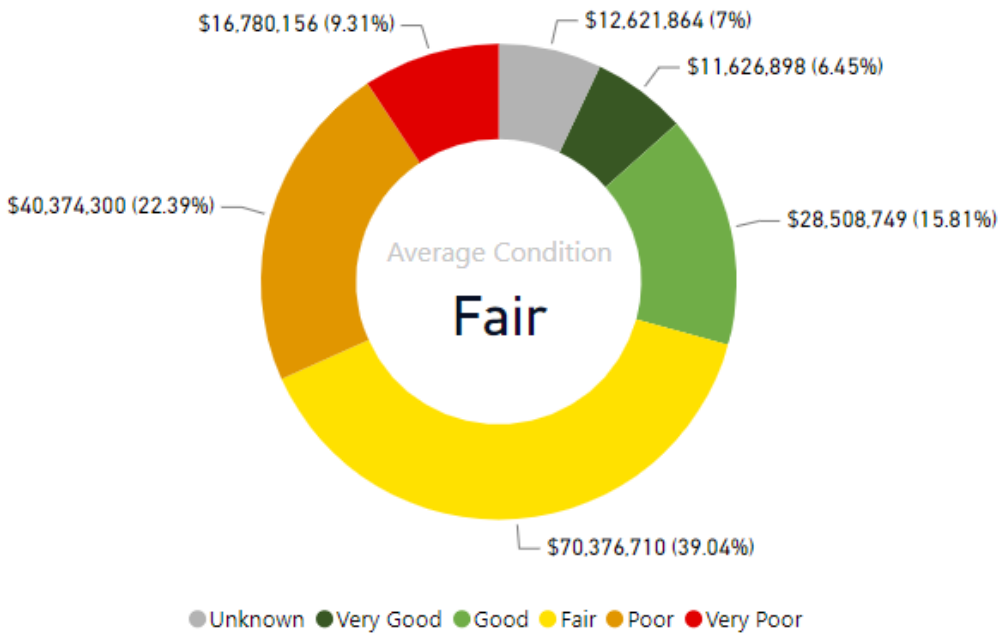


Figure 4-1. Asset Condition by Replacement Value – Stormwater Network

Figure 4-2 shows a breakdown of the condition distribution by replacement value for each asset type in the Stormwater Network.

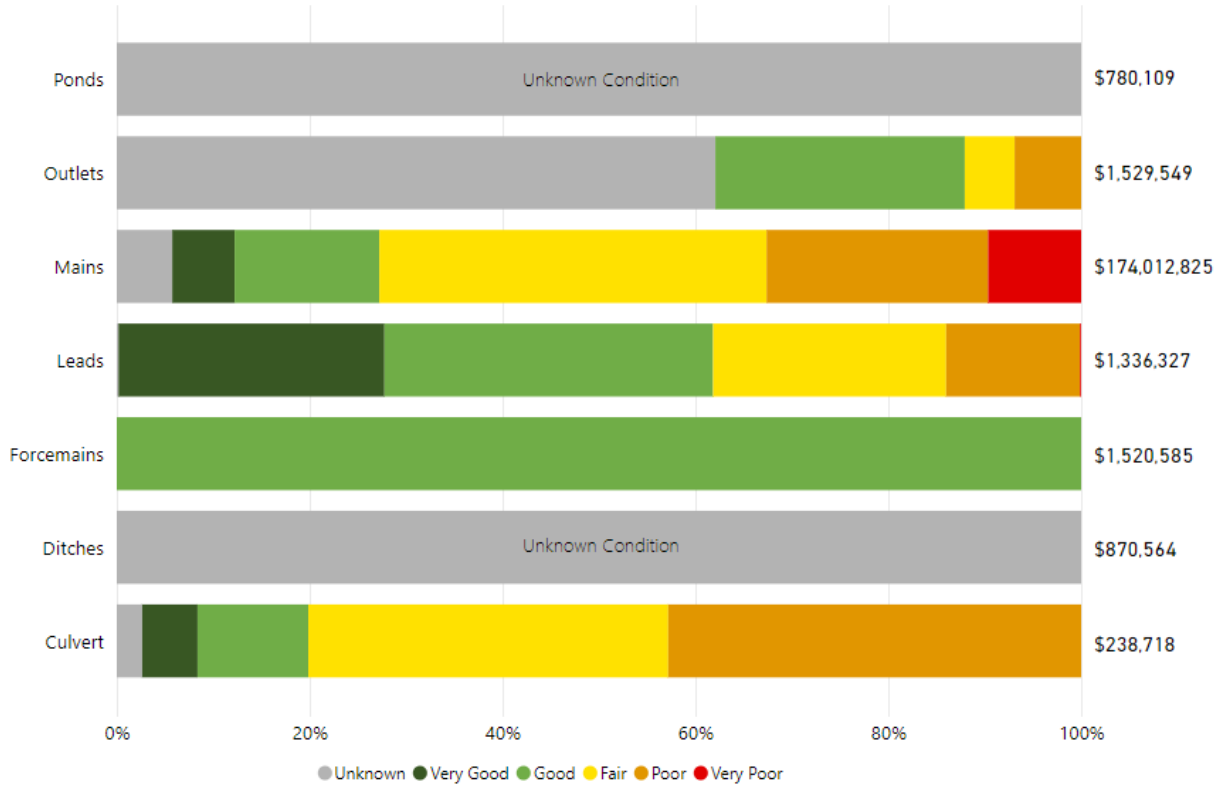


Figure 4-2. Asset Type Condition by Replacement Value – Stormwater Network

Ponds and ditches currently have an unknown condition while outlets, mains, and culverts have some assets with unknown condition. There is a small portion of storm main assets currently in very poor condition. Asset condition for most mains was assigned using age/estimated service life as currently only 11.41% of assets have zoom camera inspections. Once all mains have been inspected, these ratings may change to reflect the actual asset condition versus an estimated condition based on their age.

As a result of the nature of ponds and ditches, these assets do not have a condition assessment. The work on ditches is performed on a complaint basis. It is recommended that the City analyze the ponds to determine which ponds require dredging and use a sediment level metric to determine condition.

4.1.3 Average Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Stormwater Network assets. Figure 4-3 compares the average age of Stormwater Network asset types to the average estimated service life.

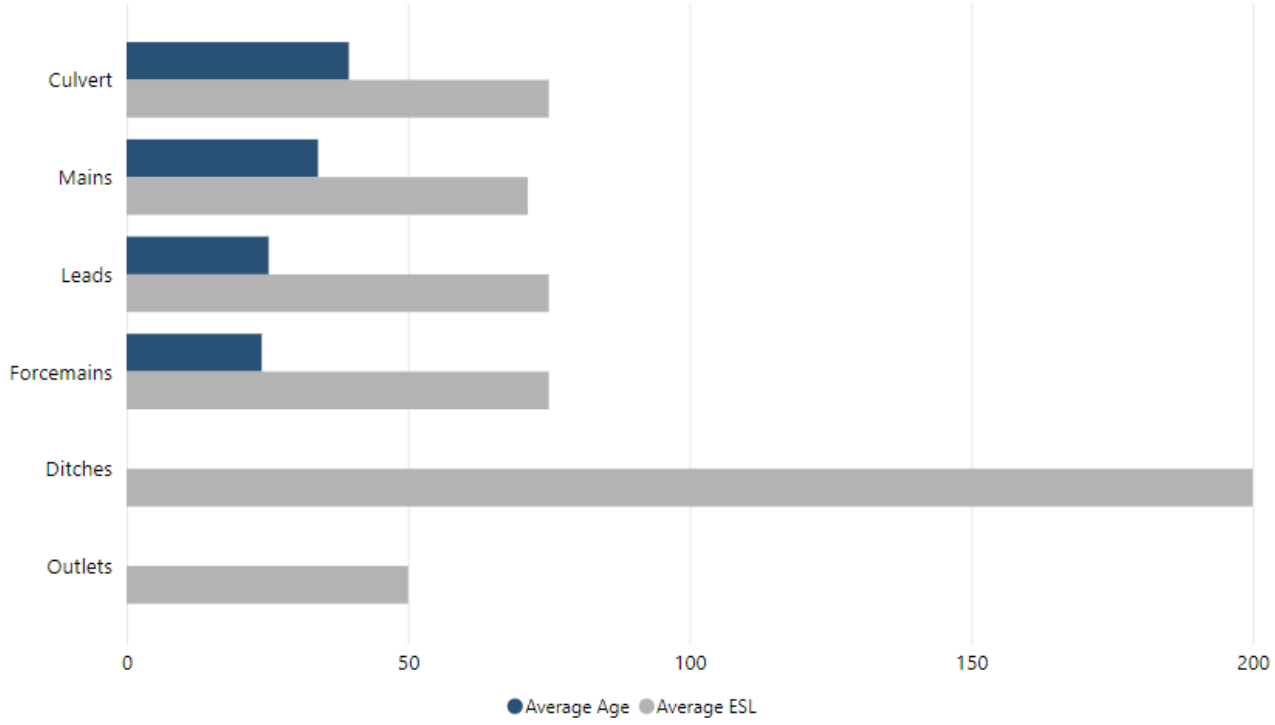


Figure 4-3. Average Age and Average Estimated Service Life – Stormwater Network

For asset types that have age, the average age is less than the average estimated service life. Ditches and outlets do not currently have information for asset age. It is recommended that the City try to determine the ages of the outlets. The nature of how ditches are maintained, it would not provide

value for the City to try to fill the gap in age information for this asset type. These assets are maintained through operations and maintenance and age is not a factor in their condition.

4.2 Levels of Service

Service Statement: The stormwater system aims to protect property and people from the impacts of flooding and minimize exposure to risk.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 4-3 and Table 4-4 provide a summary of the community and technical levels of service metrics for the City's Stormwater Network. These are segmented into those that are required under the O.Reg.588/17 and other levels of service metrics that are defined by the City. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Stormwater Network assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 4-3. Community Level of Service – Stormwater Network

Key Service Attribute	Performance Measure	Current Performance
Regulatory		
Scope	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater management system	In the urban area, stormwater is conveyed via 98 km of City storm sewers, as well as over 5 km of culverts and 40 km of managed ditches and swales. Throughout the entire city, overland drainage routes and natural watercourses contribute to the conveyance of surface stormwater. See Appendix C.
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	3%

Table 4-4. Technical Level of Service – Stormwater Network

Key Service Attribute	Performance Measure	Current Performance
Regulatory		
Scope	Percentage of properties in municipality resilient to a 100-year storm.	5.05%
Scope	Percentage of the municipal stormwater management system resilient to a 5-year storm.	85%
City Defined		
Safe & Regulatory	Percentage of stormwater management system designed to current standards.	42%

Key Service Attribute	Performance Measure	Current Performance
Safe & Regulatory	Percentage of network inspected within last 5 years.	100%
Accessible & Reliable	Percentage of replacement value of assets in very poor condition.	9.31%
Accessible & Reliable	Percentage of catchbasins cleaned annually.	33%

4.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is a concise overview of some existing asset management practices within the Stormwater Network.

4.3.1 Lifecycle Activities

Lifecycle activities for Stormwater assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that Stormwater assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 4-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 4-5. Asset Management Practices and Associated Frequency – Stormwater Network

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Infrastructure Needs Study (INS)	• As required
• CLI-ECAs	• As per regulatory requirements
Operations & Maintenance Activities	
• Storm Sewer CCTV inspection / zoom camera inspections	• As required
• Outlet Inspections	• Weekly; as required
• Storm Sewer flushing / cleaning	• As required
• Catchbasin and Lead flushing	• 33% of catchbasins/leads per year
• Urban ditch cleaning	• As required
• Outlet cleaning	• As required (storm based)
• Lead inspections	• As required
• Storm Sewer spot repair	• As required
Renewal/Replacement Activities	
• Storm Sewer replacement (gravity & forcemains)	• End of Service Life
• Remaining asset replacements (culverts, inlets, leads, manholes, outlets)	• End of Service Life
Disposal Activities	
• Mains removals through standard construction practices	• As required
Service Improvement & Growth Activities	

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• Pipe upsizing	• As required
• Expansion to support growth	• As required (e.g. development)

4.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 4.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 4.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

As the City is improving their understanding of the storm system, it is expected the condition profiles of this asset system will change drastically once all the data has been collected to better inform this plan. The updated condition information will also assist in developing appropriate lifecycle strategies to address this asset category and to better protect public and private land from flooding.

4.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs of the asset category, which includes a 33% increase to "catch-up" to needs until 2031. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Stormwater Network is $4.6 million. The condition distribution for the anticipated budget scenario can be seen in Figure 4-4. The condition distribution shows that assets in very poor condition increase drastically over the forecast period, starting at just over 10% and ending the forecast at over 30%.

With the current anticipated funding, the overall condition of Stormwater Network assets decreases. This performance forecast highlights the challenges the City may face in keeping up with infrastructure needs and ensuring assets are in a state of good repair.

The City is currently undergoing a project to obtain updated condition data of the storm system and will continue to enhance the lifecycle strategies and budget to meet the needs of the storm system to improve this asset system.

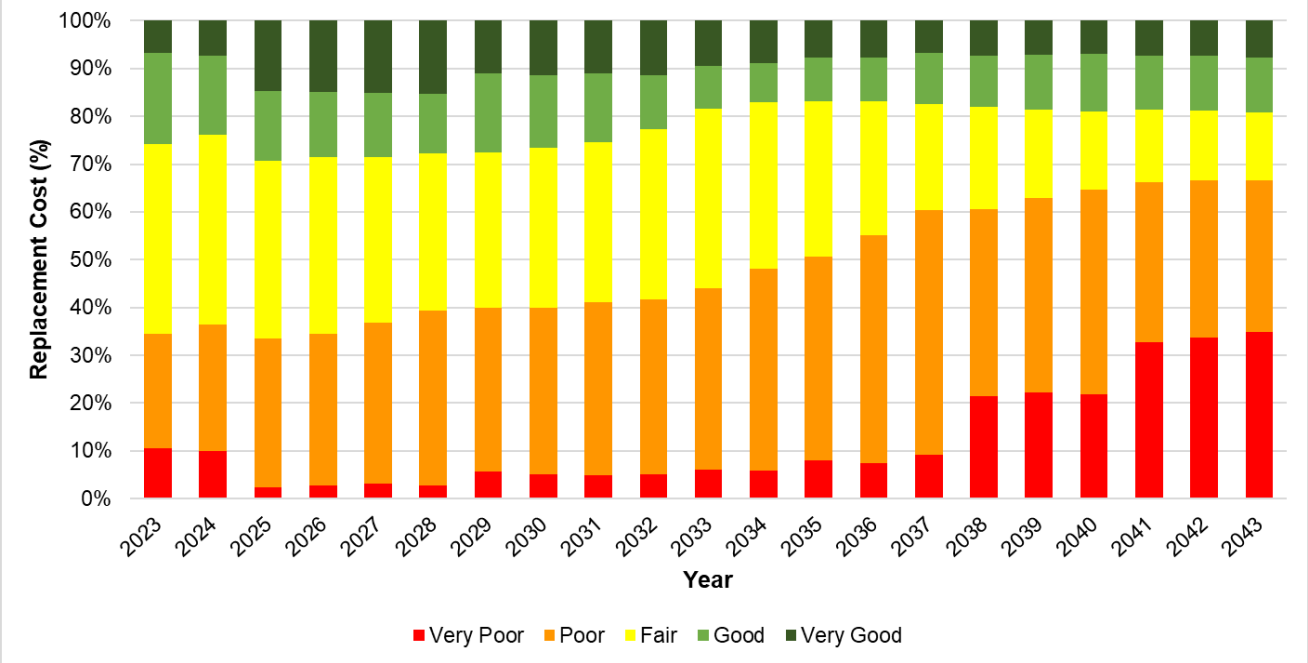


Figure 4-4. Stormwater Network Performance Forecast with Current Funding

4.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Stormwater Network asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $3.2 million is needed to maintain the current performance (condition/level of service) for Stormwater Network assets. There no funding gap compared to the anticipated annual funding. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 4-5. Asset condition increases slightly in with this scenario.

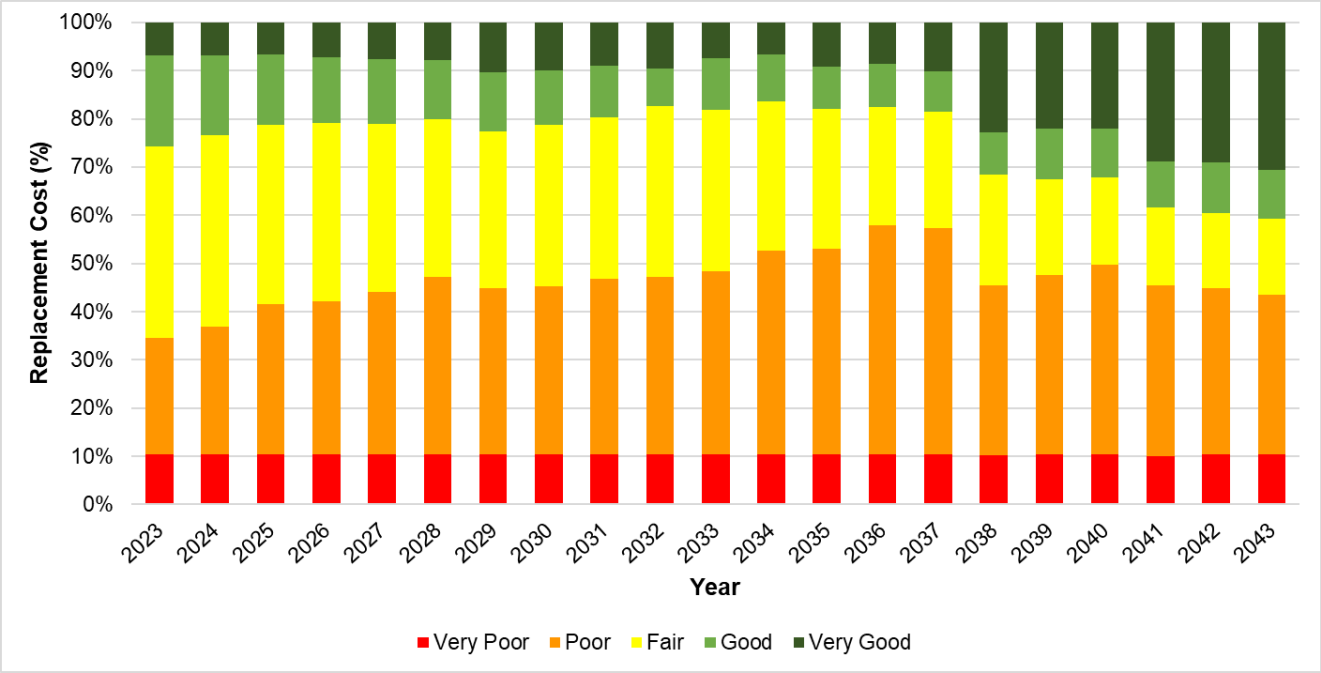


Figure 4-5. Stormwater Network Performance Forecast to Maintain Levels of Service

4.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $4.5 million is required for this scenario. There is no anticipated funding gap compared to the anticipated budget allocation in the Stormwater Network. The condition distribution for Stormwater Network assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 4-6. In this performance forecast the overall condition of assets increases drastically compared to the other scenarios. This suggests that the City should focus on following the lifecycle strategies to ensure overall condition will increase into the future.

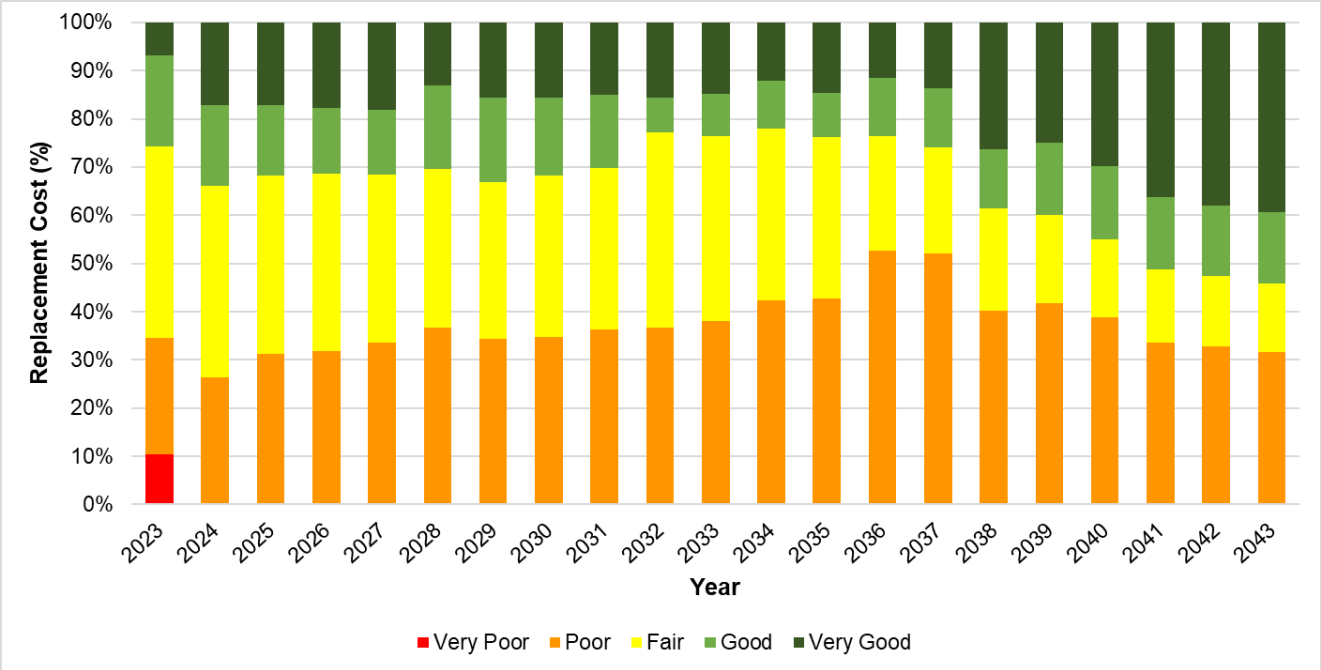


Figure 4-6. Stormwater Network Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

4.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 4-7 and Table 4-6. Figure 4-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above.

The City's anticipated budget has been developed to meet the infrastructure needs of the asset category, which includes a 33% increase to "catch-up" to needs until 2031. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies if the funding levels developed are provided as reported in this plan. If current anticipated investments in the Stormwater Network are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

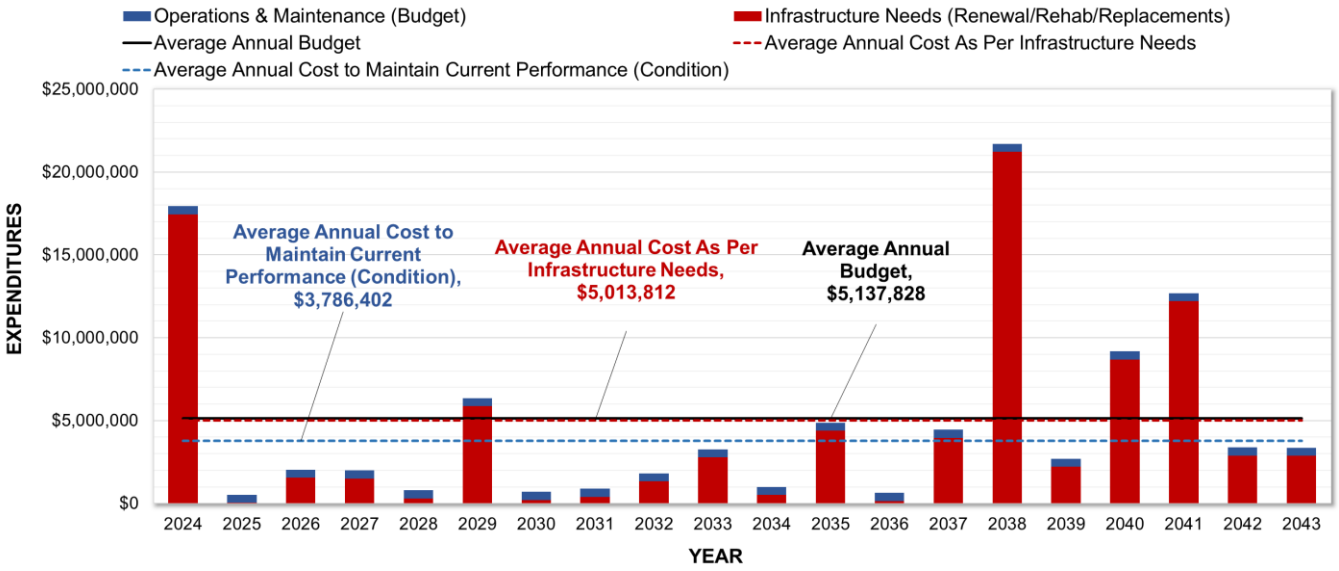


Figure 4-7. Stormwater Network Scenario Comparison

There is a "backlog" included in the year 2024, which represents the cumulative backlog of deferred work that has accumulated and is needed to be complete. Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals work puts the City of Port Colborne at risk to not achieve intergenerational equality. If the City continues to push out necessary renewals, future generations will be unable to maintain the level of service the customers currently enjoy and burden future generations with significant costs.

The infrastructure needs for storm are expected to increase as more information is available, and more assessments have been conducted on areas that require improved storm management. Currently only 42% of the storm system is designed to current standards, and only one third of the urban area has working designed infrastructure. As new information is available, the lifecycle strategies will continue to evolve to be more concise and will improve the accuracy of this strategy, and the needs for both maintenance and renewals and replacements will fluctuate in the future as the issues with this system are further analyzed.

Growth needs will be further reviewed for this asset category through future master plans to clearly identify needs for growth, which will then be incorporated into future iterations of this AMP, as they become available. This may greatly impact the infrastructure expenditure requirements. Continued deferrals of projects may lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

4.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 4-6.

Table 4-6. Stormwater Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$493,600	$493,600	$493,600
Renewal, Rehabilitation, & Replacement	$4,644,228	$3,292,802	$4,520,212
Total Expenditure	**$5,137,828**	**$3,786,402**	**$5,013,812**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

As further analysis of the storm system is completed through the master service plan, it is expected that the infrastructure needs for this asset class to grow, as currently only 42% of the storm system is designed to current standards. Further needs for the storm system will be reviewed in the planned stormwater master plan following the completion of the zoom camera inspection which will provide a condition assessment of all pipes. This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

4.5 Data Confidence and Improvement Plan

Table 4-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 4-7. Data Confidence – Stormwater Network

Data Sources	Data Confidence
GIS Infrastructure Needs Study Zoom camera condition assessments for Sewers	Fair

4.5.1 Recommendations for Improvements

The City is currently undergoing zoom camera condition assessments for their storm sewers, based on recommendations from the Infrastructure Needs Study. During this assessment, work is being completed to update and fix the current information available in the City's GIS. A portion of this updated information was available during the development of this plan. This will greatly improve the data confidence for the storm sewers for the 2025 iteration of this plan.

The Stormwater Master Servicing Plan will assist the City in further informing future iterations of the AMP and include needs to address future growth.

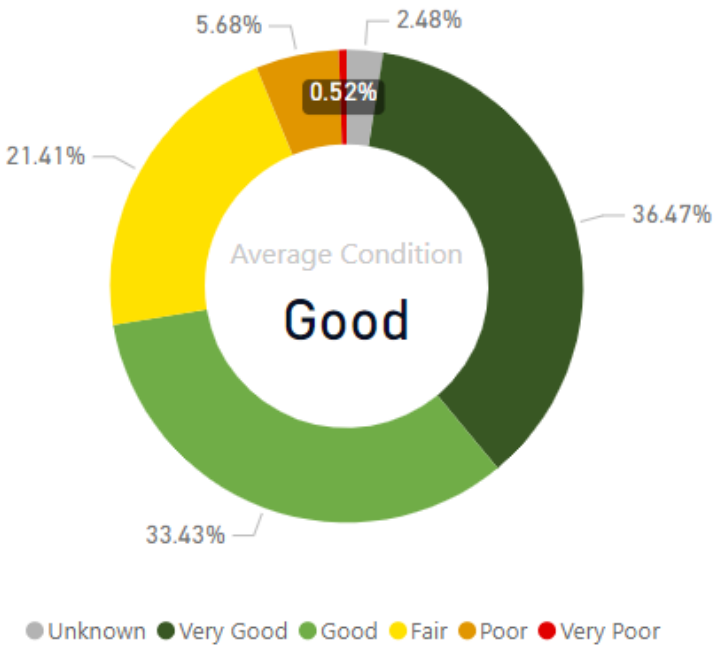
It is also recommended that the City review and document needs for the GIS to fill gaps and document processes and governance of all data. As the City continues down their asset management journey, a strong data management strategy is required to keep and maintain information on all assets, including condition information and renewal activities.

5 Transportation

Replacement Value

$507,351,759 M

Overall Average Asset Condition



Quick Facts

Transportation maintains:

- 251 km of roads throughout the City
- A number of supporting assets including guiderails, sidewalks, streetlights, pedestrian bridges, and parking lots

5 Transportation

Transportation assets allow for the movement of people, goods, and services to support residents' lifestyles and economic activity. The City has approximately 251 km of roads as well as a number of bridges and culverts, all of which are inspected and maintained to provide safe and reliable service for residents and visitors. Of note, this asset class does not include small drainage culverts (less than 1m in diameter) or driveway culverts.

5.1 State of the Infrastructure

5.1.1 Asset Inventory and Valuation

The transportation network includes bridges and culverts, parking lots, pedestrian bridges, retaining walls, assets within the right of way, roads, and sidewalks with a total estimated replacement value of $507 million. Table 5-1 below summarizes the asset inventory and the current estimated replacement values by asset type.

Table 5-1. Asset Inventory and Current Replacement Values - Transportation

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Bridge	2	Units	$6,706,886
Culvert	26	Units	$20,673,177
Parking Lots	49	Units	$1,239,674
Pedestrian Bridge	2	Units	$1,031,753
Retaining Wall	11	Units	$928,805
Right of Way – Guiderails	4,537	m	$1,110,861
Right of Way – Street Light	2,105	Units	$12,711,042
Right of Way – Traffic Signs	4,131	Units	$826,200
Roads – Arterial	79,852	m	$165,575,300
Roads - Local	171,331	m	$281,148,506
Sidewalks	90,586	m	$15,399,555
Total			**$507,351,759**

5.1.2 Asset Condition

Transportation asset condition was assigned using bridge condition index (BCI) scores for bridges and culverts, pavement condition index (PCI) scores for roads, and age/estimated service life for remaining asset types. A description of the condition rating scales for Transportation assets is shown in Table 5-2.

The City ensures bridge and culvert structures are safe and reliable in accordance with regulatory requirements and community expectations. All bridges and major structures are inspected every two years in conformance with the Ontario Structure Inspection Manual (OSIM) which provides a standardized, systematic assessment in accordance with O. Reg. 104/97. These inspections provide the BCI scores used to evaluate condition, and ensure the structural integrity, safety, and condition of these structures through renewal and rehabilitation recommendations.

The roads were assessed during the Roads Needs Study performed as part of the Infrastructure Needs Study, which provided updated PCI values were used to evaluate condition as per the table below.

Table 5-2. Condition Rating Scale – Transportation

Condition	Age/ESL	PCI	BCI
Very Good	>80% life remaining	> 80	> 86
Good	60-80% life remaining	67 – 80	70 – 86
Fair	40-60% life remaining	55 – 67	61 – 70
Poor	20-40% life remaining	35 – 55	41 – 61
Very Poor	0-20% life remaining	< 35	< 41
Unknown			

The overall condition distribution for Transportation assets by replacement value is in Figure 5-1.

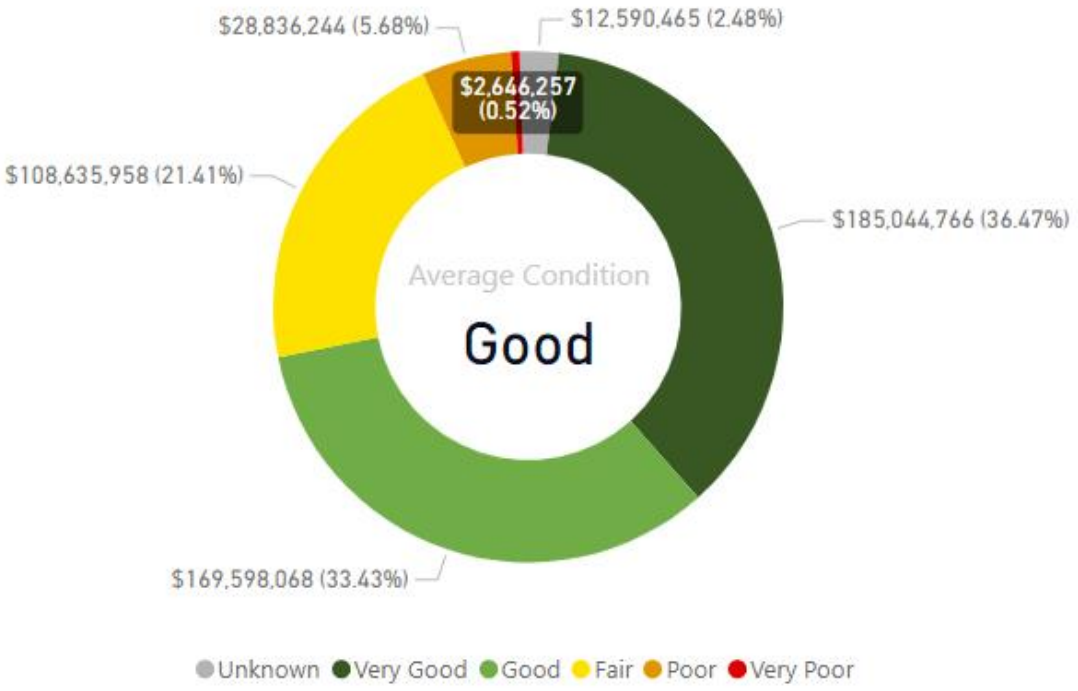


Figure 5-1. Asset Condition by Replacement Value – Transportation

Transportation assets are on average in good condition with over 69% of assets in good or better condition. Approximately 2.5% of assets have an unknown condition. The breakdown of condition by replacement value for each asset type can be seen in Figure 5-2.

The unknown condition values for the Transportation assets included the City's parking lots, some right of way assets including traffic signs. It is recommended the City continue to evaluate opportunities to update asset information where possible.

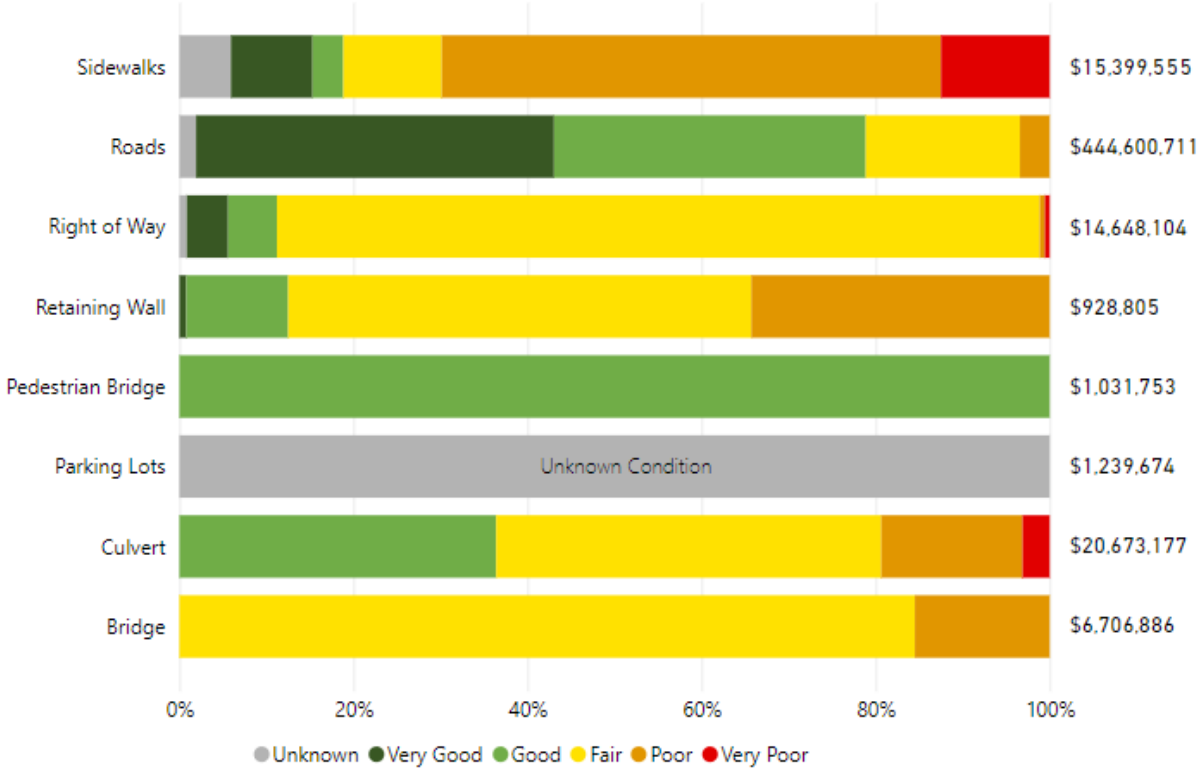


Figure 5-2. Asset Type Condition by Replacement Value – Transportation

Parking lots currently have unknown conditions. The large remainder of assets have conditions assigned. Only 0.52% of the overall transportation condition distribution is in very poor condition, which pertains to a small portion of Right of Way assets (6.66%) and a small portion of culverts (3.11%). Over 75% of the City's roads are in good to very good condition, which accounts for a large amount of the overall Transportation asset register.

5.1.3 Average Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Transportation assets. Figure 5-3 below compares the average age of Transportation asset types to the average estimated service life.

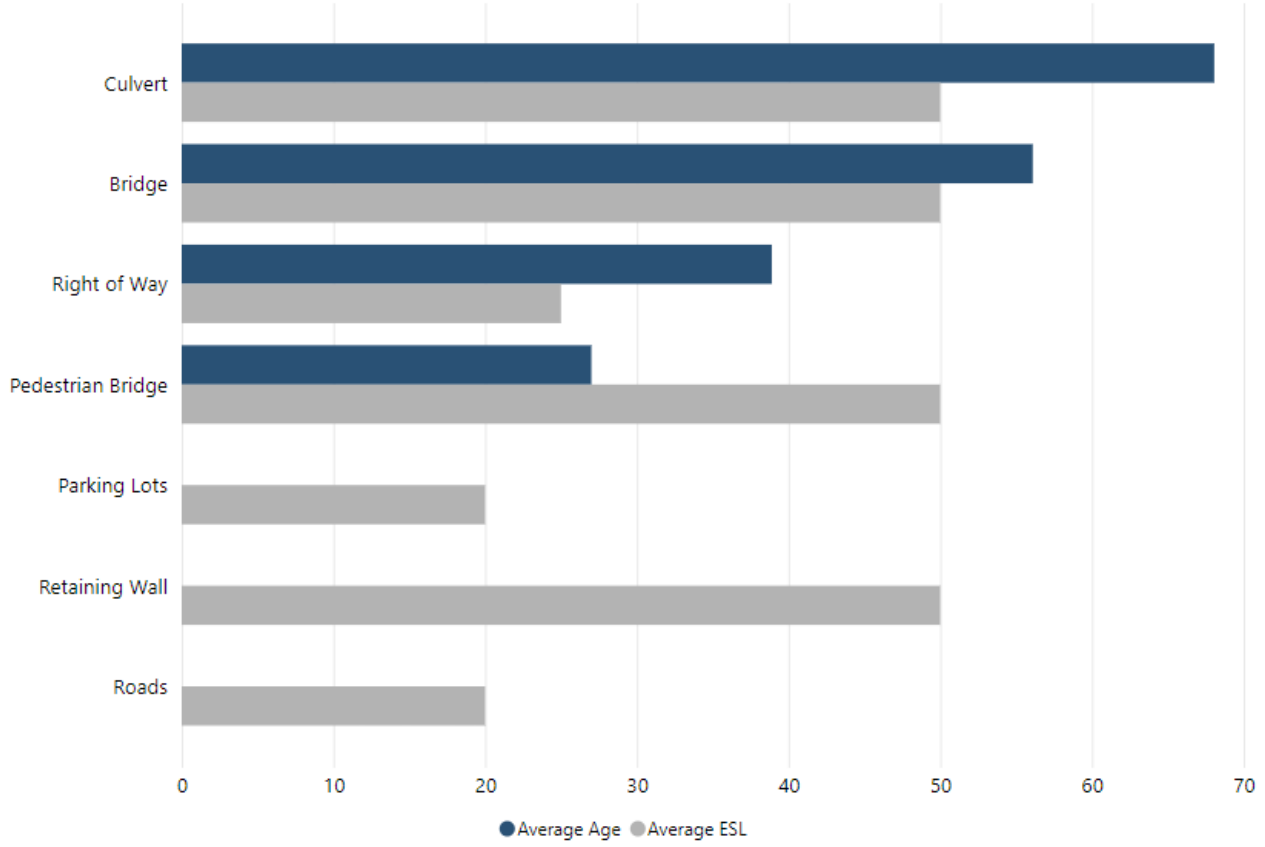


Figure 5-3. Average Age and Average Estimated Service Life – Transportation

Figure 5-3 shows that culverts, bridges and right of way assets are on average typically past their estimated service lives. Bridges and Culverts are inspected regularly through OSIMs in accordance with O. Reg. 104/19 ensuring that they are structurally safe, so while their ages are past the estimated service lives, we know they inspected regularly. Parking lots, retaining walls and roads do not currently have age information.

It is recommended the City try to fill the gap of the age for parking lots and the retaining walls. Roads does not require an installation date/age to assess condition. The roads are evaluated for condition on a regular basis, and this information is used to inform the lifecycle strategies, so age information is not required. It would be a valuable for the City to maintain resurfacing/reconstruction history of the roads to use this information to assist in guiding forecasting of how often roads should be resurfaced.

5.2 Levels of Service

Service Statement: The transportation network is convenient, safe, efficient, and managed in accordance with regulatory requirements.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 5-3 and Table 5-4 provide a summary of the community and technical levels of service metrics for the City's Transportation Network. These are segmented into those that are required under the O.Reg.588/17 and other levels of service metrics that are defined by the City. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Transportation assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 5-3. Community Levels of Service – Transportation

Asset Type	Key Service Attribute	Performance Measure	Current Performance
Regulatory			
Roads	Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	The road network in the City of Port Colborne includes provincial, regional, and municipal roads. The 251km of City owned roads are classified as arterial, collector, local and laneways, in decreasing order of size and capacity. See Appendix D.
Roads	Quality	Description or images that illustrate the different levels of road class pavement condition	See Appendix E.
Bridges & Culverts	Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges & Culverts on roads support all classes of vehicles including motor vehicles, heavy transport vehicles, buses, and emergency vehicles, as well as pedestrians and cyclists.
Bridges & Culverts	Quality	Description or images of the condition of bridges and how this would affect use of the bridges	The City follows the standards and best practices in the Ontario Structure Inspection Manual to determine the condition of bridges and culverts.
Bridges & Culverts	Quality	Description or images of the condition of culverts and how this would affect use of the culverts	The City follows the standards and best practices in the Ontario Structure Inspection Manual to determine the condition of bridges and culverts.

Asset Type	Key Service Attribute	Performance Measure	Current Performance
City Defined			
All	Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	12%

Table 5-4. Technical Level of Service – Transportation

Asset Type	Key Service Attribute	Performance Measure	Current Performance
Regulatory			
Roads	Scope	Number of lane-kilometres of each of arterial roads as a proportion of square kilometres of land area of the municipality.	0.64
Roads	Scope	Number of lane-kilometres of each of collector roads as a proportion of square kilometres of land area of the municipality.	No collector roads
Roads	Scope	Number of lane-kilometres of each of local roads as a proportion of square kilometres of land area of the municipality.	1.37
Roads	Quality	Average pavement condition index for paved roads in the municipality	74.3
Roads	Quality	Average surface condition for unpaved roads in the municipality	71.2

Asset Type	Key Service Attribute	Performance Measure	Current Performance
Bridges & Culverts	Scope	Percent of bridges in the municipality with loading or dimensional restrictions	50%
Bridges & Culverts	Quality	For bridges, the average bridge condition index value	65
Bridges & Culverts	Quality	For structural culverts, the average bridge condition index value. (span of 3m or greater)	67
City Defined			
Roads	Accessible & Reliable	Percentage of replacement value of assets in very poor condition	0%
Roads	Accessible & Reliable	Percentage of roads that are paved	72.23%
Roads	Accessible & Reliable	Length of off-road trails	25.30
Roads	Accessible & Reliable	Percent local roads with sidewalks	63.99%
Bridges & Culverts	Accessible & Reliable	Percent of replacement value of assets in very poor condition	2.35%

5.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within Transportation.

5.3.1 Lifecycle Activities

Lifecycle activities for Transportation assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that transportation assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Maintaining these assets in optimal condition, the City can extend their lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services and amenities offered from well-maintained assets. Table 5-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities. Any lifecycle activity mentioning minimum maintenance standards refers to those established under O. Reg. 239/02 Minimum Standards for Municipal Highways.

Table 5-5. Asset Management Practices and Associated Frequency – Transportation

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Traffic Studies/Counts	• As needed
• Pavement Condition Assessment (Roads Needs Study)	• Every 5 years
• Bridge and Culvert Condition inspections (following OSIM)	• Bi-Annually
Operations & Maintenance Activities	
• Road inspections as per the Minimum Maintenance Standards	• As per MMS
• Road sweeping	• Road classification
• Visual inspections by road patrol	• As per MMS
• Additional maintenance as per finds of road patrol inspections	• As required
• Winter maintenance – snow plowing, salt/sand	• As required
• Asphalt patching	• As required
• Line painting	• Annually
• Crack sealing	• As required
• Dust suppression	• Annually
• Culvert inspections	• As required
• Road side shouldering	• Annually
• Catch basin cleanouts	• Annually 25% per year
• Sidewalk maintenance	• As required

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• Guiderail maintenance	• As required
• Roadside ditching	• As required
• Roadside lawn mowing	• As required
• Road grading (stone, clay roads)	• Annually
• Roadside tree work	• Road/pedestrian safety
• Signage – retroreflectivity inspections	• As required
• Bridge and Culvert inspection in accordance with Minimum Maintenance Standards	• Bi-Annually
Renewal/Replacement Activities	
• Road resurfacing	• Annually
• Guiderail replacement	• End of life
• Sidewalk replacement	• End of life
• Curb replacement	• End of life
• Major road reconstruction	• End of life
• Bridge and Culvert replacement of deteriorated structures	• End of Life
• Bridge and Culvert activities instigated by OSIM inspection findings	• Annually
Disposal Activities	
• Asphalt re-use as backfill from milling	• Ad-hoc
• Reuse of asphalt in granular A and B in reconstruction	• Ad-hoc

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• Contaminated soils disposal from Roads work	• Ad-hoc
• Bridge and Culvert - decommission at end of useful life	• As identified
• Bridge and Culvert - disposal of abandoned or obsolete structures during construction projects	• As identified
Service Improvement & Growth Activities	
• Road widening	• As identified
• New sections of road	• As identified
• Addition of new sidewalks	• As identified
• On demand changes as per development	• As identified
• Bridge and Culvert - additions to support changes in demand as per local developments	• As identified

5.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 5.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 5.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

5.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of anticipated funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement activities for Transportation is expected to be approximately $5.7 million. The condition distribution for the Anticipated Budget scenario can be seen below in Figure 5-4. The condition distribution shows that assets in poor to very poor condition increases over the forecast period. Assets in good to very good condition also increases slightly with the current anticipated annual funding.

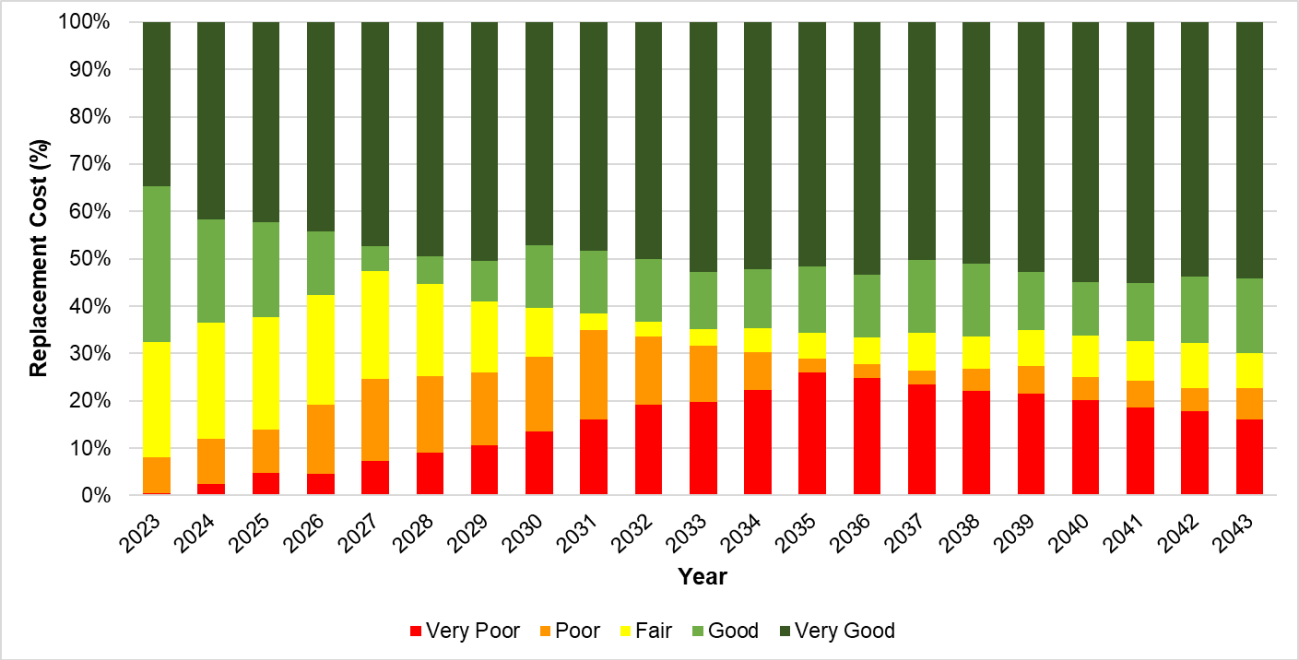


Figure 5-4. Transportation Performance Forecast with Current Funding

5.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Transportation asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $4.2 million is needed to maintain the current performance (condition/level of service) for Transportation assets. There is no funding gap of to maintain levels of service compared to the anticipated annual funding. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 5-5. Figure 5-5 shows an overall decline in asset condition, with assets in good to very good condition going from approximately 70% to under 50% over the forecast period.

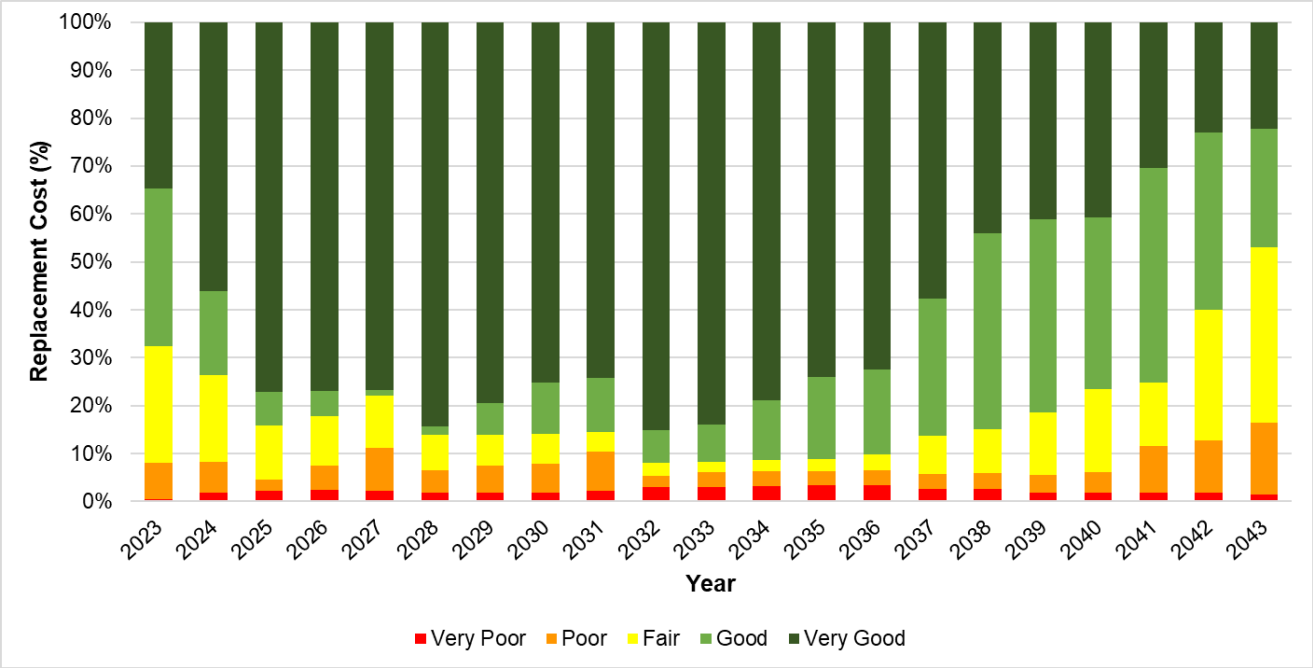


Figure 5-5. Transportation Performance Forecast to Maintain Levels of Service

5.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation, and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an annual budget of $5.3 million is required for this scenario. There is no funding gap compared to the Anticipated Budget allocation in Transportation. The condition distribution for Transportation assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 5-6. Overall condition decreases slightly in this forecast scenario, with assets in fair condition increasing and assets in good to very good condition decreasing.

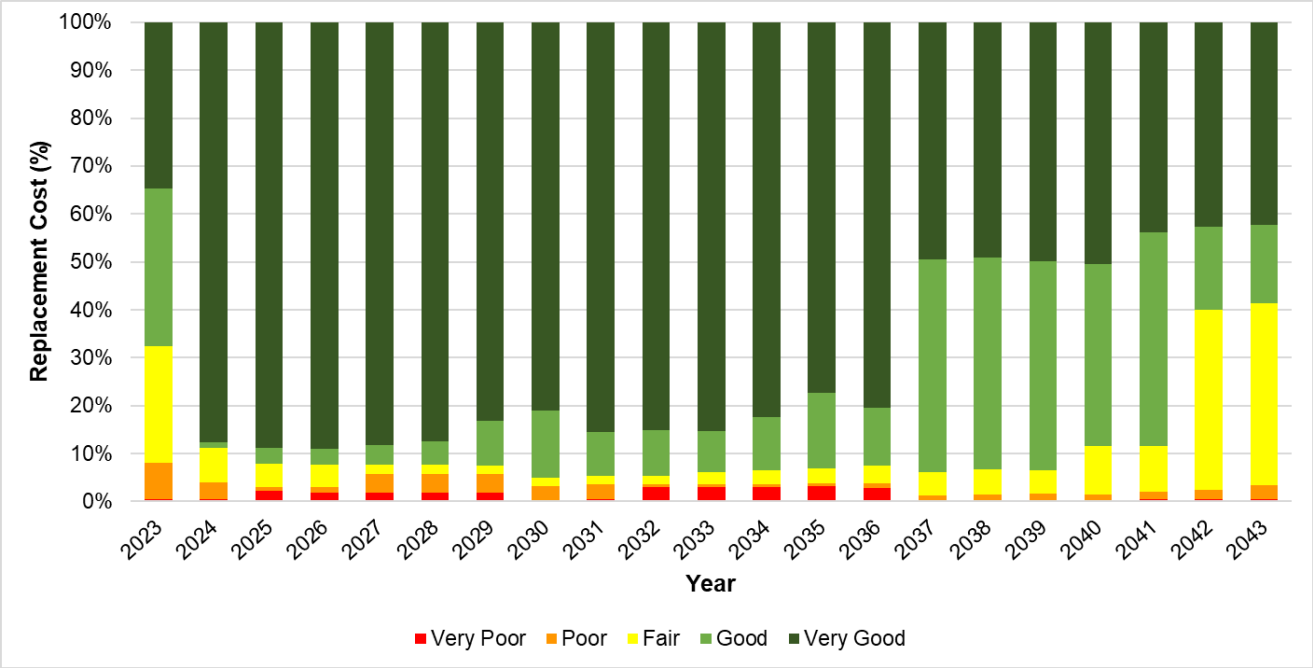


Figure 5-6. Transportation Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

5.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 5-7 and Table 5-6. Figure 5-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 5-6.

The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies if the funding levels developed are provided as reported in this plan. If current anticipated investments in Transportation are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

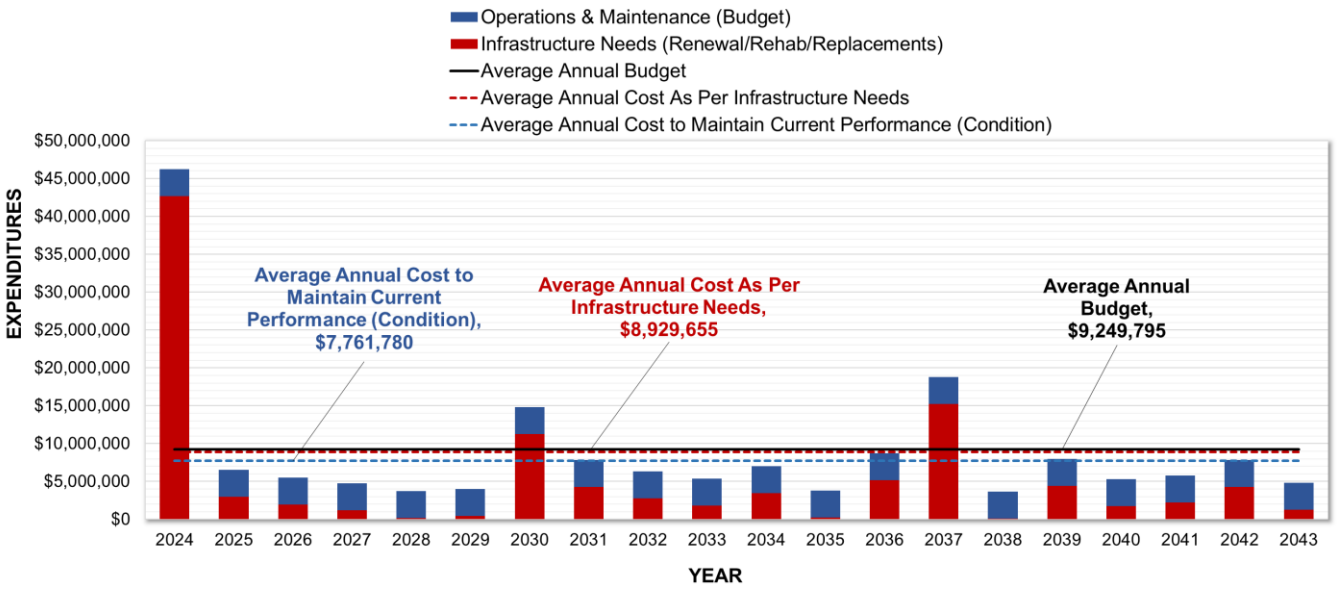


Figure 5-7. Transportation Scenario Comparison

There is a "backlog" included in the year 2024, which represents the cumulative backlog of deferred work that has accumulated and is needed to be complete. Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals work puts the City of Port Colborne at risk to not achieve intergenerational equality. If the City continues to push out necessary renewals, future generations will be unable to maintain the level of service the customers currently enjoy and burden future generations with significant costs.

Continued deferrals of projects will also lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

5.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 5-6.

Table 5-6. Transportation Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$3,552,075	$3,552,075	$3,552,075
Renewal, Rehabilitation, & Replacement	$5,697,720	$4,209,705	$5,377,580
Total Expenditure	**$9,249,795**	**$7,761,780**	**$8,929,655**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

5.5 Data Confidence and Improvement Plan

Table 5-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 5-7. Data Confidence - Transportation

Data Source	Data Confidence
GIS Infrastructure Needs Study, including Roads Needs Study, Sidewalk Inspection, Guiderail Inspection OSIM Inspections	Good

5.5.1 Recommendations for Improvements

Most transportation assets have a high level of confidence as a result of the Infrastructure Needs study that assessed and compiled conditions for many of the transportation assets. There are some outliers, where minimal information was available (i.e. Parking Lots), and further assessment of these assets are required.

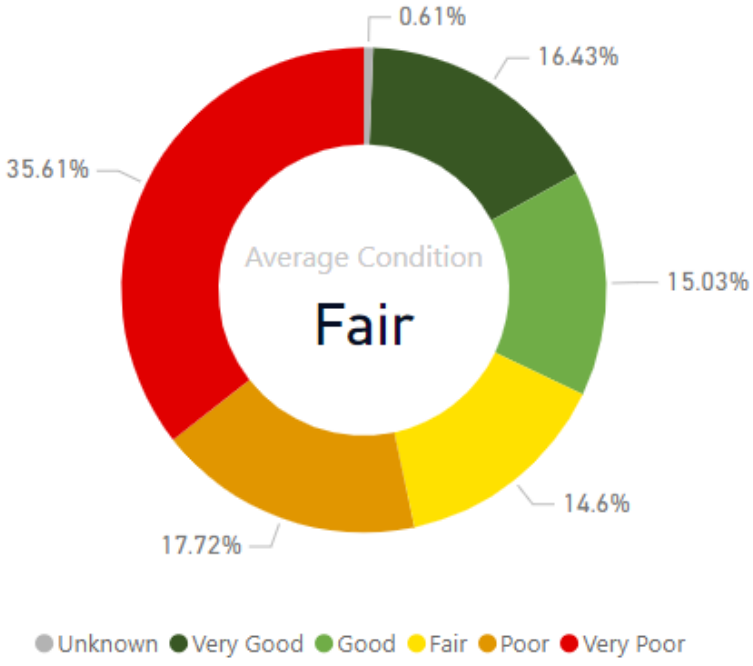
It is also recommended that the City review and document needs for the GIS to fill gaps and document processes and governance of all data. As the City continues down their asset management journey, a strong data management strategy is required to keep and maintain information on all assets, including condition information and renewal activities.

6 Emergency Services

Replacement Value

$6,088,235 M

Overall Average Asset Condition



Quick Facts

Emergency Services has

- 9 Fleet Assets including response vehicles, pumper trucks, a tanker, rescue truck and ladder truck
- Over 500 pieces of equipment to support Emergency Service delivery

6 Emergency Services

Emergency Services is a critical service in the City of Port Colborne, providing timely response and assistance during emergencies in the community ensuring the well-being of residents. The fleet and equipment assets that support Emergency Services are essential. Ensuring they are in good condition is vital to the services the City provides.

6.1 State of the Infrastructure

6.1.1 Asset Inventory and Valuation

Emergency Services includes fleet and equipment with a total estimated replacement value of $6 million. The inventory of Emergency Services was developed through consultation with emergency services and included to assets maintained in their expert system, and some gaps were filled based on staff expertise. It is recommended that the City put efforts into maintaining and updating this information for asset management purposes to improve the forecasting of the needs of the emergency services assets. The fire stations have been included under the Facilities category for the purposes of this AMP. Table 6-1 below details the inventory and the current estimated replacement value by asset type.

Table 6-1. Asset Inventory and Current Replacement Value – Emergency Services

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Fleet	9	Units	$5,612,200
Equipment	539	Units	$476,035
Total			**$6,088,235**

6.1.2 Asset Condition

Condition was assigned to assets in the Emergency Services based on age/estimated service life. A description of the condition rating scale is shown in Table 6-2.

Table 6-2. Condition Rating Scale – Emergency Services

Condition	Age/ESL
Very Good	>80% life remaining
Good	60-80% life remaining
Fair	40-60% life remaining
Poor	20-40% life remaining
Very Poor	0-20% life remaining
Unknown	

Emergency Services overall asset condition by replacement value can be seen in Figure 6-1.

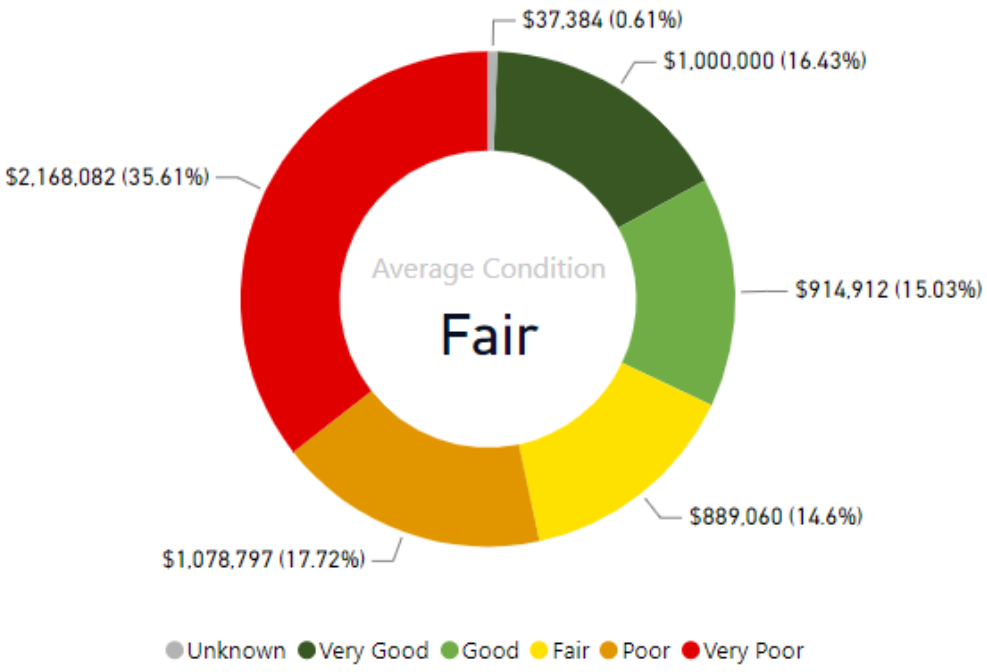


Figure 6-1. Asset Condition by Replacement Value – Emergency Services

Assets in Emergency Services are on average in **fair condition**, with over 46% of assets in fair or better condition. There is a large portion of assets in very poor condition (35%), these assets are past their estimated service life or coming close and will be due for replacement or upcoming for replacement soon. Condition by replacement value by asset type can be seen below in Figure 6-2.

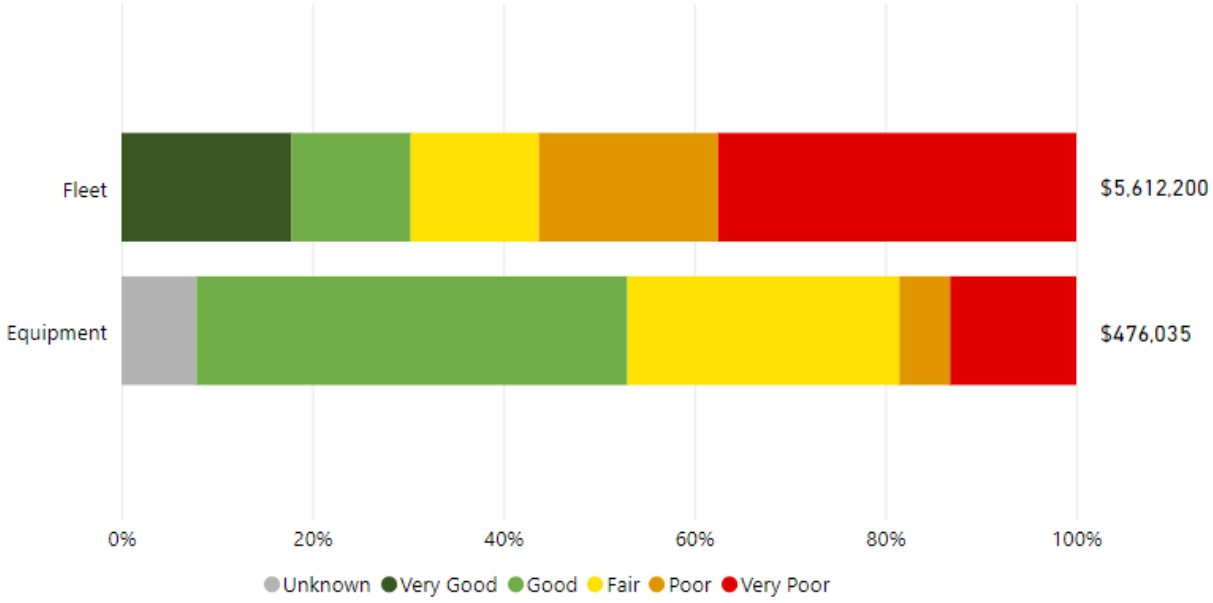


Figure 6-2. Asset Type Condition by Replacement Value – Emergency Services

Over 73% of Equipment assets are in fair or better condition. A large potion of the total replacement value of Emergency Services Fleet is currently in very poor condition. These assets are at or nearing the end of their estimated service lives and are due for replacement upcoming. Fleet asset are inspected regularly by staff, so although they are in very poor condition, staff ensure these vehicles are safe to be in service and can continue to provide excellent service to the community.

6.1.3 Average Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Emergency Services assets. The average age and average estimated service lives of Emergency Services Fleet and Equipment assets is shown below in Figure 6-3.

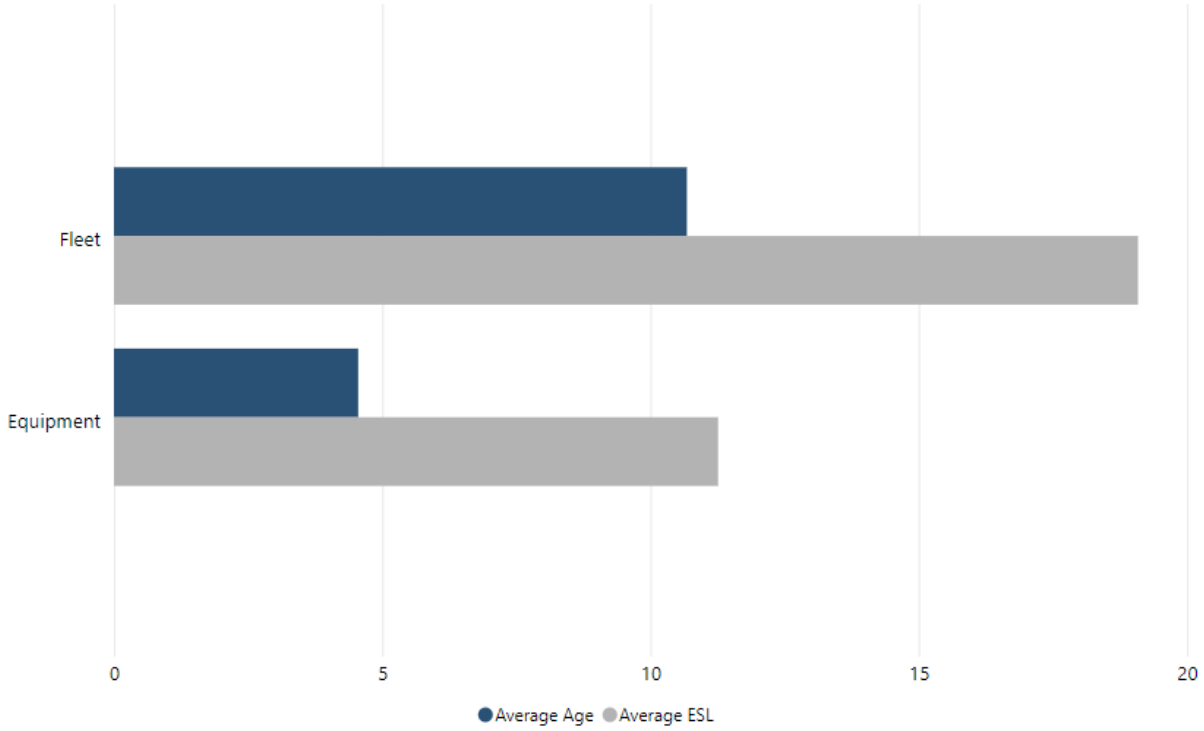


Figure 6-3. Average Age and Average Estimated Service Life – Emergency Services

Both Fleet and Equipment assets have a lower average age compared to their average estimated service lives. This suggests that many assets in Emergency Services have many years of useful life before they are due for replacement.

6.2 Levels of Service

Service Statement: Emergency services protects the lives and properties of City residents and ensure public safety through emergency response, fire prevention and community education.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 6-3 and Table 6-4 provide a summary of the community and technical levels of service metrics for the City's Emergency Services. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Emergency Services assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 6-3. Community Level of Service– Emergency Services

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	9%

Table 6-4. Technical Level of Service– Emergency Services

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Accessible & Reliable	Percentage of total replacement value of assets in very poor condition	35.61%

6.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within Emergency Services.

6.3.1 Lifecycle Activities

Lifecycle activities for Emergency Services assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset. These activities ensure that Emergency Services assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 6-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 6-5. Asset Management Practices and Associated Frequency – Emergency Services

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Fire Master Plan	• As Required
Operations & Maintenance Activities	
• Planned maintenance (PM)	• As required
• Reactive maintenance	• As required
• Equipment inspections	• Daily
• Purchase of personal protective and rescue equipment, small equipment, and materials	• As legislated or as required
Renewal/Replacement Activities	
• Replacement	• End of service life as per strategy
• Spare fire fleet replacement	• Fleet is front run for first 15 years of service, then rotated to a spare for 5 years and decommissioned at 20 years
• Re-build engines	• Reactive
Disposal Activities	
• Sell-off vehicles, fleet and equipment	• Opportunistically

6.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 6.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 6.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

6.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement activities for Emergency Services is approximately $329,000. The condition distribution for the current anticipated budget scenario can be seen below in Figure 6-4. The overall condition of assets in Emergency Services increases in this scenario. Assets in good to very good condition increases from just over 30% to over 70% over the 20-year forecast period. If the City ensures the current anticipated investment into Emergency Services is sustained, assets will see an overall increase in condition, resulting in continued quality services to residents.

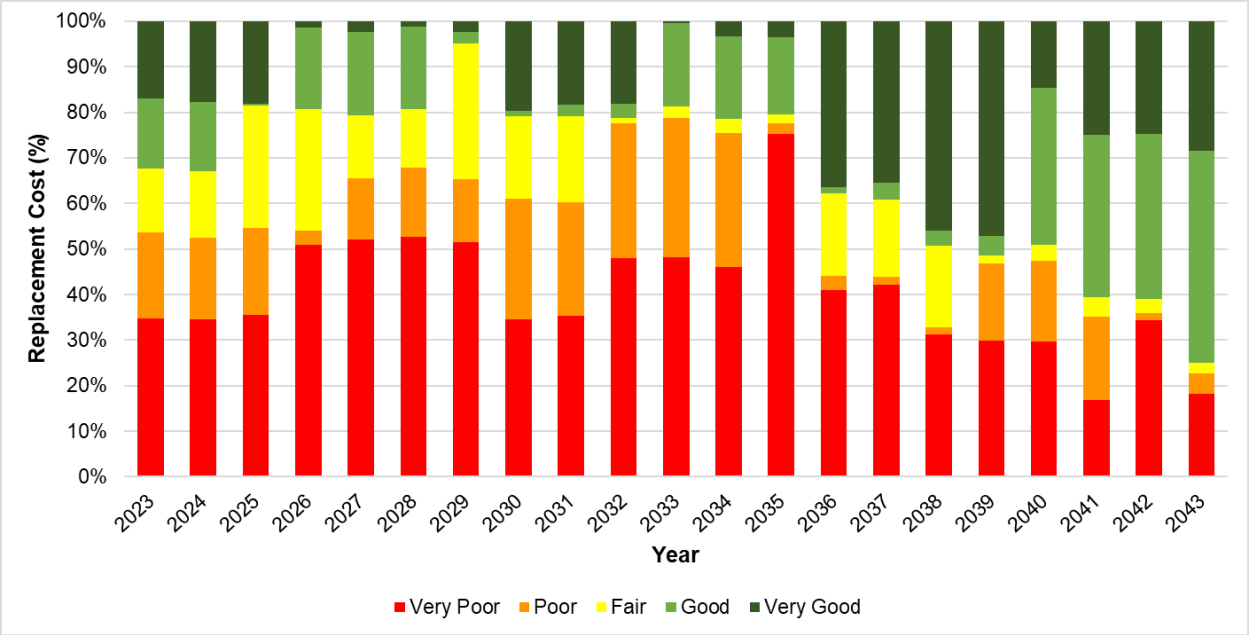


Figure 6-4. Emergency Services Performance Forecast with Current Funding

6.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Emergency Services asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $257,000 is needed to maintain the current performance (condition/level of service) for Emergency Services assets. There is no funding gap to maintain levels of service for Emergency Services. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 6-5. In this forecast the condition profile for assets shows an overall decrease, with assets in very poor condition increasing significantly over the 20-year period.

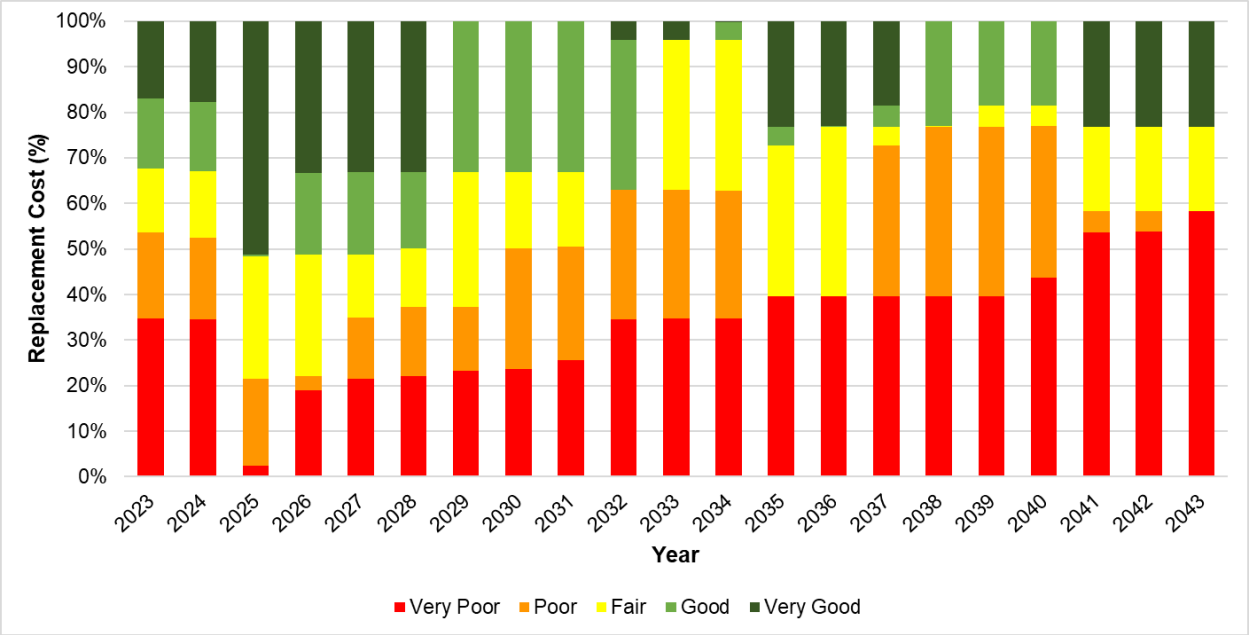


Figure 6-5. Emergency Services Performance Forecast to Maintain Levels of Service

6.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $329,000 is required for this scenario. There is no funding gap compared to the anticipated budget allocation in Emergency Services. The condition distribution for Emergency Services assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 6-6. The performance forecast shows that while assets in good to very good condition increase, assets in very poor condition also increase quite drastically through the 20-year forecast to just over 50%.

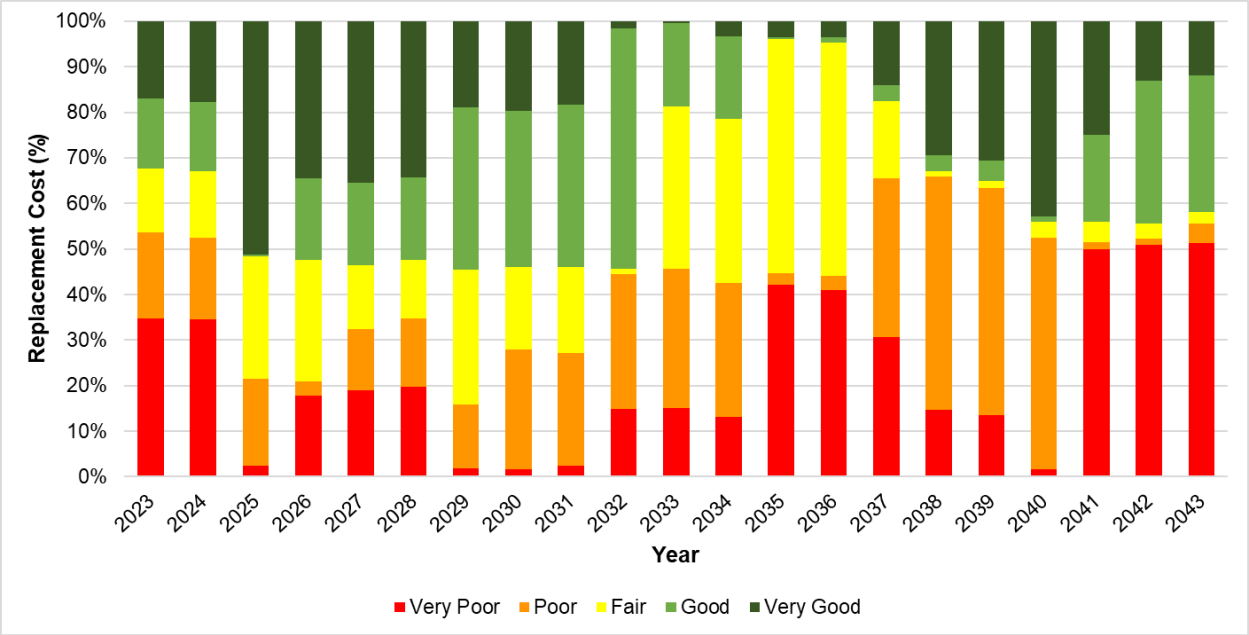


Figure 6-6. Emergency Services Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

6.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 6-7 and Table 6-6. Figure 6-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 6-6.

The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies. If current anticipated investments in Emergency Services are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

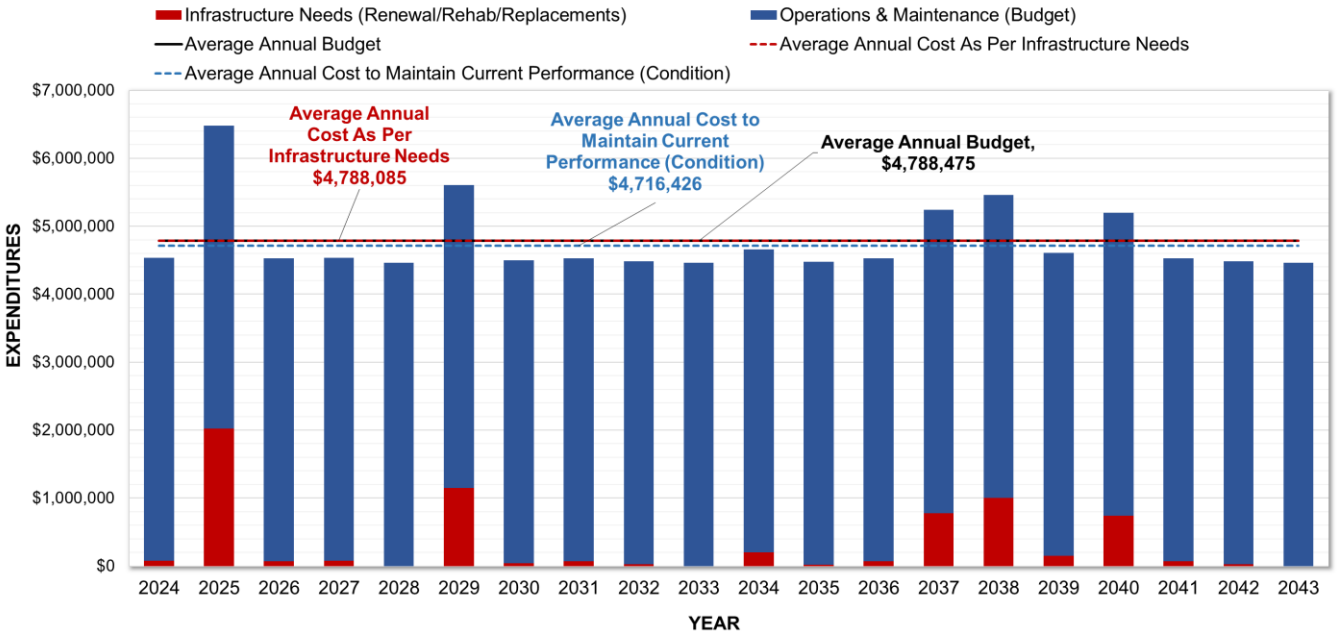


Figure 6-7. Emergency Services Scenario Comparison

6.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 6-6.

Table 6-6. Emergency Services Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$4,459,000	$4,459,000	$4,459,000
Renewal, Rehabilitation, & Replacement	$329,475	$257,426	$329,085
Total Expenditure	**$4,788,475**	**$4,716,426**	**$4,788,085**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

6.5 Data Confidence and Improvement Plan

Table 6-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 6-7. Data Confidence – Emergency Services

Data Source	Data Confidence
Export from Fire Software Staff Feedback on Data	Fair

6.5.1 Recommendations for Improvements

A thorough review and update of the data for Emergency Services is required. Much of the information provided had gaps, which were attempted to be filled by staff at the time of development of this AMP.

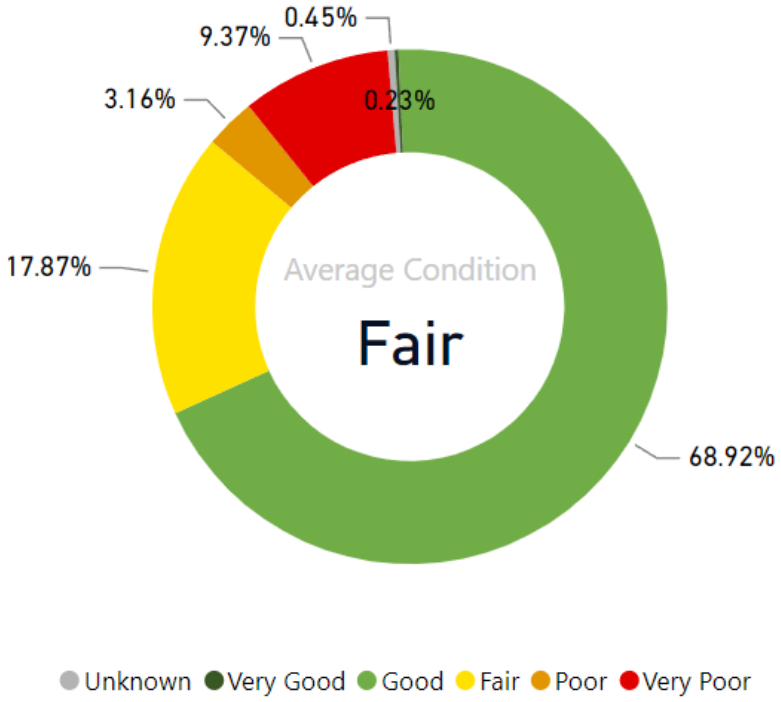
Once complete, the resulting inventory should be used and maintained on an on-going basis. Ensuring accurate and comprehensive data is crucial for effective planning and resource allocation. By updating information such as installation dates, and replacement costs, they City can better assess its emergency services infrastructure and make informed decisions for maintenance and improvements. Review for completeness will help identify any gaps or inconsistencies in the data, allowing for more reliable basis for decision-making. This proactive approach can contribute to the overall efficiency and effectiveness of emergency services within the City.

7 Facilities

Replacement Value

$241,233,361 M

Overall Average Asset Condition



Quick Facts

Facilities has

- 31 different Facilities throughout the City
- Various public facilities including museum and recreation buildings

7 Facilities

The City of Port Colborne owns and operates 31 buildings ranging from municipal work sites to buildings that provide recreation and leisure to residents. Facilities can provide several benefits to a community's sense of belonging and well-being. Facilities like the Library and Museum can provide meeting places for residents. Recreation buildings such as community centres and athletic fields offer health and wellness benefits allowing residents to gather and move their bodies.

7.1 State of the Infrastructure

7.1.1 Asset Inventory and Valuation

There are several different facility types including a grain terminal, museum, fire, marina, library, corporate services, economic development, recreation and public works facilities. In total the City has 32 buildings, with a total estimated replacement value of $241.2 million. Table 7-1 below details the inventory and the current estimated replacement value by asset type.

Table 7-1. Asset Inventory and Current Replacement Value - Facilities

Service Group	Facility Name	Gross Floor Area (sf)	FCI	2024 Estimated Replacement Value
Corporate Services	Animal Shelter	1,260	5	$504,000.00
Corporate Services	City Hall	21,700	2.6	$14,690,900.00
Economic Development	Tour & Info	1,750	1.9	$1,130,500.00
Fire	Fire Station #2	3,610	2.8	$2,321,230.00
Fire	Killaly Fire Hall	17,427	0.7	$11,205,561.00
Grain Terminal	Grain Terminal	172,260	13.4	$43,581,780.00
Library	Library	12,040	3	$7,043,400.00
Marina	Marina Supply Store	4,050	7.8	$2,616,300.00
Marina	Sugarloaf Marina	9,500	6.3	$6,137,000.00
Museum	Arabella's Tearoom	1,494	14.8	$995,004.00
Museum	Museum Heritage Resource Centre (Museum Sharpe)	3,600	0.9	$2,397,600.00
Museum	Museum William's Home	2,208	5.4	$1,470,528.00

Service Group	Facility Name	Gross Floor Area (sf)	FCI	2024 Estimated Replacement Value
Museum	Roselawn Heritage	26,480	3.6	$17,635,680.00
Museum	Museum LR Wilson Archives	2,990	UNK	$1,196,000.00
Public Works	Johnson Pumping	330	182.4[1]	$99,000.00
Public Works	PCOC BCA (Operations Center)	38,400	1.8	$22,464,000.00
Recreation	Athletic Field BCA - Draft (Washroom)	1,800	7.7	$720,000.00
Recreation	Bandshell BCA Draft	1,900	3.5	$760,000.00
Recreation	Bethel Community Centre	6,275	32.7	$3,413,600.00
Recreation	Centennial Park (Washroom)	522	10.4	$208,800.00
Recreation	Elizabeth Street (Thomas A Lannan Washrooms)	1,900	1.4	$760,000.00
Recreation	Fielden Avenue (Washroom)	406	0	$162,400.00
Recreation	Harbour Master	350	12.6	$140,000.00
Recreation	Lions Club Field (Cantenne & Kitchen)	1,400	3.4	$560,000.00
Recreation	Lock 8 Washrooms	512	5.3	$204,800.00
Recreation	Lockview (Washroom)	572	59.6	$228,800.00
Recreation	Sherkston CC	5,050	16.6	$2,747,200.00
Recreation	Tennis Courts (Washroom)	1,900	0	$760,000.00
Recreation	Vale Health & Wellness Centre	145,443	3.8	$93,956,178.00
Recreation	Lock 8 Gateway Park Pavilion	1,130	UNK	$113,000.00
Recreation	Nickle Beach Portable Washrooms	1,000	UNK	$472,500.00
Total				**$240,695,761**

It should be noted that the conditions provided in the valuation table are evaluated based on the FCI of the facility which is calculated based on aggregating the total cost of any outstanding needs in relation to the total replacement value of the facility. This information has been provided to have a complete view of the overall facility, and the remainder of the analysis for facilities is based on the

[1] Based on results of BCA, Johnson Pumping Station would be more costly to repair than it is to replace this facility.

building condition assessments at the component level for all facilities, where available. How condition is assigned based on FCI (in Table 7-1) and for the components based on the building condition assessments, can be found in Table 7-2.

The component-level data is derived from the Building Condition Assessments (BCAs) where the City completed in 2022-2023, which provide detailed evaluations of the condition and replacement needs of individual facility components. By analyzing the component level, a more granular and accurate understanding of rehabilitation and replacement priorities can be achieved and provides a more accurate forecast of the facility needs.

It is important to note that the replacement values of the facilities are not a direct aggregation of the replacement costs for the individual components of these facilities. The overall cost to replace an entire facility is higher than the sum of replacing individual components separately. This higher costs considers factors such as demolition, land acquisition, and other complexities that may arise when replacing an entire facility rather than its parts.

Efforts have been made by staff to update the replacement values of the facilities based on known replacement costs per square foot. Insurance values, and other estimators have been noted as being too low in some cases, so this analysis was required to update replacement values to reflect present day costs and pressures being seen within the industry.

7.1.2 Asset Condition

The information noted above was for the overall building condition assessment and replacement values, provided for reference. The remainder of the analysis for this AMP is based on the component information provided by the building condition assessments. The overall condition of Facilities components by replacement value can be seen below in Figure 7-1 and Figure 7-2.

Table 7-2. Condition Rating Scale – Facilities

Condition	Overall: FCI Range	Component: Condition Score
Very Good		1
Good	0-5%	2
Fair	5-10%	3
Poor	10-20%	4
Very Poor	>20%	5
Unknown		

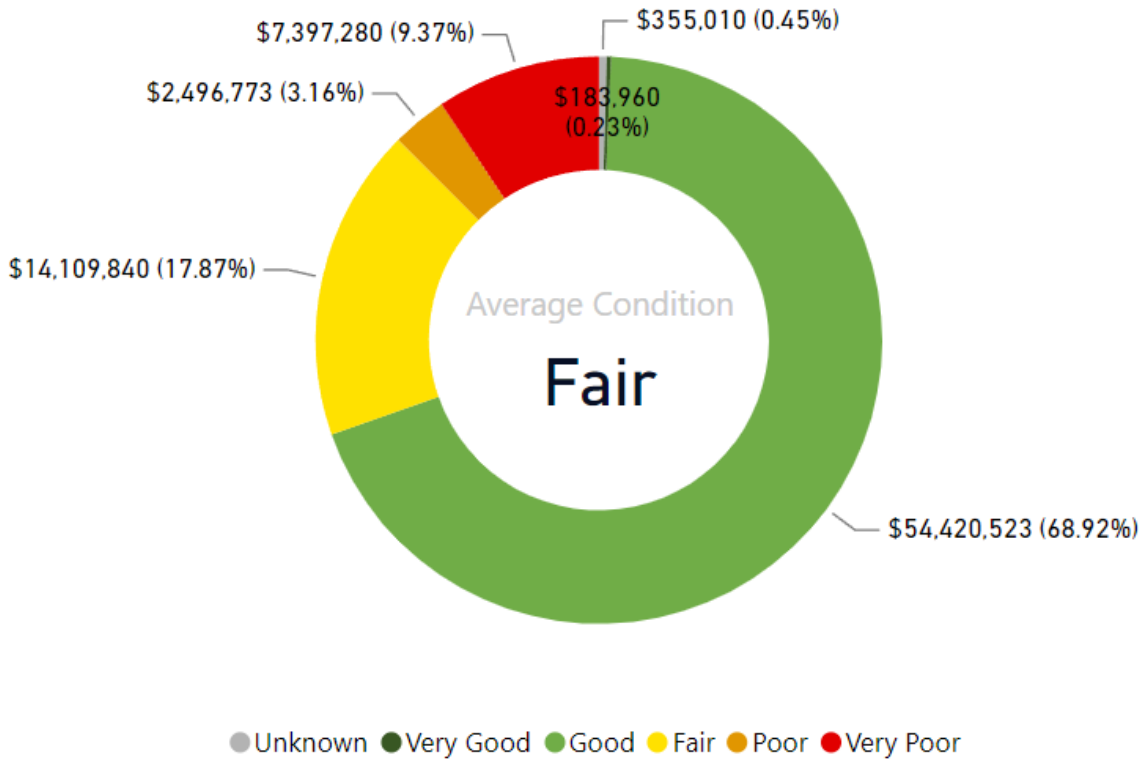


Figure 7-1. Asset Condition by Replacement Value – Facilities

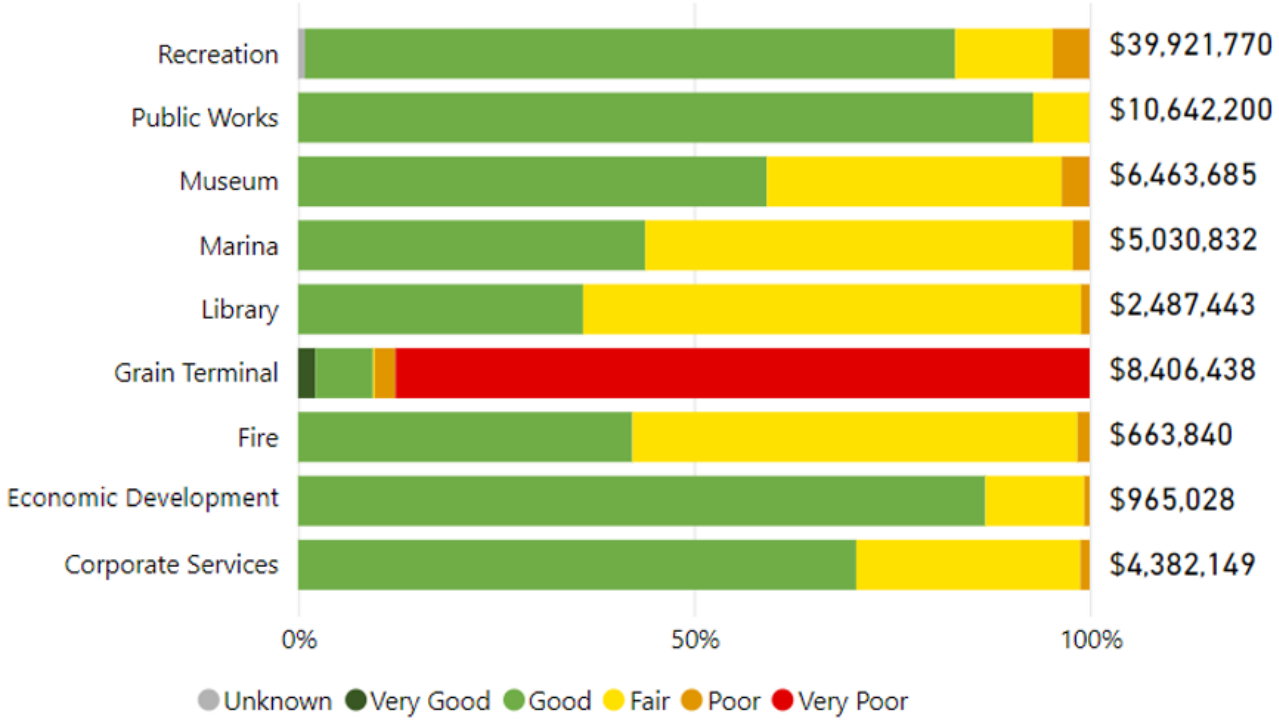


Figure 7-2. Asset Type Condition by Replacement Value - Facilities

Facilities are on average in **fair condition**. Figure 7-2 shows that the Grain Terminal is largely in very poor condition. Otherwise, facilities assets are generally in fair or better condition.

7.1.3 Average Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Facilities. Figure 7-3 below shows the average age compared to the average estimated service life for all Facilities asset groups.

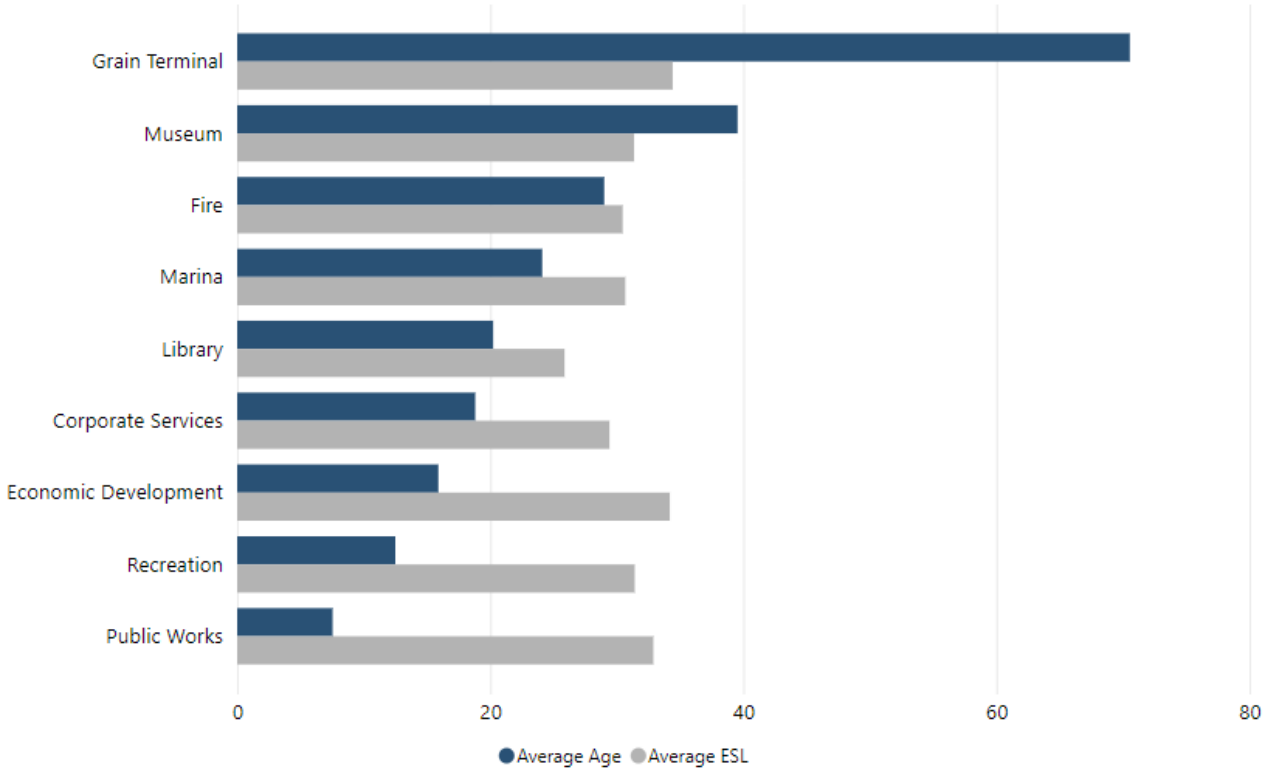


Figure 7-3. Average Age and Average Estimated Service Life - Facilities

All asset groups have age information. Most Facility asset groups have an average age that is lower than its estimated service life. The Museum and Grain Terminal both have an average age older than its estimated service life. While this could suggest that these assets need replacement, we have building condition assessments to tell us the condition. The Grain Terminal is past its service life, being in mostly very poor condition. This building is to be torn down in future as it is no longer serving the community. The Museum was mostly found in fair or better condition, with only a small portion of assets in poor condition. At least one Museum building is a designated heritage building, so a higher age is in line with this designation.

7.2 Levels of Service

Service Statement: City facilities include services such as infrastructure management, recreation, economic development, and administration. The City aims to keep facilities that are well-maintained, safe, and meet the needs of the community.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 7-3 and Table 7-4 provide a summary of the community and technical levels of service metrics for the City's Facilities. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Facilities assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 7-3. Community Level of Service– Facilities

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	7%

Table 7-4. Technical Level of Service– Facilities

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Accessible & Reliable	Percent of facilities above target FCI (target is FCI is less than 10%)	35%
Accessible & Reliable	Percent of replacement value facility assets in very poor condition	9.37%
Accessible & Reliable	Gross Square Footage	7,944,608
Sustainable	Annual GHG emissions	2,096 tonnes CO^2 equivalent

7.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within Facilities.

7.3.1 Lifecycle Activities

Lifecycle activities for Facilities assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that Facilities assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 7-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 7-5. Asset Management Practices and Associated Frequency – Facilities

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Roof inspection program	•
• Condition assessment	• On-going
• Hazardous material assessment (asbestos, etc.)	• As required
• Master Plan	• Future (to be assessed with Parks Master Plan)
Operations & Maintenance Activities	
• Reactive and Preventative Maintenance	• As required
• Health & Safety Inspections	• Monthly
Renewal/Replacement Activities	
• Replacement of major facility components	• As identified
• Replacement of other facility components based on condition performance score	• As identified
Disposal Activities	
• Tenders pertaining to facility equipment (recycling requirements)	• As required
Service Improvement & Growth Activities	
• New facilities	• As identified
• Equipment upsizing	• As identified
• Expansion	• As identified
• Interior renovations	• As identified

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• New technology	• As identified

7.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 7.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 7.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

7.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 30% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement for Facilities is $2.3 million. The condition distribution for the anticipated budget scenario can be seen in Figure 7-4. Overall asset condition stays similar over this forecast scenario, with assets in very poor condition decreasing and assets in very good condition increasing slightly.

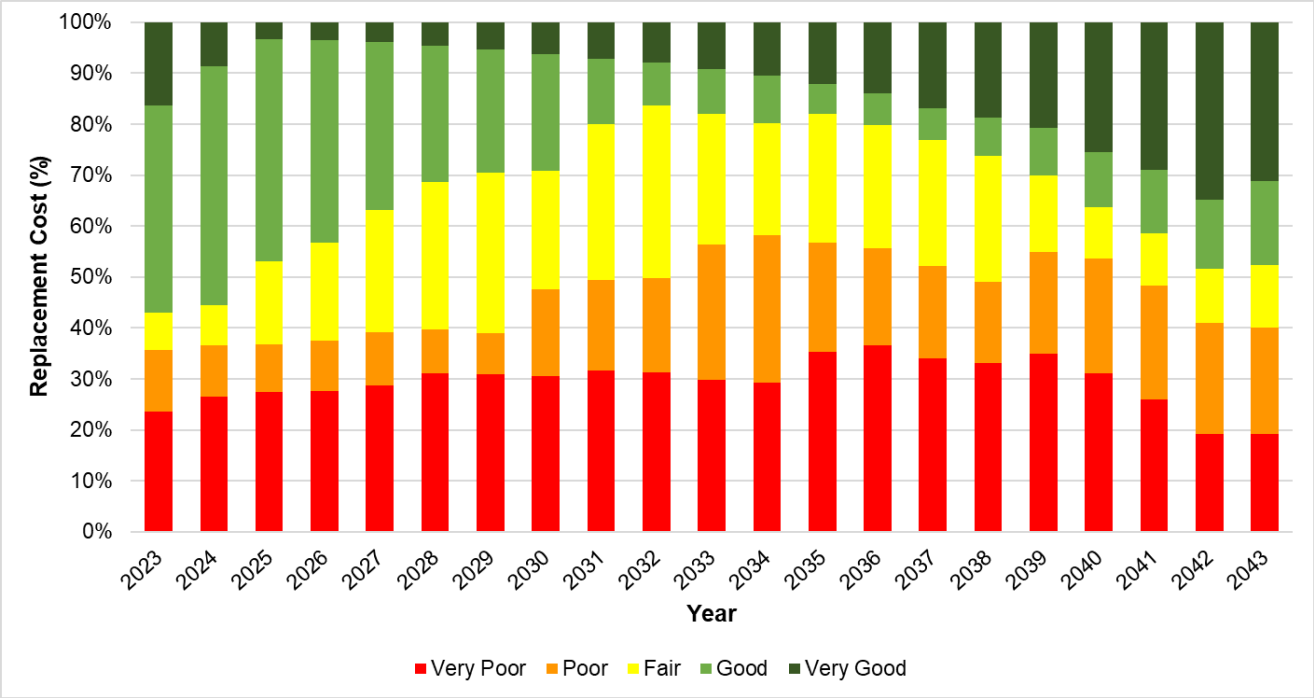


Figure 7-4. Facilities Performance Forecast with Current Funding

7.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Facilities asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $2.5 million is needed to maintain the current performance (condition/level of service) for Facilities assets. There is currently a funding gap of $173,000 to maintain levels of service. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 7-5. The overall condition decreases slightly in this scenario, with assets in good to very good condition ending at below 40% of overall asset condition.

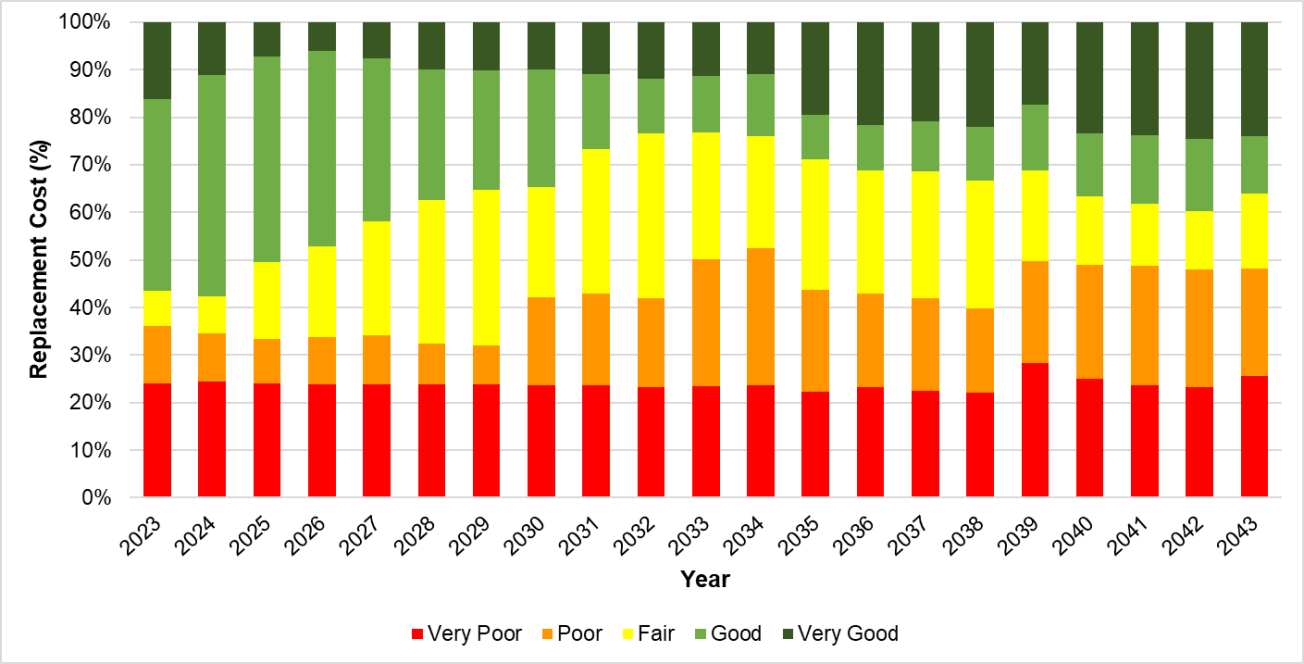


Figure 7-5. Facilities Performance Forecast to Maintain Current Levels of Service

7.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation, and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of 2.7 million is required for this scenario. There is a funding gap of approximately $449,000 compared to the anticipated budget allocation in Facilities. The condition distribution for Facilities assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 7-6. It can be seen below that overall condition of assets decreases slightly with this scenario. This will be further reviewed upon further analysis of the needs recommended in the building condition assessments.

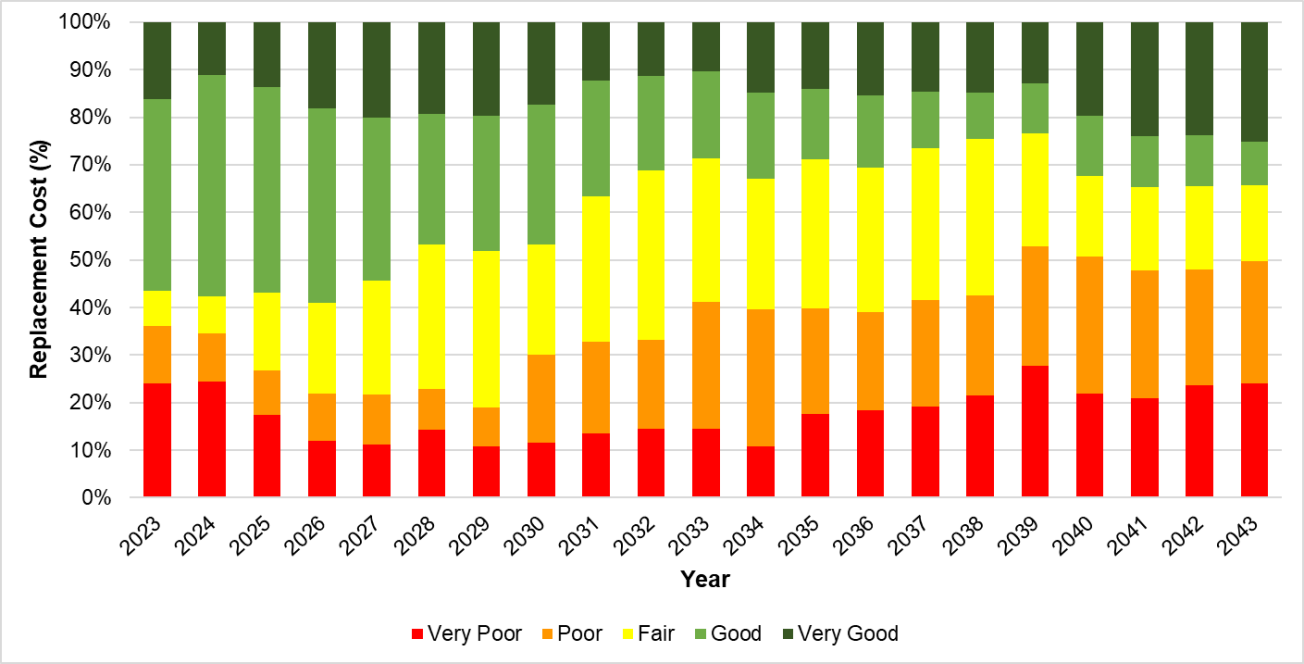


Figure 7-6. Facilities Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

7.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 7-7 and Table 7-6. Figure 7-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 6-6.

The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 30% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there an annual gap of $173,000 to maintain the current performance (condition) of assets. There also a gap of $449,000 to optimize performance of assets based on lifecycle strategies. The City plans to further assess and prioritize the infrastructure needs determined by the building condition assessment to determine how to close the gap for facilities.

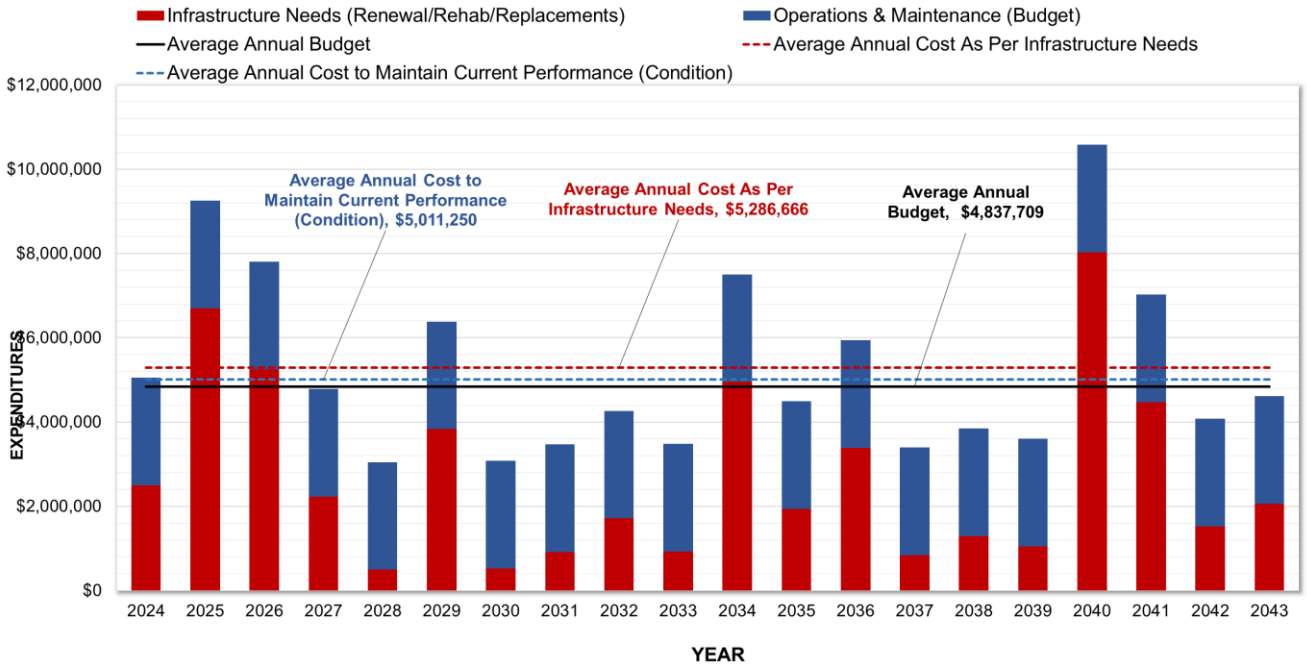


Figure 7-7. Facilities Scenario Comparison

Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals work puts the City of Port Colborne at risk to not achieve intergenerational equality. If the City continues to push out necessary renewals, future generations will be unable to maintain the level of service the customers currently enjoy and burden future generations with significant costs.

Continued deferrals of projects will also lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

7.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 7-6.

Table 7-6. Facilities Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$2,554,530	$2,554,530	$2,554,530
Renewal, Rehabilitation, & Replacement	$2,283,179	$2,456,720	$2,732,136
Total Expenditure	**$4,837,709**	**$5,011,250**	**$5,286,666**
Average Annual Funding Gap		**$173,540**	**$448,957**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more analysis is completed on the building condition assessments.

7.5 Data Confidence and Improvement Plan

Table 7-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 7-7. Data Confidence - Facilities

Data Source	Data Confidence
2022-2023 Building Condition Assessments	Good

7.5.1 Recommendations for Improvements

The building condition assessments completed over the 2022-2023 period have been used this AMP. Many of the building condition assessments that were provided for this AMP were still in draft form and had not yet been fully reviewed and analyzed for quality by the City. It is recommended that this information is integrated into the City's systems to continue to be reviewed and the information be maintained as recommendations, changes to assets within these facilities are completed. It is also recommended that the City, as it continues to assess the results of this study, ground truth the results to ensure they are in line with staff expectations.

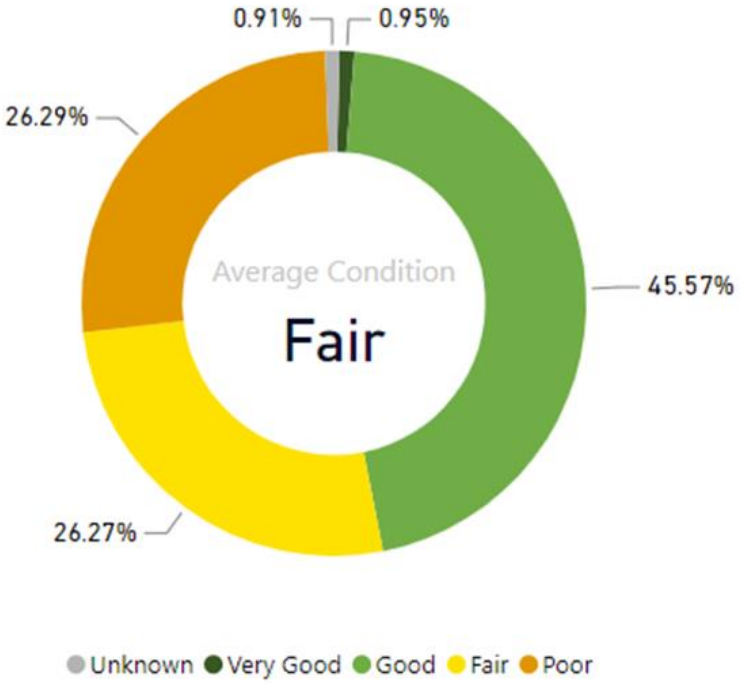
Although the information for these facilities conditions is highly reliable for the component information, the overall replacement values of the facilities was determined to be too low, so was updated for the purposes of this AMP to reflect more realistic replacement values.

8 Fleet and Equipment

Replacement Value

$10,517,808 M

Overall Average Asset Condition



Quick Facts

Fleet and Equipment has

- 46 Fleet including heavy duty, medium duty and passenger vehicles
- 69 Equipment assets including small equipment, trailers, medium and heavy duty equipment.

8 Fleet and Equipment

Fleet and Equipment assets allows staff to deliver municipal services to residents. Fleet and Equipment assets supports several services areas in the City of Port Colborne including Roads, Parks, Water and Wastewater, Marina, Bylaw, Community Service and Building Maintenance. The City manages 46 Fleet assets and 69 different equipment assets. These assets allow staff to provide services in a safe and efficient manner throughout the City.

8.1 State of the Infrastructure

8.1.1 Asset Inventory and Valuation

Fleet and Equipment has a total estimated replacement value of $10.5 million. Table 8-1 below details the inventory and the current estimated replacement value by asset type.

Table 8-1. Asset Inventory and Current Replacement Value – Fleet and Equipment

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Equipment			
Heavy Duty	8	Units	$2,130,656
Medium Duty	11	Units	$1,002,505
Small Equipment	16	Units	$669,111
Trailer	15	Units	$265,265
Fleet			
Heavy Duty	8	Units	$3,159,500
Medium Duty	8	Units	$773,750
Passenger Vehicles	30	Units	$2,004,640
Total			**$10,518,808**

The fleet asset inventory was developed based on the City's asset listing maintained in a spreadsheet to plan for capital replacements. It is recommended that the City identify the "source of truth" for these assets for the inventory and ensure that there is someone assigned to maintain this information on an on-going basis.

8.1.2 Asset Condition

Knowing the condition of assets is an important part of asset management, as it helps us determine when assets might need to be replaced and supports short- and long-term planning. Condition was assigned to Fleet assets through staff inspections and Equipment assets using age. It is recommended that staff define the methodology for how condition is assigned to ensure that this methodology is applied using the same logic in future asset planning initiatives. A description of the condition ratings scale can be found in Table 8-2.

Table 8-2. Condition Rating Scale – Fleet and Equipment

Condition	Age/ESL	Staff Condition Score
Very Good	>80% life remaining	1
Good	60-80% life remaining	2
Fair	40-60% life remaining	3
Poor	20-40% life remaining	4
Very Poor	0-20% life remaining	5
Unknown		

The overall condition distribution for Fleet and Equipment assets by replacement value is shown below in Figure 8-1 and Figure 8-2.

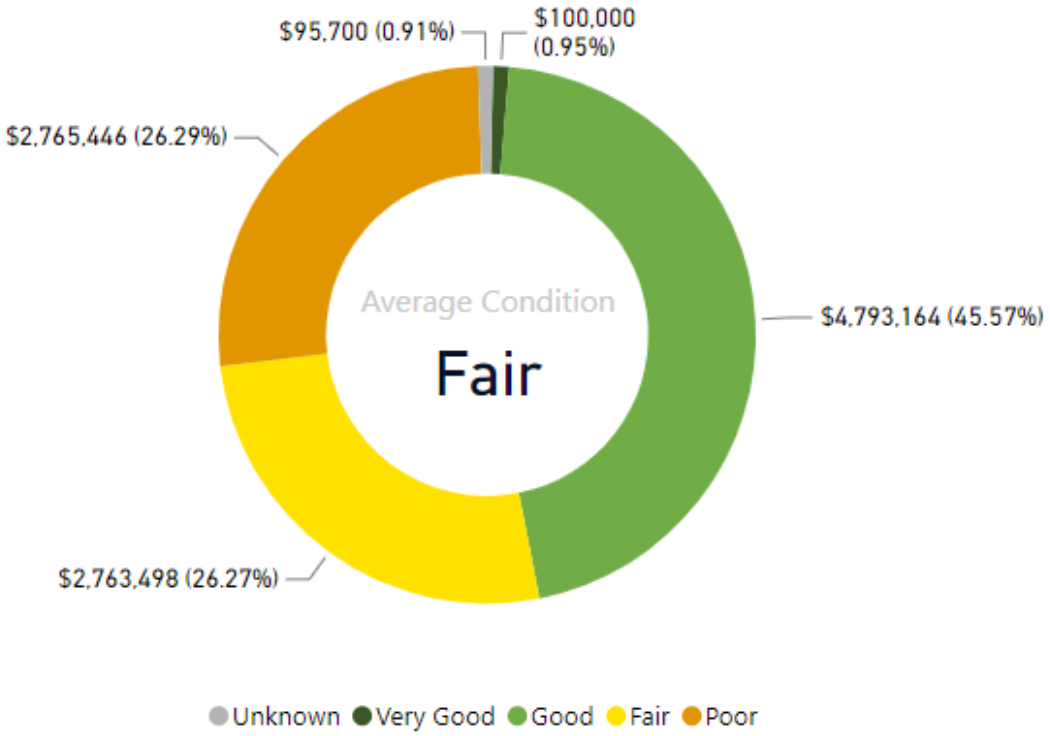


Figure 8-1. Asset Condition by Replacement Value – Fleet and Equipment

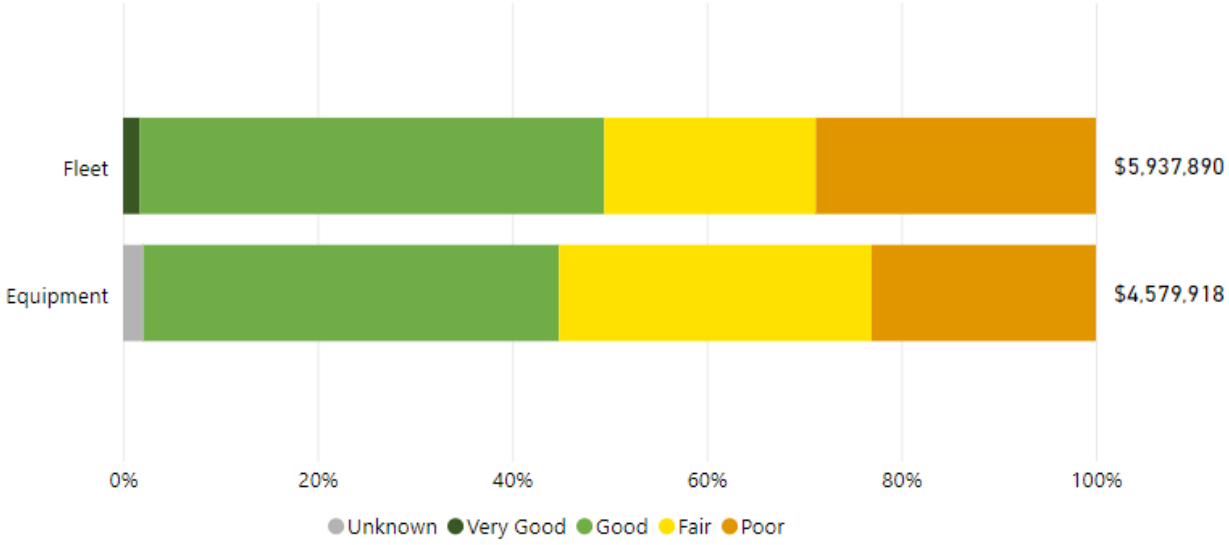


Figure 8-2. Asset Type Condition by Replacement Value - Fleet and Equipment

The average condition of Fleet and Equipment assets is **fair**. Over 71% of all assets are in fair or better condition. Figure 8-2 shows the asset type condition distribution for each asset group. There is a small amount of assets in each group in poor condition. These assets are nearing their end of life, with 20% - 40% remaining life.

8.1.3 Asset Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Fleet and Equipment assets. Figure 8-3 shows the average age and average estimated service life for Fleet and Equipment Assets.

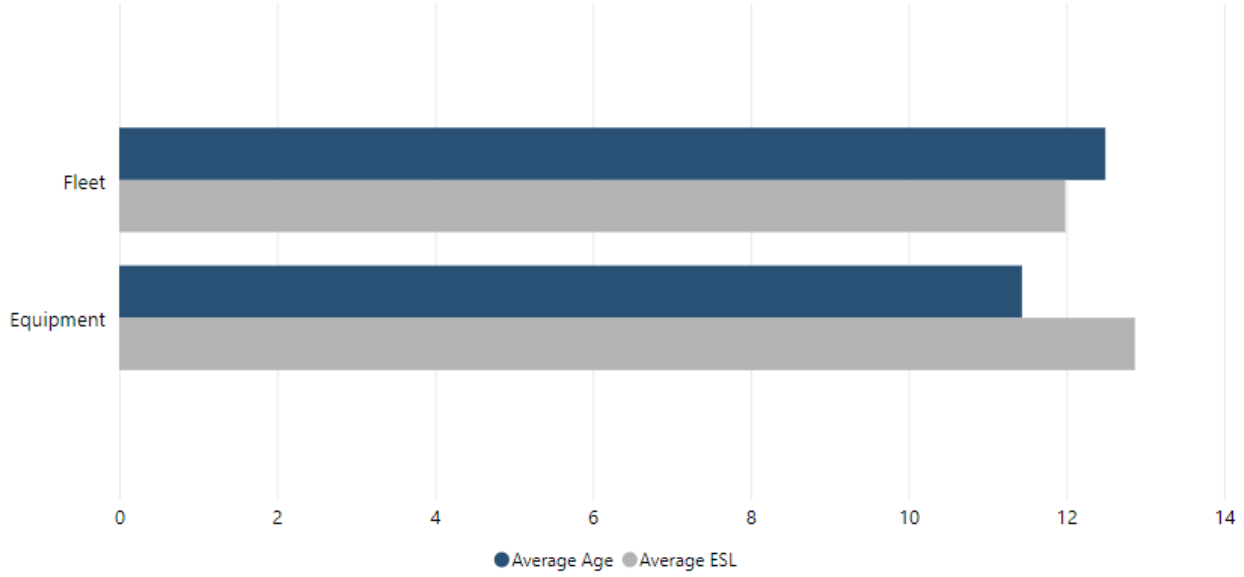


Figure 8-3. Average Age and Average Estimated Service Life – Fleet and Equipment

The average age of Fleet assets is slightly above the average estimated service life. Through regular inspections, the City has assessed the condition of Fleet assets, and over 71% of these assets are in fair or better condition, showing us that these assets are continuing to provide reliable service past their estimated service lives. Equipment assets average age is below its average estimated service life.

8.2 Levels of Service

Service Statement: Fleet and Equipment help the City keep operations running smoothly and efficiently to provide services to the community.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 8-3 and Table 8-4 provide a summary of the community and technical levels of service metrics for the City's Fleet and Equipment. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Fleet and Equipment assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 8-3. Community Level of Service– Fleet and Equipment

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	3%

Table 8-4. Technical Level of Service– Fleet and Equipment

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Sustainable	# of Electric Vehicles	0
Sustainable	Annual GHG emissions	429 tonnes $C0^2$ equivalent
Sustainable	# of public charging stations	0
Cost Efficient	Percent of value of fleet assets in very poor condition	0%
Accessible & Reliable	Percent of dedicated fleet vehicles beyond estimated useful life	28.36%

8.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within Fleet and Equipment.

8.3.1 Lifecycle Activities

Lifecycle activities Fleet and Equipment assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset. These activities ensure that Fleet and Equipment assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 8-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 8-5. Asset Management Practices and Associated Frequency – Fleet and Equipment

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Condition assessments, feasibility studies, management plans	• Annually
• MTO inspections	• Annually
• Planning, collision review committee	• As required, quarterly review
Operations & Maintenance Activities	
• Seasonal inspections on seasonal equipment	• Seasonal
• Third party inspections (crane/hoists, compressor)	• As required
• In-house inspections	• As required
• Reactive maintenance and repairs	• As required
• Daily inspections	• Daily
• Health and Safety inspections	• Monthly
• Preventative maintenance (cranes/hoists, compressors)	• Annually
• Preventative maintenance schedule by class of vehicle (in-house and external)	• On-going
• Reactive maintenance for Fleet (damage, accidents, breakdowns)	• Daily
• Spraying of vehicles	• Annually
• Vehicle refurbishments	• As identified
Renewal/Replacement Activities	

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
• Renewal activities for equipment	• As required
• Equipment replacement	• On-going
• Fleet replacement	• As identified; End of life
Disposal Activities	
• Equipment Disposal	• On-going, as needed
• Fleet - sell/auction	• As identified
• Fleet - keep for spare parts	• As required
• Fleet - sell to department	• As required
• Fleet - scrap	• As identified
Service Improvement & Growth Activities	
• Fleet additions/upgrades requiring new equipment	• As identified
• New Assets	• As identified
• Vehicle upgrade	• As identified

8.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 8.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 8.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

8.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement for Fleet and Equipment is $990,000. The condition distribution for the anticipated budget scenario can be seen in Figure 8-4. The condition distribution shows that while assets in good to very good condition increase slightly, assets in poor to very poor condition increase drastically throughout the forecast period.

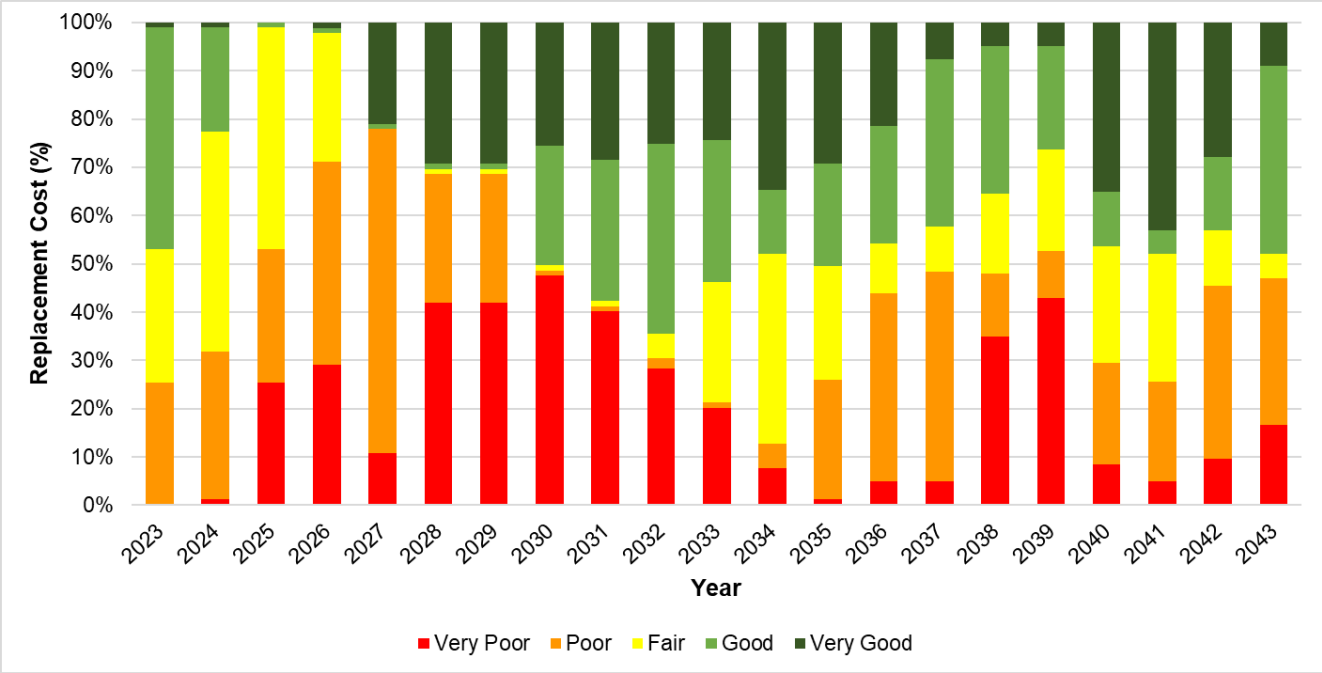


Figure 8-4. Fleet and Equipment Performance Forecast with Current Funding

8.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Fleet and Equipment asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $890,000 is needed to maintain the current performance (condition/level of service) for Fleet and Equipment assets. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 8-5. In this scenario assets in good to very good condition increases from just under 50% to over 60%, while assets in very poor condition also increases quite significantly going from almost none to over 20% at the end of the forecast period.

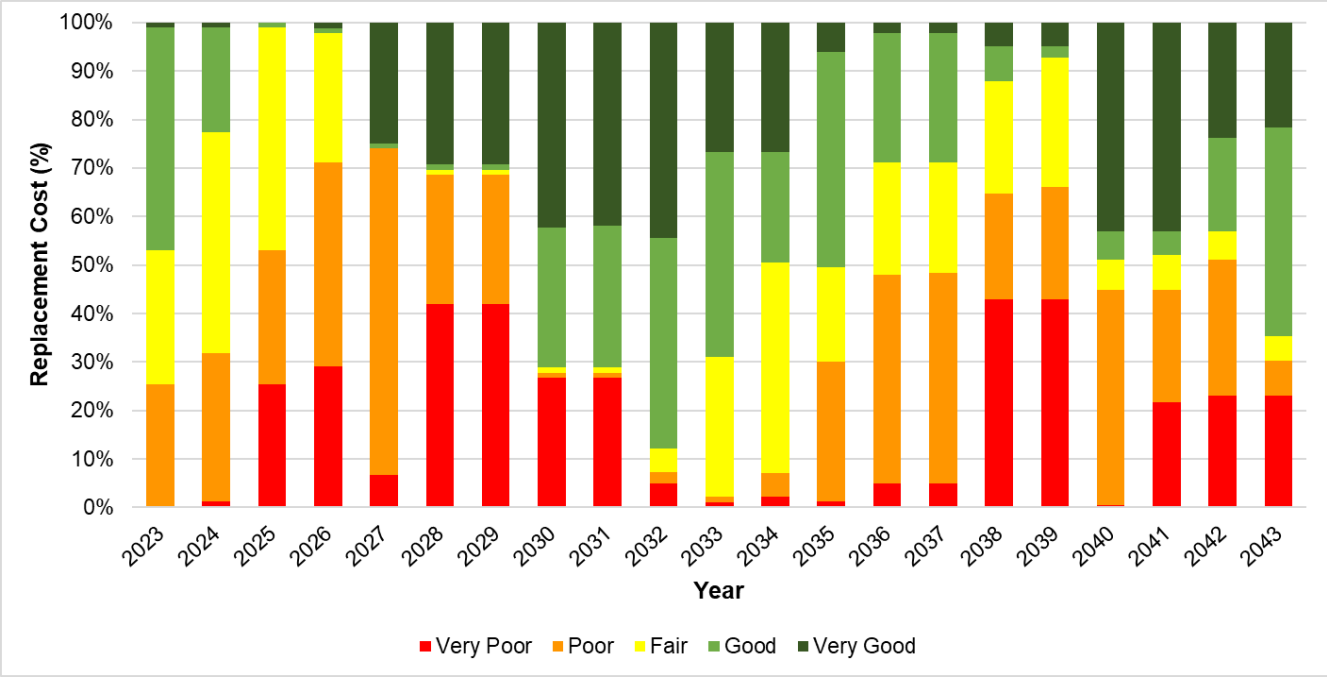


Figure 8-5. Fleet and Equipment Performance Forecast to Maintain Levels of Service

8.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $890,000 is required for this scenario. There is no funding gap for the infrastructure needs following lifecycle activities the anticipated budget allocation in Fleet and Equipment. The condition distribution for Fleet and Equipment assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 8-6.

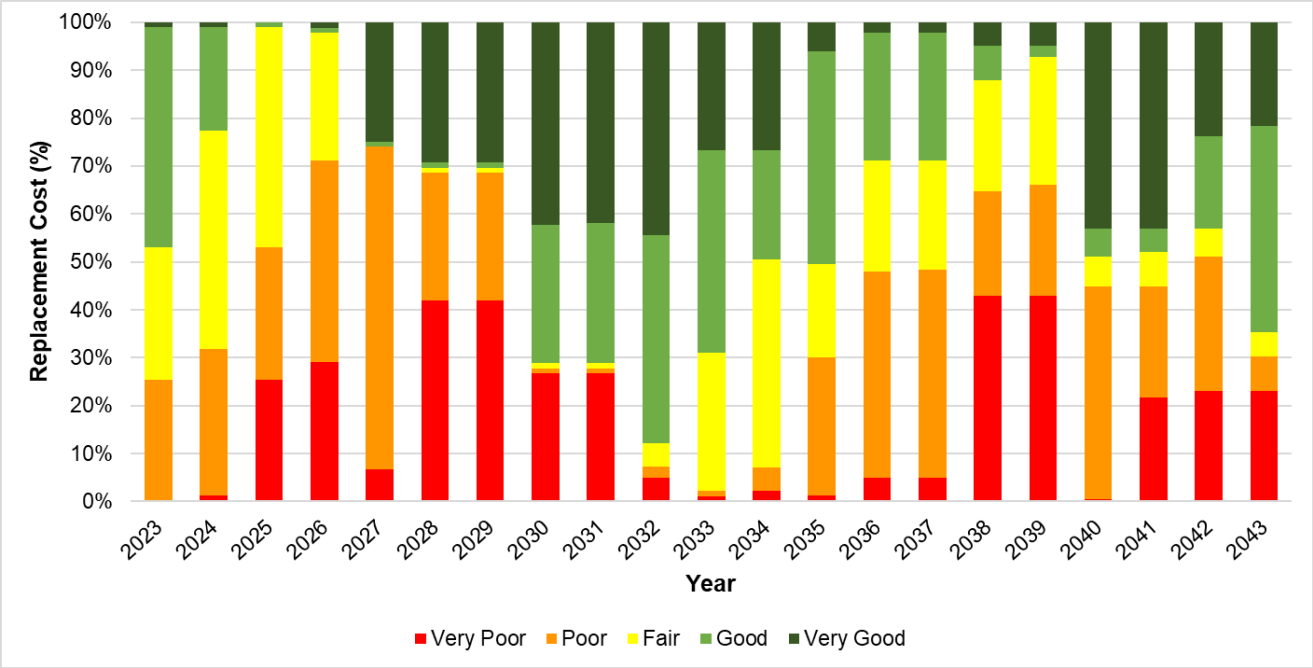


Figure 8-6. Fleet and Equipment Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

8.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 8-7 and Table 8-6. Figure 8-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 8-6.

The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies. If current anticipated investments in Fleet and Equipment are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

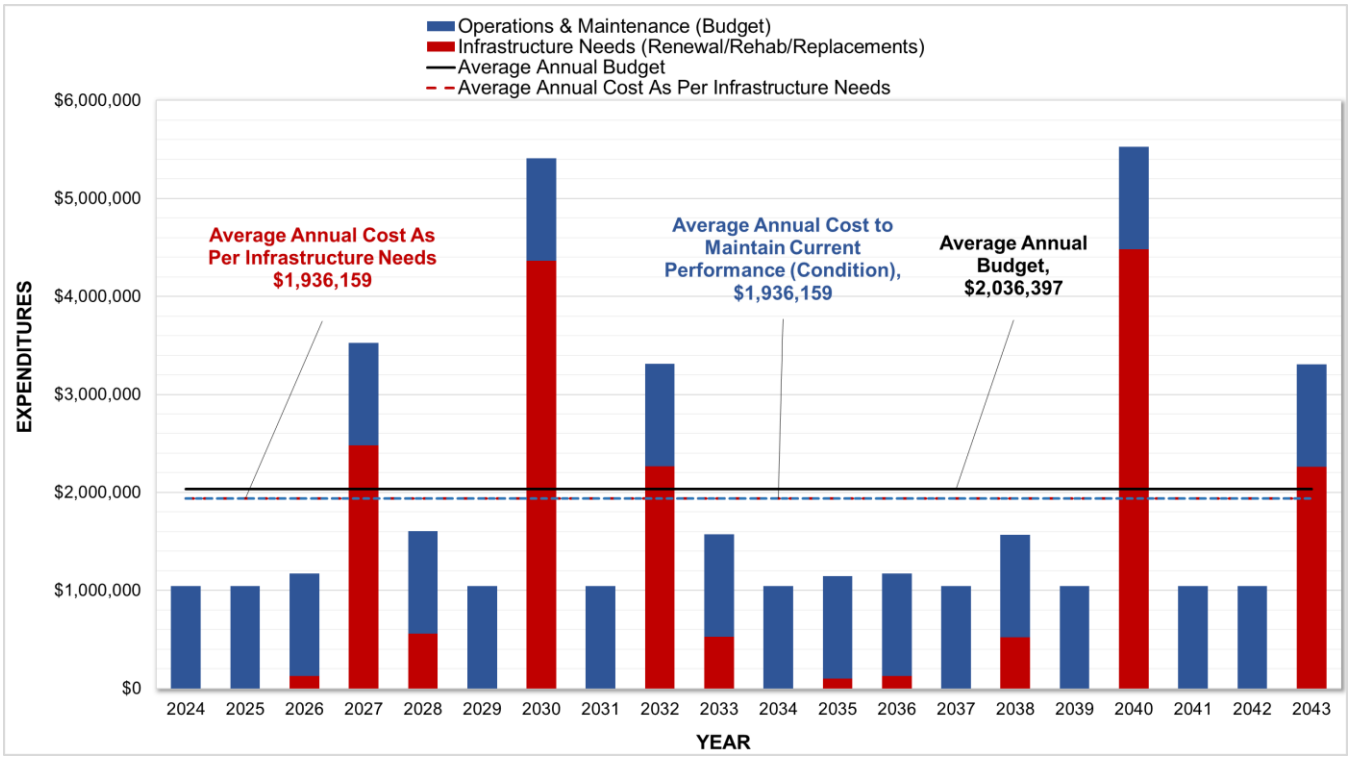


Figure 8-7. Fleet and Equipment Scenario Comparison

8.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 8-6.

Table 8-6. Fleet and Equipment Network Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$1,045,577	$1,045,577	$1,045,577
Renewal, Rehabilitation, & Replacement	$990,820	$890,582	$890,582
Total Expenditure	**$2,036,396.70**	**$1,936,158.50**	**$1,936,158.50**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

8.5 Data Confidence and Improvement Plan

Table 8-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

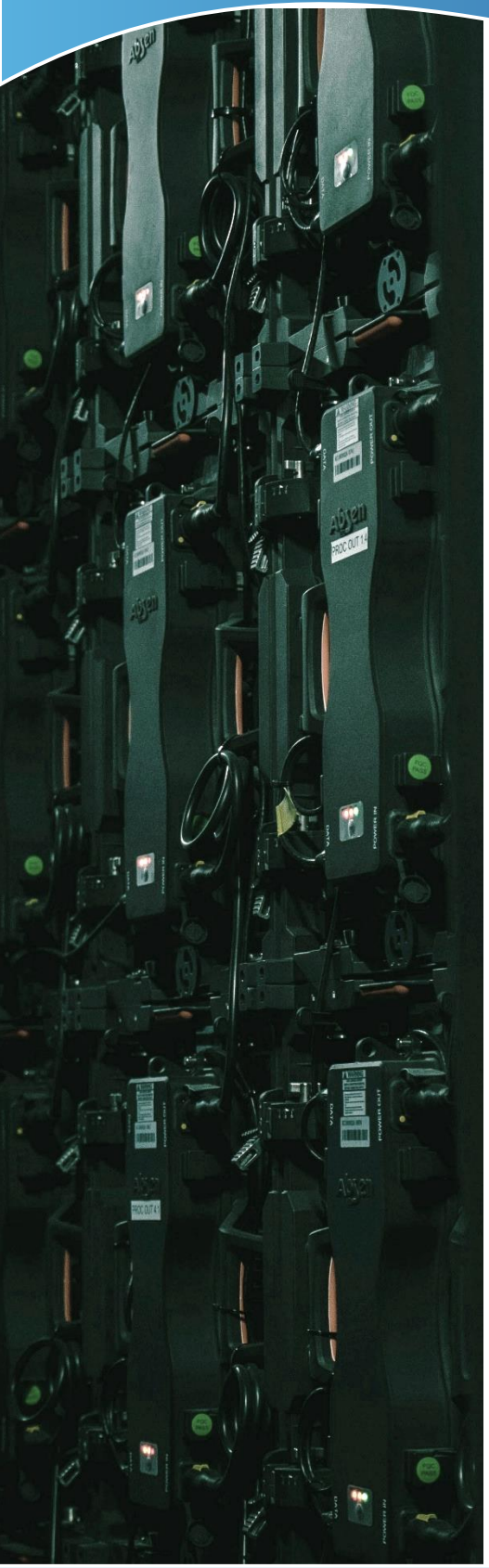
Table 8-7. Data Confidence – Fleet and Equipment

Data Source	Data Confidence
Spreadsheet	Very Good

8.5.1 Recommendations for Improvements

Only minor gaps in the fleet data were found, which it is recommended the City update. It is also recommended that the City, as part of data management strategy identify the “source of truth” for fleet and equipment assets and identify responsible parties for the maintenance of this information.

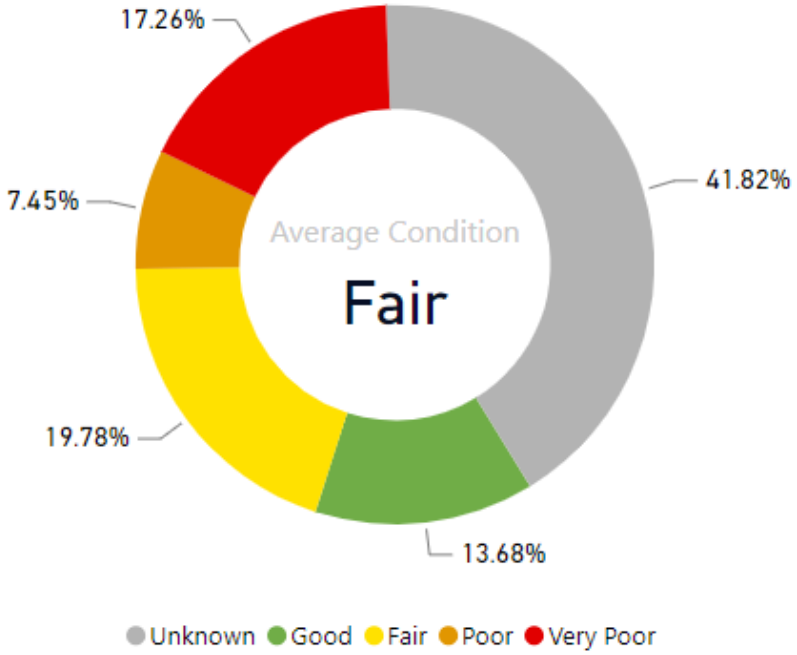
9 Information Technology



Replacement Value

$1,480,655 M

Overall Average Asset Condition



Quick Facts

Information Technology has

- Hardware and software assets supporting various service delivery groups throughout the City

9 Information Technology

Information Technology assets supports most other asset categories in this plan. The Hardware and Software assets are used by other service groups to help deliver services throughout the City. Managing these assets helps ensure that reliable service is provided for residents.

9.1 State of the Infrastructure

9.1.1 Asset Inventory and Valuation

Information Technology includes a variety of hardware and software with a total estimated replacement value of $1.4 million. Table 9-1 below details the inventory and the current estimated replacement value by asset type.

Table 9-1. Asset Inventory and Current Replacement Value – Information Technology

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Hardware			
Access Control Systems	25	Units	$9,833
Mid-range Servers	9	Units	$147,049
Routers and Switches	44	Units	$41,956
Security Cameras	87	Units	$107,803
Smartphones	99	Units	$114,939
Standard Computers	310	Units	$589,000
Televisions	31	Units	$37,200
Uninterruptable Power Supply	4	Units	$10,406
Software			
Wireless Access Points	48	Units	$19,571
On Premise	12	Units	$95,801
SaaS	26	Units	$307,097
Total			**$1,480,655**

City staff worked to compile an inventory of assets for the purposes of this AMP. It is recommended that the City continue to improve this information and fill gaps where identified to improve the

forecasting for this asset class. IT assets support the organization through a variety of services and represents an important asset category. The inventory developed for IT should be maintained on a regular basis for budgeting and reporting purposes.

9.1.2 Asset Condition

Condition was assigned to Information Technology assets using age/estimated service life. A description of the condition rating scale is shown in Table 9-2.

Table 9-2. Condition Rating Scale – Information Technology

Condition	Age/ESL
Very Good	>80% life remaining
Good	60-80% life remaining
Fair	40-60% life remaining
Poor	20-40% life remaining
Very Poor	0-20% life remaining
Unknown	

The overall condition distribution for Information Technology assets by replacement value is shown below in Figure 9-1 and Figure 9-2. Many of the install dates for IT assets were unknown, and therefore could not be assessed for condition. Many of these assets are replaced as needed through operating expenses but would be valuable information to maintain going forward.

Software is a unique asset across the City and represents a large operating expense to the City. It is recommended the City determine a strategy for planning for software as it is a continually evolving asset type as cloud, or software-as-a-service becomes more widely used in the organization.

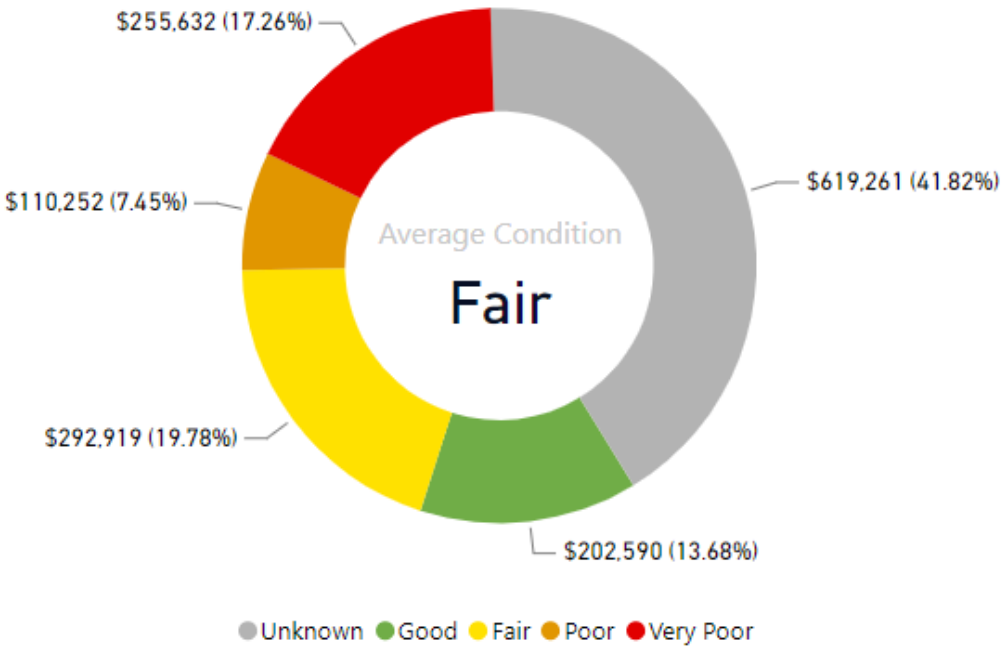


Figure 9-1. Asset Condition by Replacement Value – Information Technology

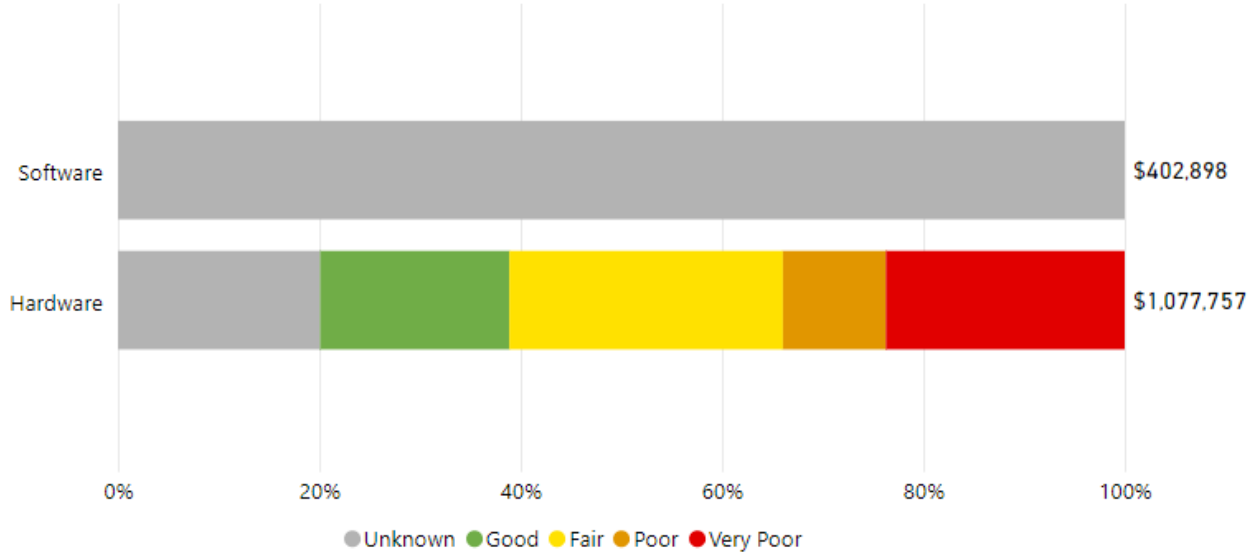


Figure 9-2. Asset Type Condition by Replacement Value – Information Technology

The average condition for Information Technology assets is **fair**, with over 33% of assets are in fair or better condition. Figure 9-2 shows that condition for all Software assets is unknown, accounting for 41.82% of the total condition distribution.

9.1.3 Asset Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Information Technology assets. Figure 9-3 shows the average age versus the average estimated service life for hardware assets in the City of Port Colborne.

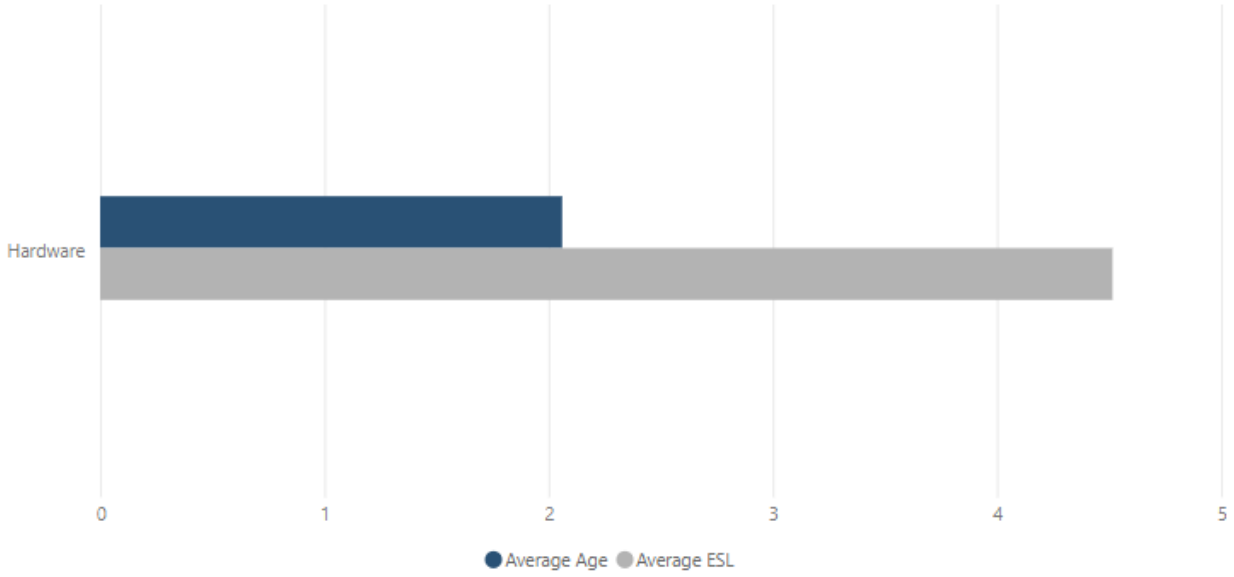


Figure 9-3. Average Age and Average Estimated Service Life – Information Technology

The average age of Hardware assets is below the average estimated service life. In general, these assets can continue to provide services to the City. The graph includes only information where age is currently known for assets. Currently age is unknown for access control systems, routers and switches, security cameras, televisions, wireless access points, and software.

9.2 Levels of Service

Service Statement: Information Technology plays a crucial role in modernizing municipal operations and improving the deliver of services to residents through data management, digital infrastructure, online services, security, and communication.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 9-3 and Table 9-4 provide a summary of the community and technical levels of service metrics for the City's Information Technology assets. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Information Technology assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 9-3. Community Level of Service– Information Technology

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	4%

Table 9-4. Technical Level of Service– Information Technology

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percentage of total replacement cost for IT assets past their estimated useful life	4.95%
Accessible & Reliable	Percentage of replacement value of IT assets above very poor	82.74%
Accessible & Reliable	IT Staff Size	4

9.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within Information Technology.

9.3.1 Lifecycle Activities

Lifecycle activities for Information Technology assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that Information Technology assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of infrastructure assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 9-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 9-5. Asset Management Practices and Associated Frequency – Information Technology

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Monitor recalls and updates (patching and security) on assets to ensure proper functionality, testing	• On-going
• Hardware - capacity planning, contingency and redundancy planning, master plan, other technical studies	• On-going
Operations & Maintenance Activities	
• Security risk reviews and updates	• On-going
• Support contracts and maintenance	• On-going
• Purchase of small equipment and materials	• As identified
• Hardware repairs	• As needed
• Software licensing, agreement renewals	• As needed
• Refurbishment/major upgrade	• As identified
Renewal/Replacement Activities	
• Replacement of hardware and software	• Asset end of life
Disposal Activities	
• Uninstall software	• As identified
Service Improvement & Growth Activities	
• New hardware assets, sites, employees	• As identified
• Updated/new software	• As identified
• New software technology for improvement	• As required

9.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 9.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 9.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

9.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement for Information Technology is $216,000. The condition distribution for the anticipated budget scenario can be seen in Figure 9-4. The overall condition of Information Technology assets increases slightly through this forecast. Assets in very good condition increases from just over 20% to over 30%, while assets in very poor condition decreases to well below 10%. If the City ensures the current anticipated investment into Information Systems is sustained, assets will see an overall increase in condition, resulting in continued quality services to residents.

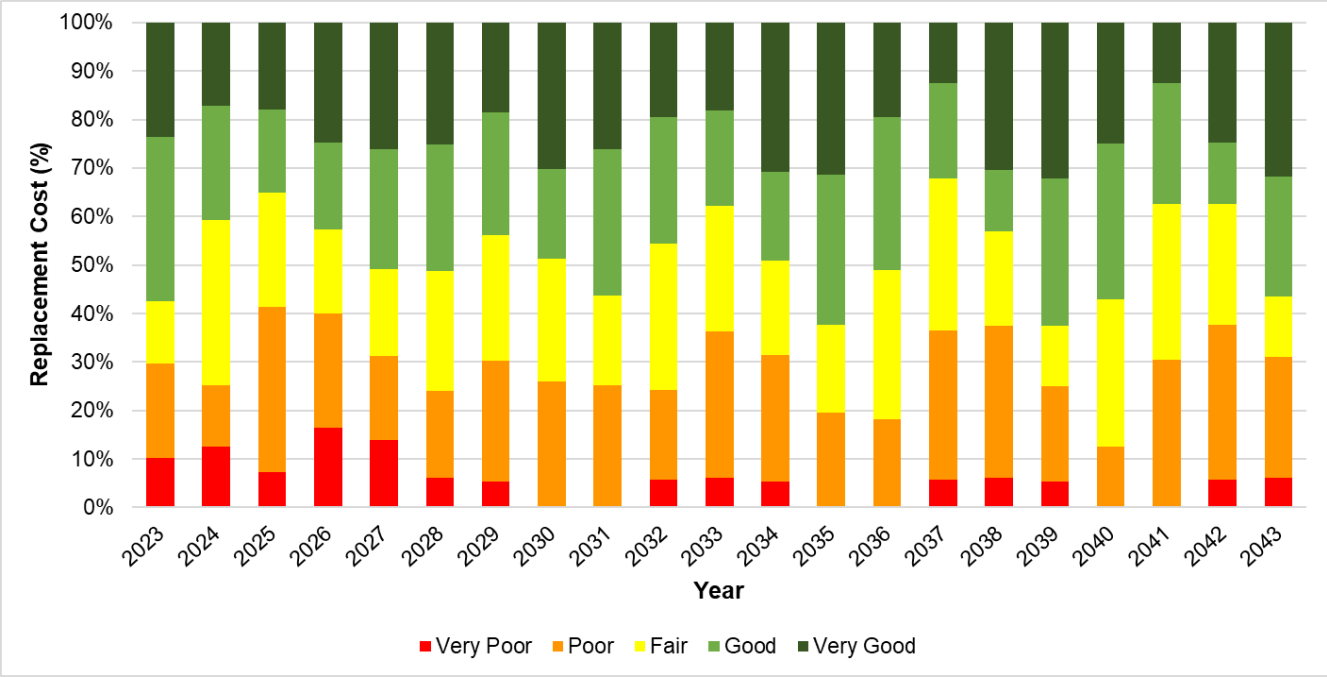


Figure 9-4. Information Technology Performance Forecast with Current Funding

9.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Information Technology asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $193,000 is needed to maintain the current performance (condition/level of service) for Information Technology assets. There is no funding gap in this scenario compared to current annual funding for Information Systems. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 9-5, showing overall asset condition stays relatively similar throughout the forecast.

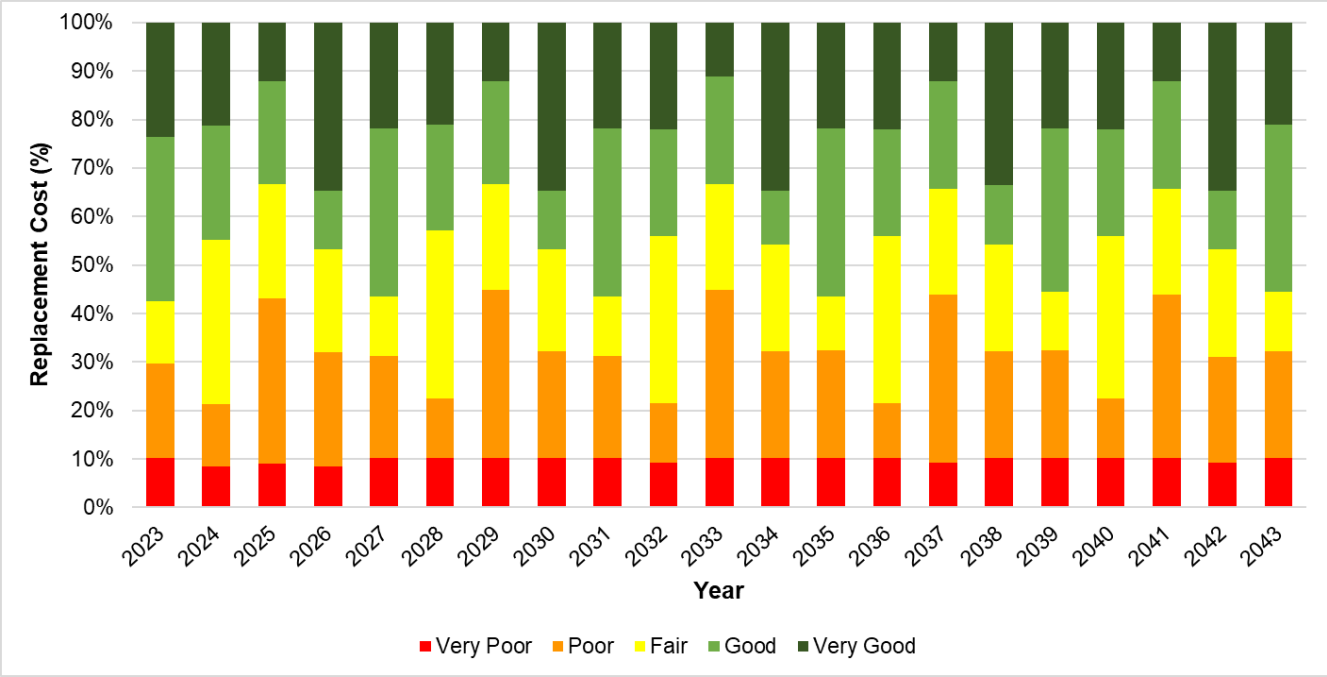


Figure 9-5. Information Technology Performance Forecast to Maintain Levels of Service

9.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $208,000 is required for this scenario. There is no funding gap compared to the anticipated budget allocation in Information Technology. The condition distribution for Information Technology assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 9-6. Under this scenario the condition distribution stays roughly the same, with assets in generally the same overall condition at the end of the 20-year forecast period.

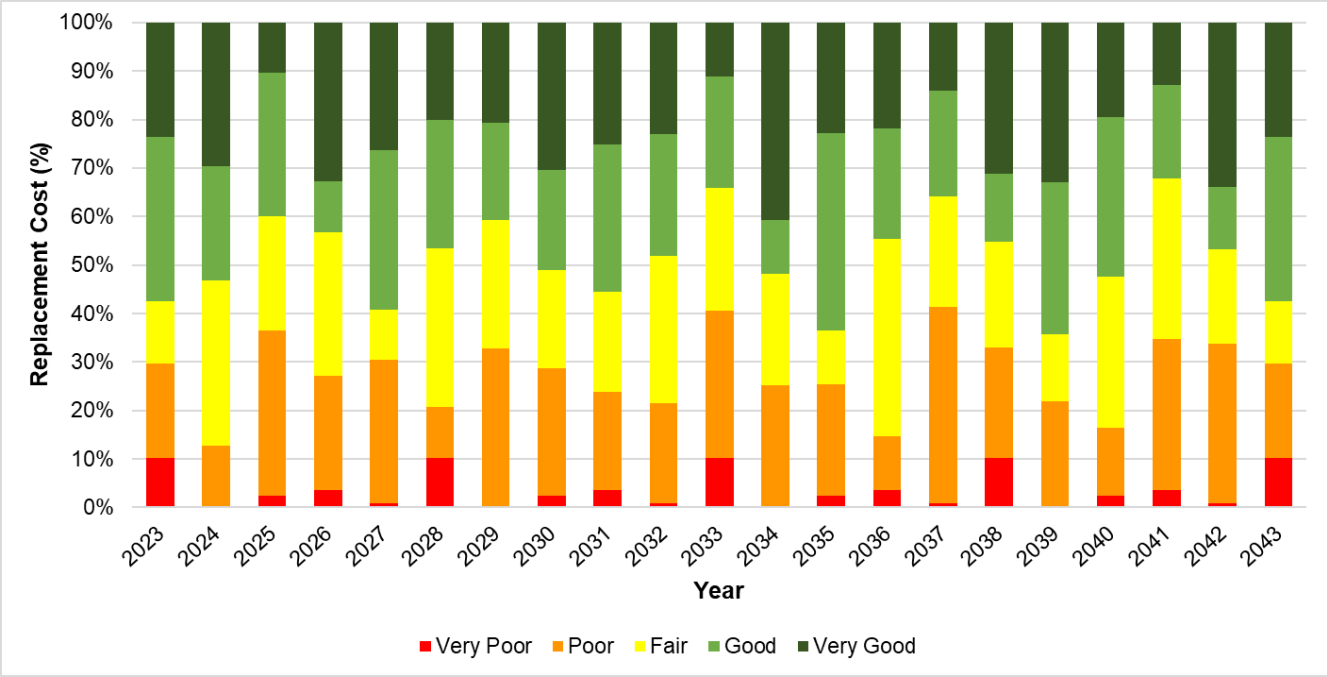


Figure 9-6. Information Technology Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

9.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 9-7 and Table 9-6. Figure 9-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The bars in this figure are colour coded by lifecycle activities. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 9-6.

The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 20% to "catch up" to required expenditures up to 2031. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies. If current anticipated investments in Information Technology are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

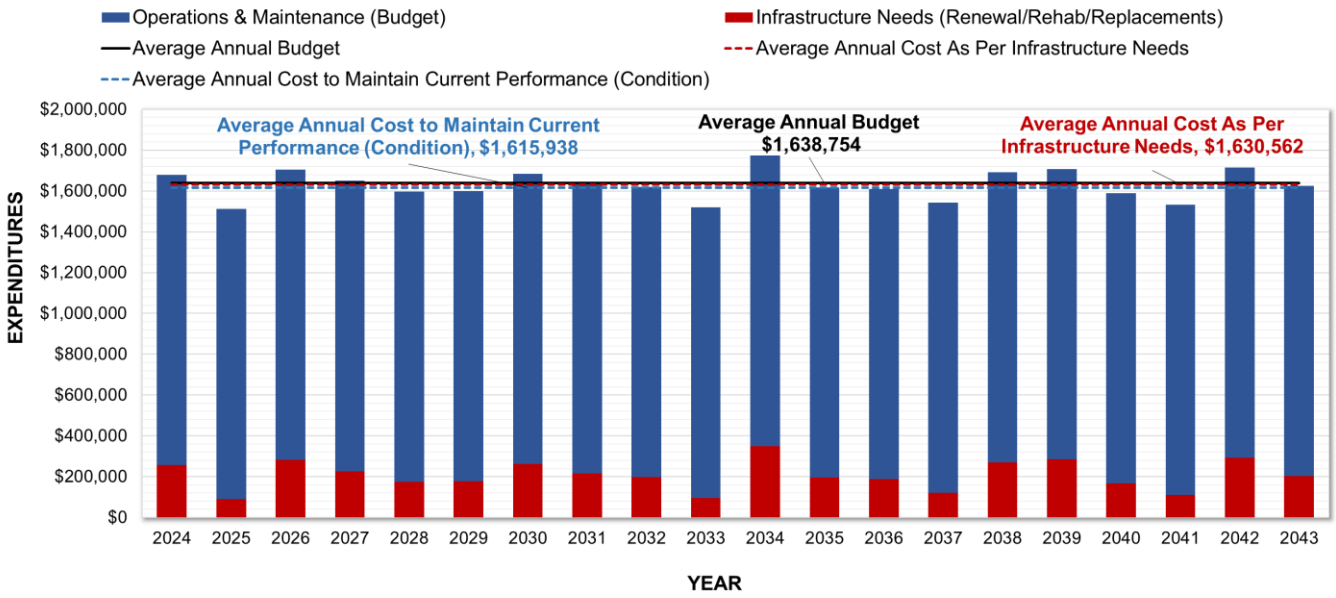


Figure 9-7. Information Technology Scenario Comparison

9.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 9-6.

Table 9-6. Information Systems Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$1,422,566	$1,422,566	$1,422,566
Renewal, Rehabilitation, & Replacement	$216,188	$193,372	$207,996
Total Expenditure	**$1,638,754**	**$1,615,938**	**$ 1,630,562**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the

infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

9.5 Data Confidence and Improvement Plan

Table 9-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 9-7. Data Confidence – Information Technology

Data Source	Data Confidence
Spreadsheet	Fair

9.5.1 Recommendations for Improvements

Staff made a concerted effort to create an inventory of all IT assets for the purposes of this AMP, which is what was used to inform all scenarios and required expenditures. It is recommended that the City continue to fill the gaps in this information and continue to maintain it. A register of current software systems for the City is also required, and represents a large portion of the expenditures required for IT.

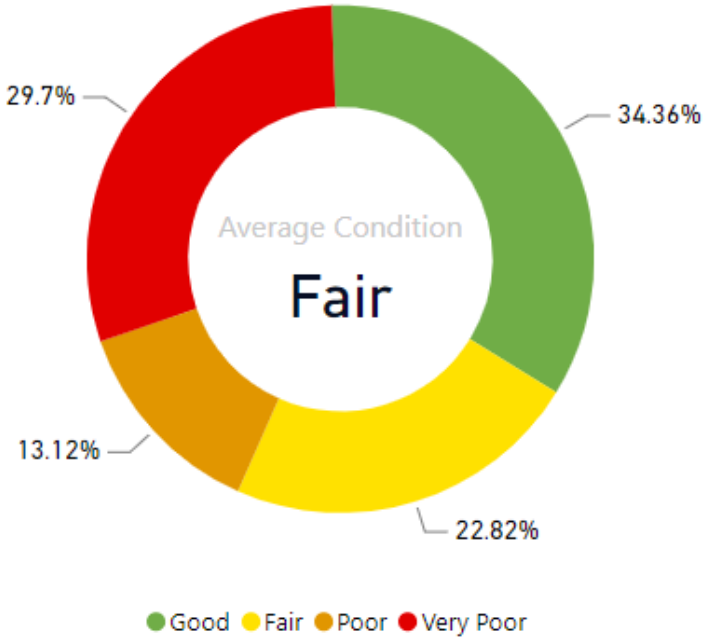
It is also recommended that the City, as part of data management strategy identify the “source of truth” for IT assets and identify responsible parties for the maintenance of this information. Ensuring accurate and comprehensive data is crucial for effective planning and resource allocation. By updating information such as installation dates, and replacement costs, they City can better assess its IT infrastructure and make informed decisions for maintenance and improvements.

10 Library

Replacement Value

$505,397

Overall Average Asset Condition



Quick Facts

The City of Port Colborne Library

- Serves the community by providing digital and print resources, various services and programs
- Maintains the Library Collection and Office Equipment to support service delivery

10 Library

Library services proudly serves the community in the City of Port Colborne. They strive to enrich, empower, and educate through great books, services, programs, resources and more. The library is welcoming and accessible for all residents and visitors, serving as a community hub for education, culture, and social interactions. The reliability of Library assets is vital to the delivery of services by staff. Ensuring Library assets are maintained in good condition ensures the community can continue to enjoy all the services the Library has to offer.

10.1State of the Infrastructure

10.1.1 Asset Inventory and Valuation

The Library includes library equipment and office equipment with a total estimated replacement value of $505 thousand. Table 10-1 below details the inventory and the current estimated replacement value by asset type.

Table 10-1. Asset Inventory and Current Replacement Value - Library

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Library Collection	7	Pool[2]	$294,189
Office Equipment	47	Units	$211,209
Total			**$505,397**

The library asset inventory was derived based on the Tangible Capital Asset inventory for the library based on 2022 information. It is recommended that this inventory be updated on a regular basis and an asset hierarchy be developed and used going forward for more accurate forecasting of library assets.

10.1.2 Asset Condition

Asset condition was assigned to Library assets using age/estimated service life. A description of the condition rating scale is shown in Table 10-2.

[2] Pool represents a collection of assets represented as a singular asset.

Table 10-2. Condition Rating Scale – Library

Condition	Age/ESL
Very Good	>80% life remaining
Good	60-80% life remaining
Fair	40-60% life remaining
Poor	20-40% life remaining
Very Poor	0-20% life remaining
Unknown	

The overall condition distribution for Library assets by replacement value can be seen below in Figure 10-1.

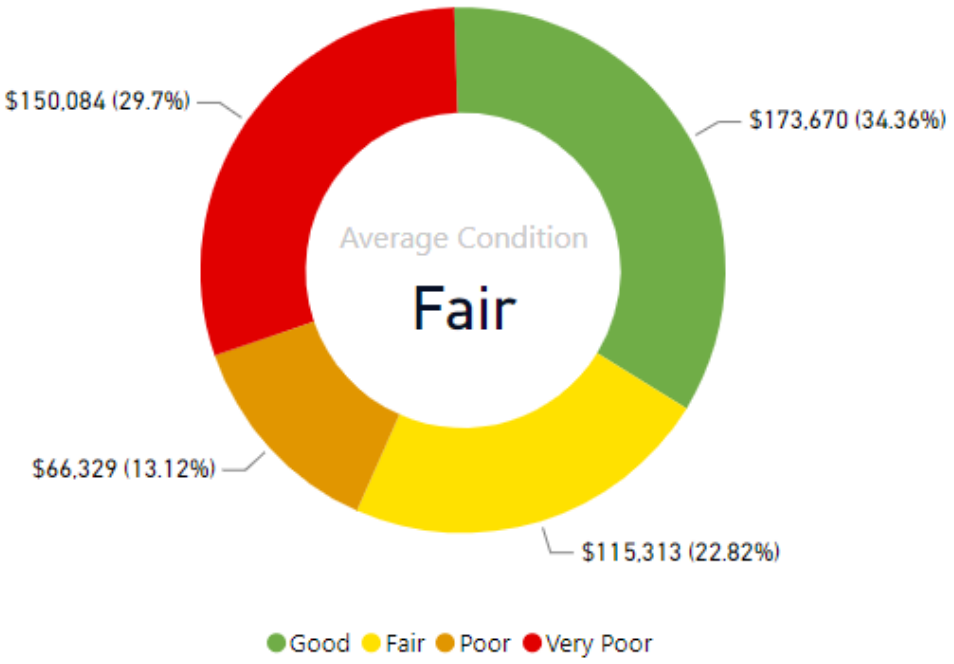


Figure 10-1. Asset Condition by Replacement Value – Library

The average condition for Library assets is **fair**, with over 57% of assets in fair or better condition. The condition profiles for individual asset types can be seen in Figure 10-2.

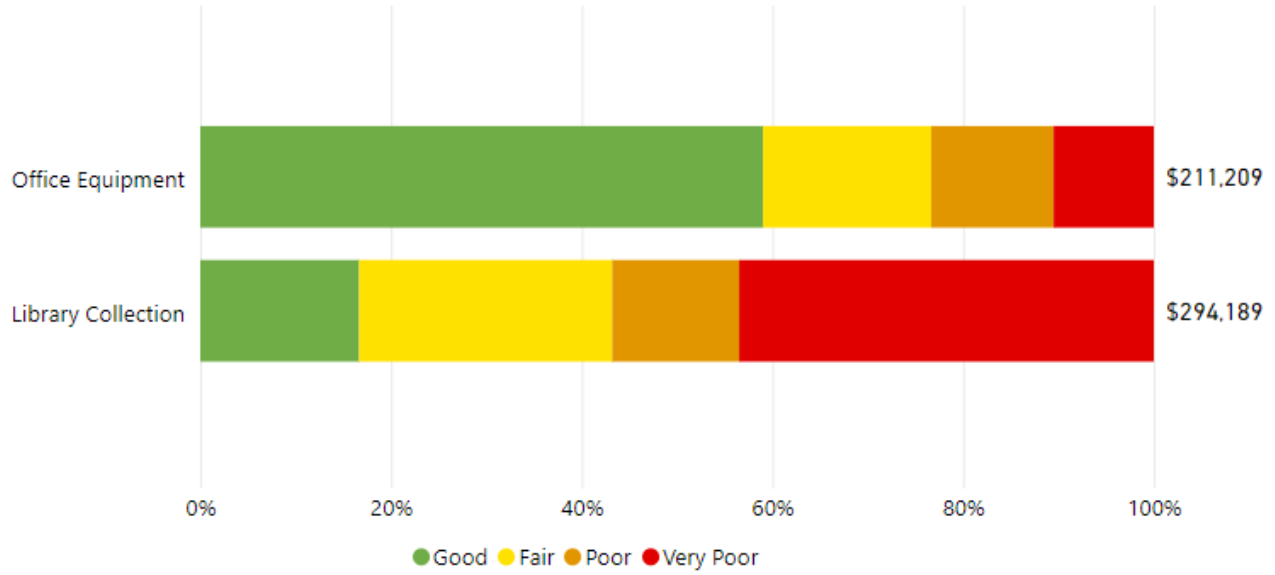


Figure 10-2. Asset Type Condition by Replacement Value - Library

Over 76% of Library Office Equipment is in fair or better condition while over half of Library Collection assets are in poor to very poor condition. Library Collections have a very short service life, which can be seen below in Section 10.1.3 Asset Age.

The library collection represents over half of the libraries assets and is continually renewed to maintain this collection. It is recommended that the City further expand on the lifecycle strategies for this collection, as well as the estimated service life to better understand the condition of these assets.

10.1.3 Asset Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Library assets. The average age of Library assets is shown below in Figure 10-3.

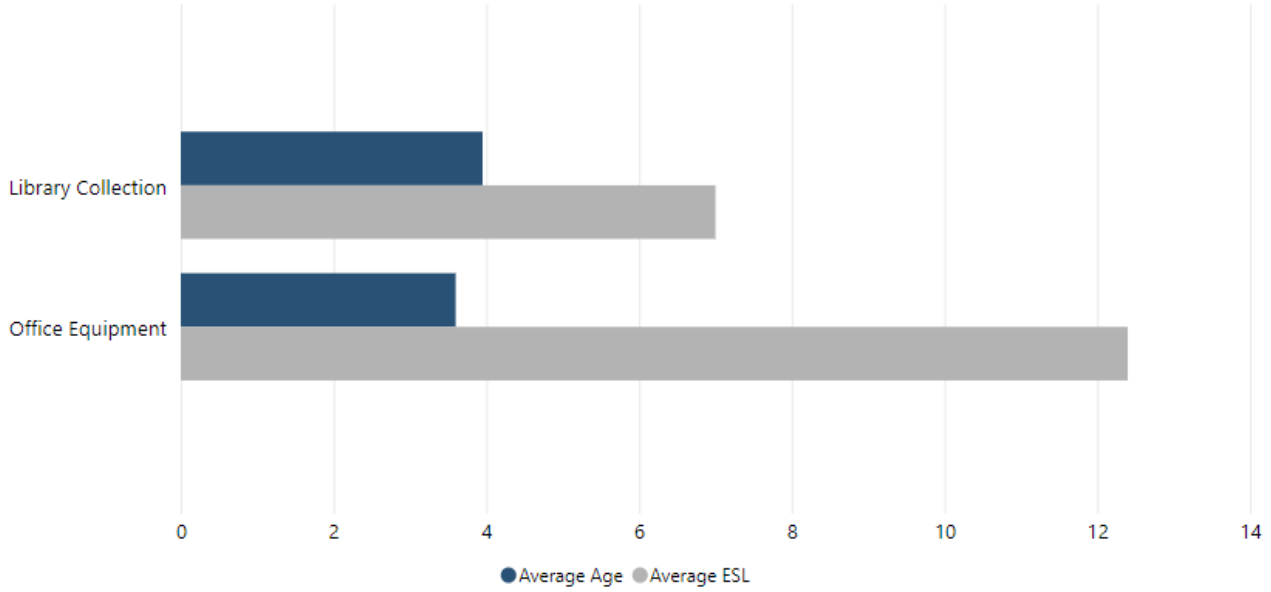


Figure 10-3. Average Age and Average Estimated Service Life – Library

The average age of Library Collection and Office Equipment assets is below the average estimated service life.

10.2 Levels of Service

Service Statement: The Library serves as a community hub that fosters learning, cultural enrichment and social interaction by providing access to information, educational support, digital services, community programs, and public services.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 10-3 and Table 10-4 provide a summary of the community and technical levels of service metrics for the City's Library. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Library assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 10-3. Community Level of Service– Library

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	2%

Table 10-4. Technical Level of Service– Library

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Accessible & Reliable	Percentage of assets in very poor condition	29.7%

10.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within the Library.

10.3.1 Lifecycle Activities

Lifecycle activities for Library assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset, from planning and design to decommissioning or repurposing. These activities ensure that Library assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 10-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 10-5. Asset Management Practices and Associated Frequency – Library

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Condition assessments	• As required
• Accessibility Plan	• As required
Operations & Maintenance Activities	
• Lighting maintenance	• As required
• Planned maintenance	•
Renewal/Replacement Activities	
• Rehabilitation	•
• Replacement	• As required – end of service life
Disposal Activities	
• Disposal of assets	• As identified
Service Improvement & Growth Activities	
• New Assets	• In-line with asset replacement
• Accessibility Improvements/Upgrades	• As identified

10.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 10.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 10.4.4 Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures in each asset category.

10.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The anticipated average annual funding for renewal, rehabilitation and replacement for the Library is $82,000. The condition distribution for the anticipated budget scenario for Library assets can be seen below in Figure 10-4. With current anticipated annual funding, condition of Library assets decreases quite drastically over the 20-year forecast period. Assets in poor to very poor condition start at just under 30%, by the end of the forecast period assets in these categories grow to just over 70%. With current anticipated funding, the overall condition of Library assets decreases, highlighting that more investments may be needed to sustain or increase the condition of these assets.

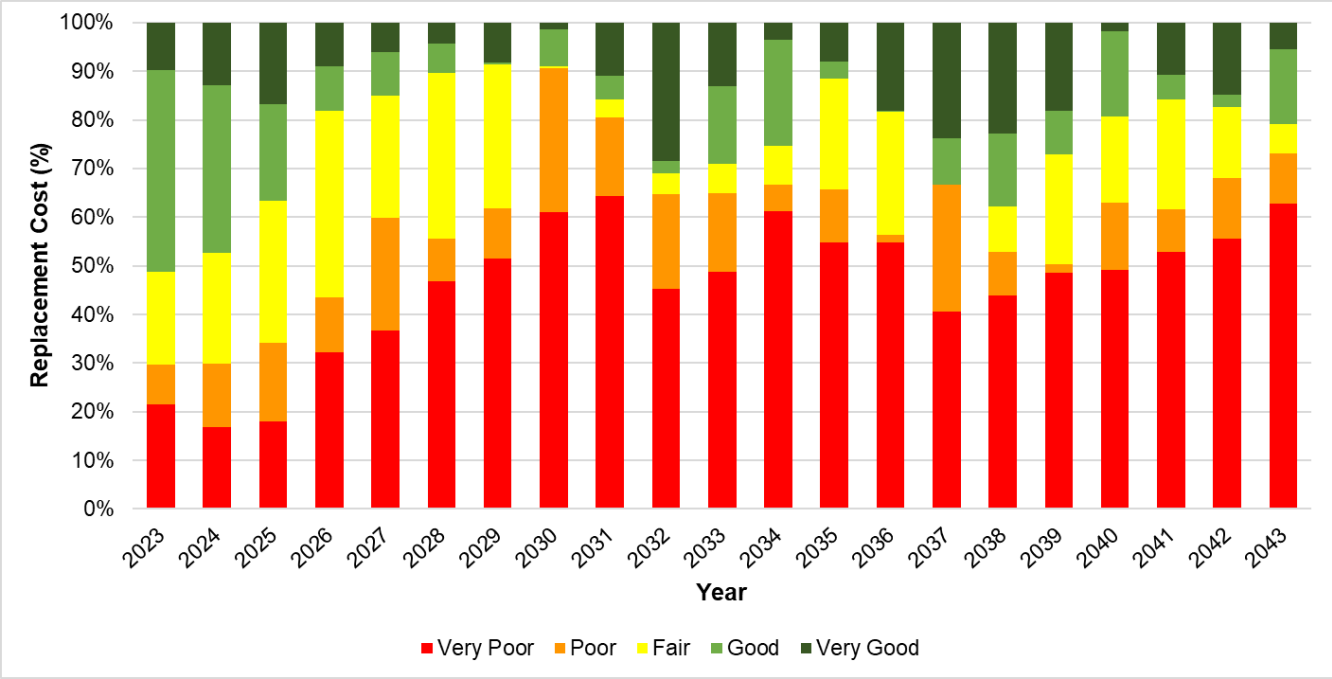


Figure 10-4. Library Performance Forecast with Current Funding

10.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Library asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $44,000 is needed to maintain the current performance (condition/level of service) for Library assets. There is no funding gap in this scenario compared to current anticipated funding. The condition distribution for this forecast scenario can be seen below in Figure 10-5. Overall asset condition decreases, with assets in poor to very poor condition growing to just under 60% throughout the 20-year forecast period.

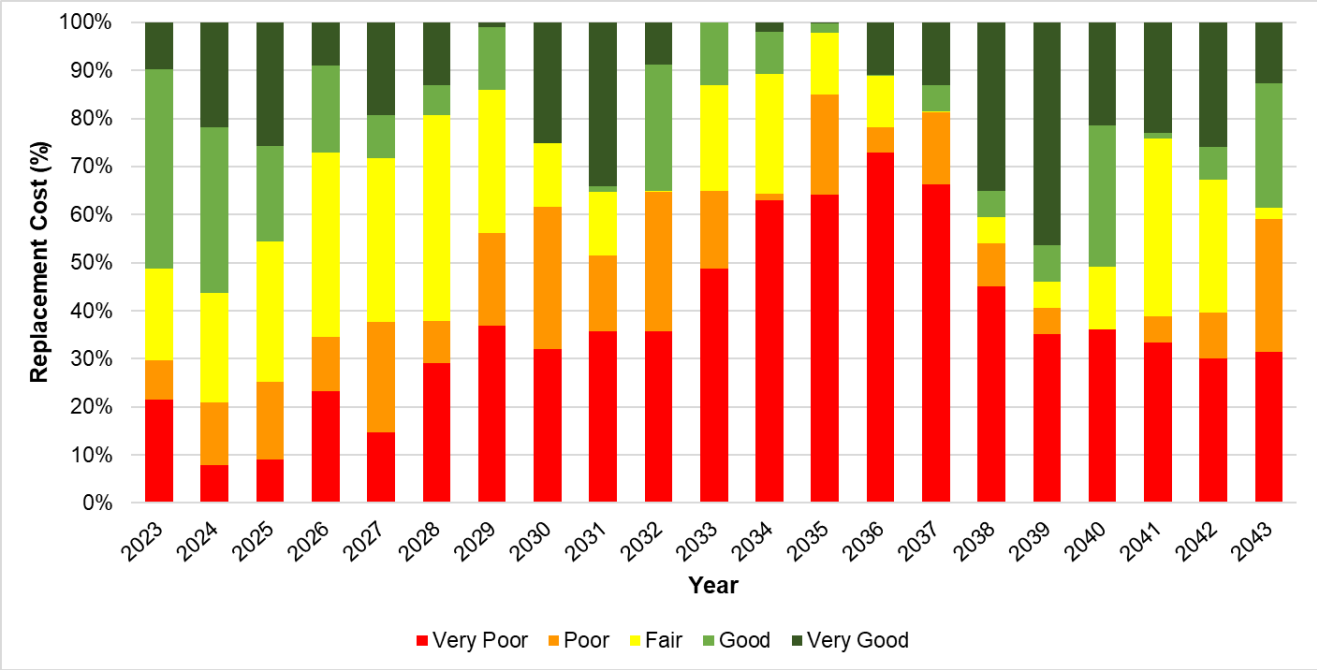


Figure 10-5. Library Performance Forecast to Maintain Levels of Service

10.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an annual budget of $67,000 is required for this scenario. There no funding gap compared to the anticipated budget allocation in Library. The condition distribution for Library assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 10-6. With this scenario, overall asset condition increases slightly.

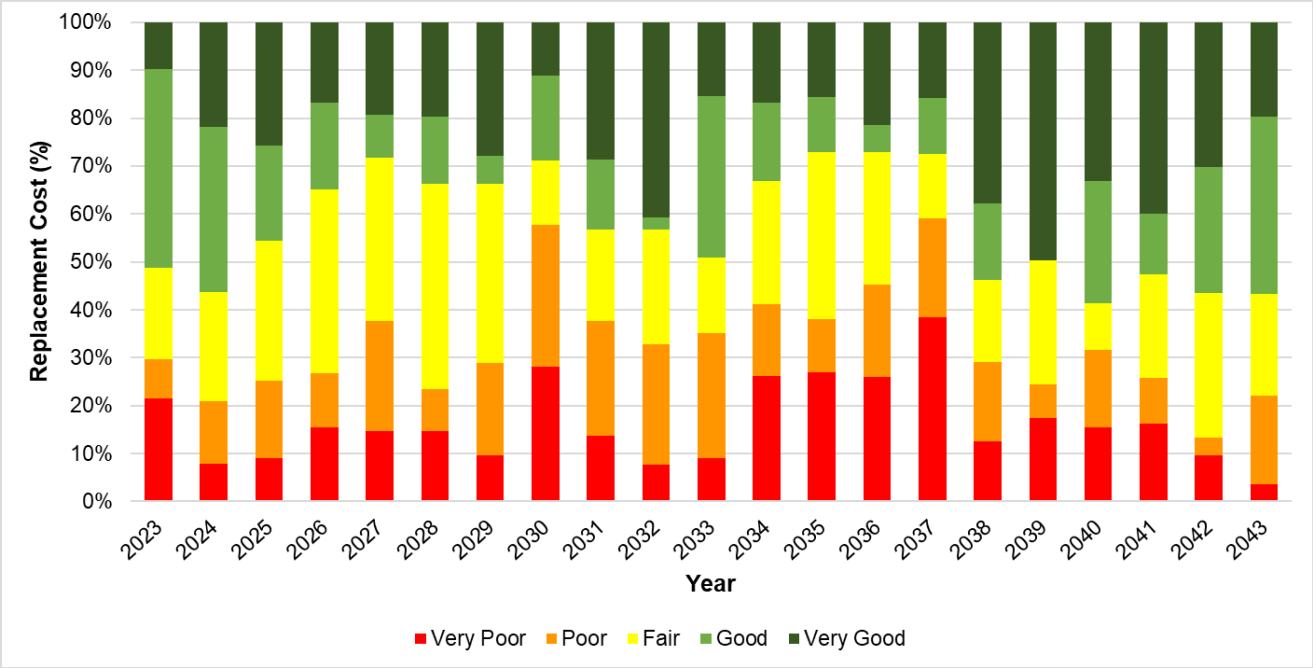


Figure 10-6. Library Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

10.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 10-7 and Table 10-6. Figure 10-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 10-6.

The City's anticipated budget has been developed to meet the infrastructure needs of the asset category. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets or to optimize performance of assets based on lifecycle strategies. Although the Library is adequately funded, the City should ensure to follow the lifecycle strategies as described in Section 10.3 to optimize performance of assets and increase the overall condition of the asset inventory. Ensuring the anticipated investments are sustained into the future and lifecycle strategies are followed will ensure the Library can continue providing quality service to residents.

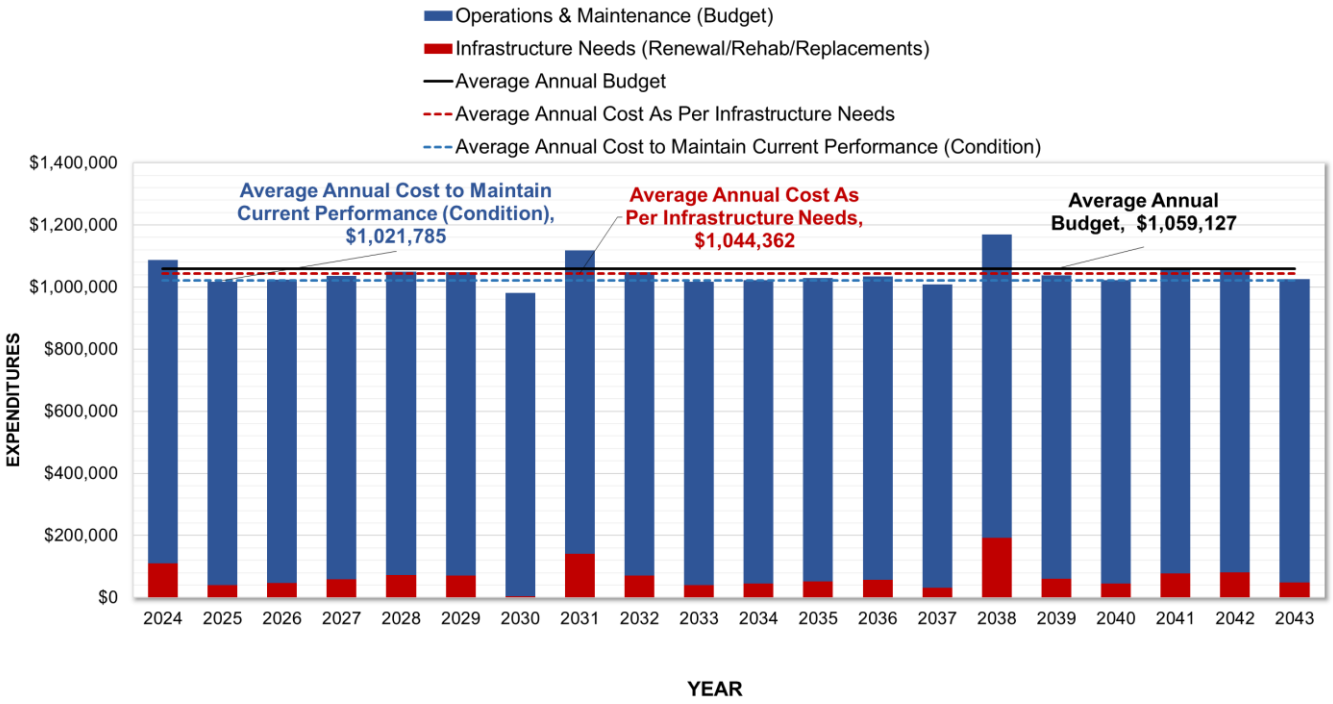


Figure 10-7. Library Scenario Comparison

10.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 10-6.

Table 10-6. Library Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$977,127	$977,127	$977,127
Renewal, Rehabilitation, & Replacement	$82,000	$44,658	$67,235
Total Expenditure	**$1,059,127**	**$1,021,785**	**$1,044,362**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

10.5 Data Confidence and Improvement Plan

Table 10-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 10-7. Data Confidence - Library

Data Source	Data Confidence
Citywide (2022)	Good

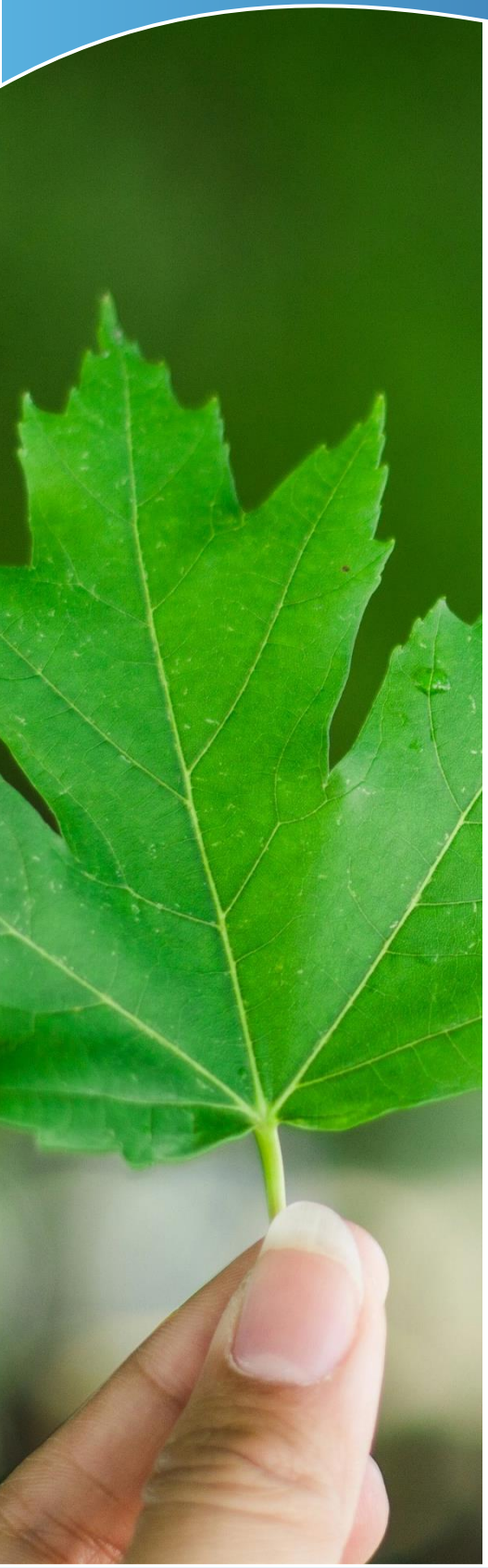
10.5.1 Recommendations for Improvements

Information for the Library was informed by the City's Citywide database. This information is updated on an annual basis, and at the time of the development of this plan, only information from 2022 was available.

It is recommended that the data provided be reviewed and inconsistencies be cleaned to ensure assets are appropriately grouped together and improve planning. It is also recommended that the City review with Library staff if this information is thorough and complete.

Assumptions were made for the lifecycle strategies for the library assets, which also should be reviewed and assessed with Library staff.

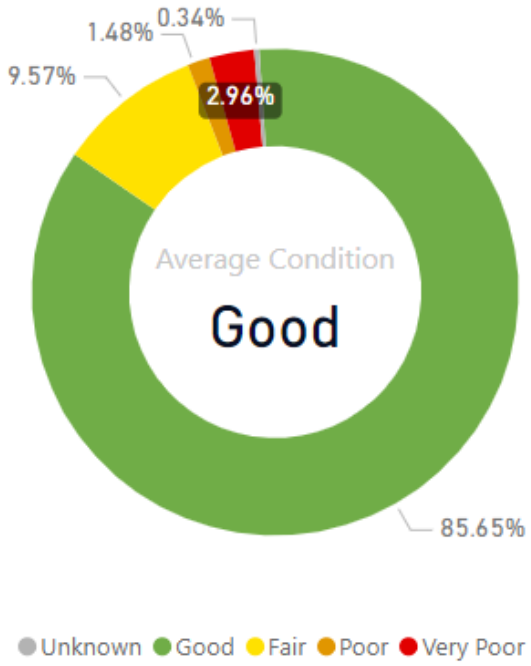
11 Natural Assets



Replacement Value

$5,937,000 M

Overall Average Asset Condition



Quick Facts

Natural Assets has

- 5,923 trees with over 75 different species
- Numerous native tree species including Redbud, Eastern White Pine, Red Maple and Kentucky Coffee Tree

11 Natural Assets

Natural Assets are also referred to as green infrastructure assets in the O. Reg. 588/17, consisting of assets that provide ecological and hydrological functions and processes. In the City of Port Colborne this asset group consists of trees and stumps, providing many benefits to residents including but not limited to air filtration, shade, and water filtration.

11.1 State of the Infrastructure

11.1.1 Asset Inventory and Valuation

The City manages Natural Assets including trees and stumps with a total replacement value of $5,937,000. Table 11-1 shows the natural assets inventory and the current replacement value by asset type.

Table 11-1: Asset Inventory and Current Replacement Value – Natural Assets

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Trees	5,923	Units	$5,923,000
Stumps	14	Units	$14,000
Total			**$5,937,000**

11.1.2 Asset Condition

Asset condition was assigned to trees and stumps by staff inspections. A description of the condition ratings scale can be found in Table 11-2.

Table 11-2. Condition Rating Scale – Natural Assets

Condition	Age/ESL
Very Good	1
Good	2
Fair	3
Poor	4
Very Poor	5
Unknown	

Overall asset condition for Natural Assets by replacement value can be seen below in Figure 11-1 and Figure 11-2.

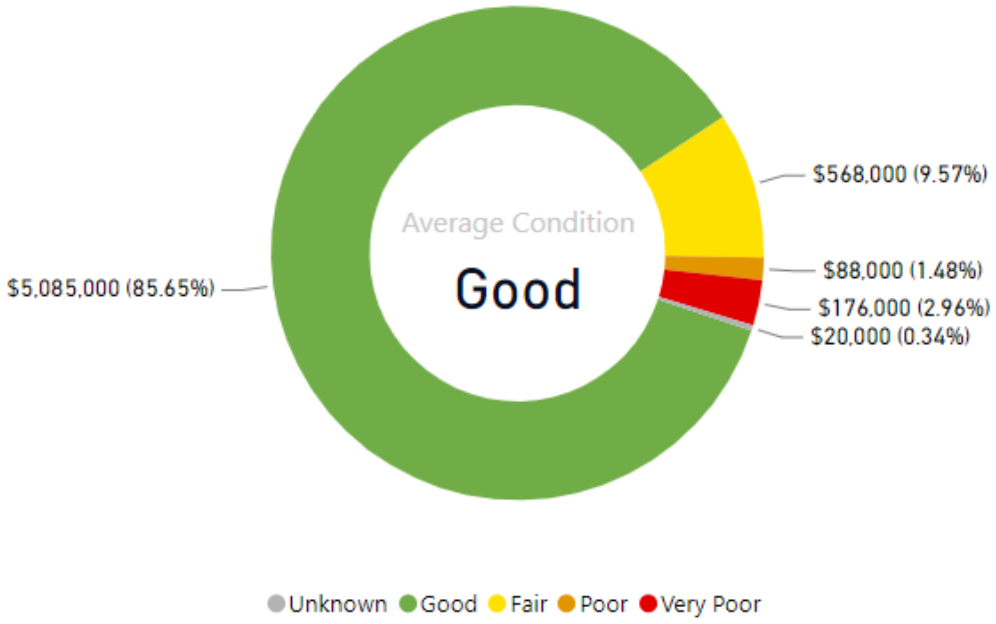


Figure 11-1. Asset Condition by Replacement Value – Natural Assets

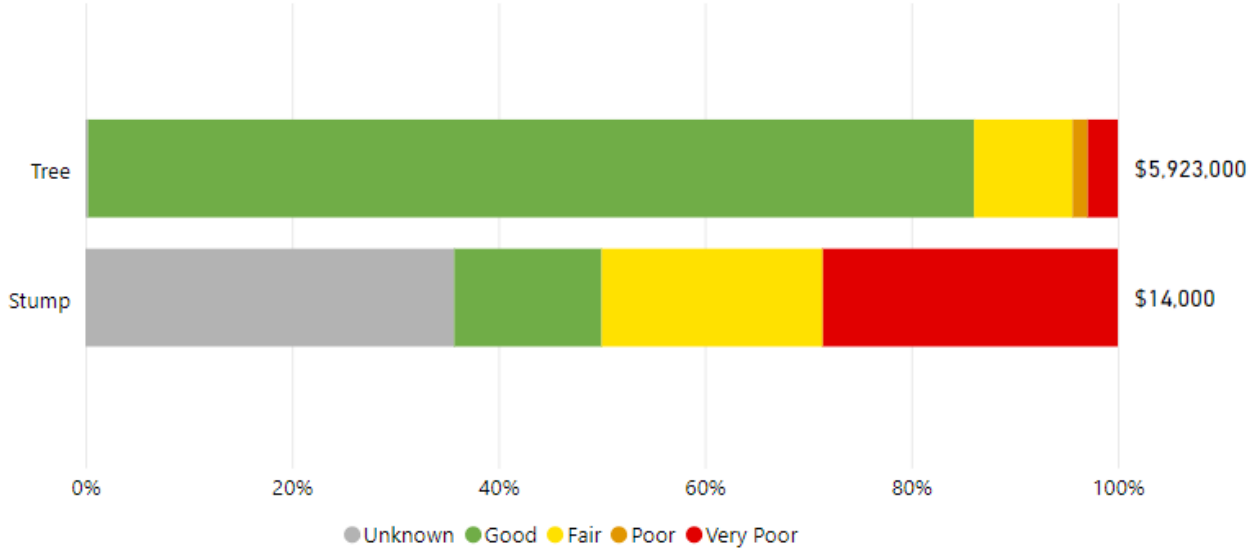


Figure 11-2. Asset Type Condition by Replacement Value – Natural Assets

The average condition of Natural Assets is good, with over 85% of assets in good condition. Figure 11-2 shows the small portion of Trees in poor to very poor condition, and a small number of stumps in very poor condition.

11.1.3 Asset Age

While most assets decrease in value as they age, trees typically provide more value to the community as they grow. Age is not collected for tree assets. Figure 11-3 below shows the count of trees by the diameter at breast height measurement to show a distribution of the maturity of urban trees throughout the City.

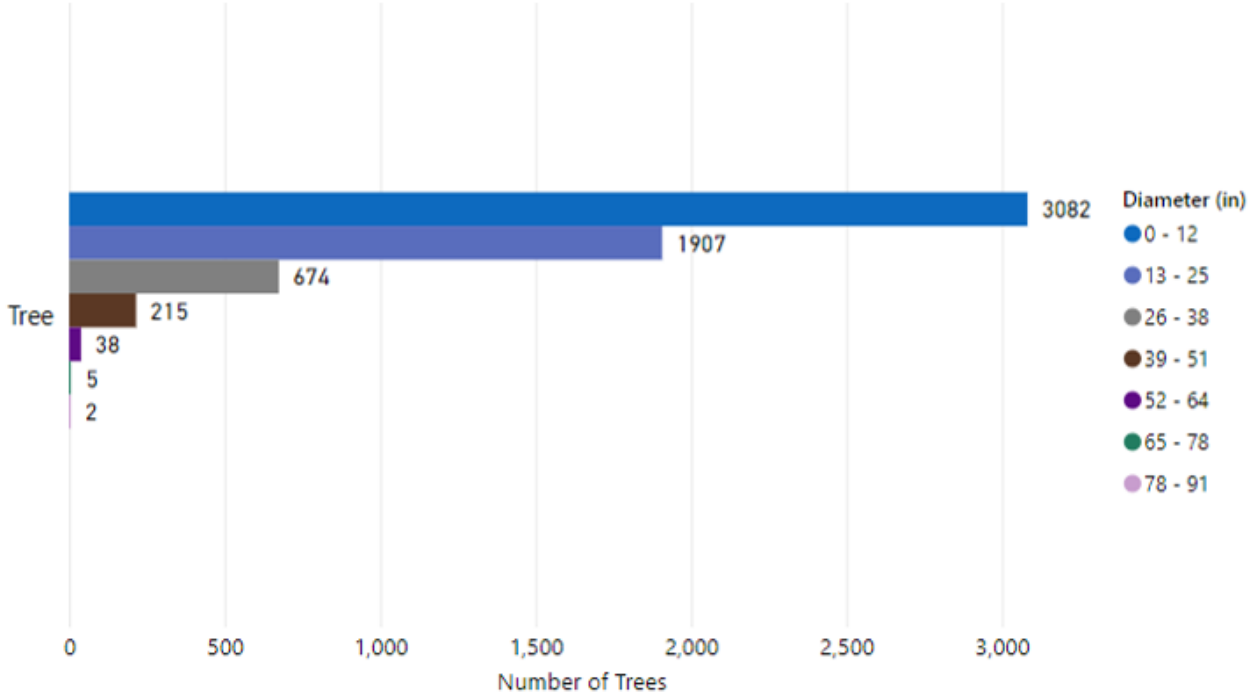


Figure 11-3: Count of Trees by Diameter at Breast Height (in)

11.2 Levels of Service

Service Statement: Natural assets can lead to more sustainable, resilient, and cost-effective municipal planning and development.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 11-3 and Table 11-4 provide a summary of the community and technical levels of service metrics for the City's Natural Assets. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Natural Assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 11-3. Community Level of Service– Natural Assets

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	0.38%[3]

Table 11-4. Technical Level of Service– Natural Assets

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percentage of total replacement cost for Tree assets in very poor condition	2.9%
Accessible & Reliable	Trees planted per year by City Forestry office	35
Accessible & Reliable	Percent of urban canopy coverage	32%
Accessible & Reliable	Percent of tree related work orders closed within designated timeline	100%
Accessible & Reliable	# of tree inspection requests per year	5

[3] Budget for tree assets is covered under Parks & transportation, which provide a combined budget of $200k for tree maintenance and renewal.

11.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices for Natural Assets.

11.3.1 Lifecycle Activities

Lifecycle activities for Natural Assets involve a series of processes and tasks aimed at effectively managing the entire lifespan of an asset. These activities ensure that Natural Assets continue to provide their intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of assets.

Ensuring Natural Assets and maintained in optimal condition, the City can extend their lifespan and mitigate the risk of premature replacement. It also ensures that residents continue to benefit from amenities offered from well-maintained assets, which promotes community well-being. Table 11-5 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 11-5. Asset Management Practices and Associated Frequency – Natural Assets

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Urban forest management plan	• As needed
Operations & Maintenance Activities	
• Reactive maintenance: trimming, inspections, pruning, road clearance	• As needed
• Preventative maintenance: trimming, inspections, pruning, road clearance	• On-going
Renewal/Replacement Activities	
• End of life replacement / replanting of trees	• As needed
• Deep root fertigation, propping, cabling	• As needed
Disposal Activities	
• Tree removal	• As needed
Service Improvement & Growth Activities	
• New areas to include trees	• Through developments
• Urban forest expansion	• As budget allows

11.4 Funding the Lifecycle Activities

Natural assets are a unique asset within the AMP. This asset is not replaced and renewed as typical infrastructure assets. Trees within the City of Port Colborne are regularly maintained and replaced under the operations budget for trees. The budget identified for natural assets includes maintenance and replacements for trees.

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$200,000	$200,000	$200,000
Renewal, Rehabilitation, & Replacement	No Budget	No Budget	No Budget
Total Expenditure	**$200,000**	**$200,000**	**$200,000**
Average Annual Funding Gap		**No Gap**	**No Gap**

11.5 Data Confidence and Improvement Plan

Table 11-6 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 11-6. Data Confidence – Natural Assets

Data Source	Data Confidence
GIS Tree Assessment	B

11.5.1 Recommendations for Improvements

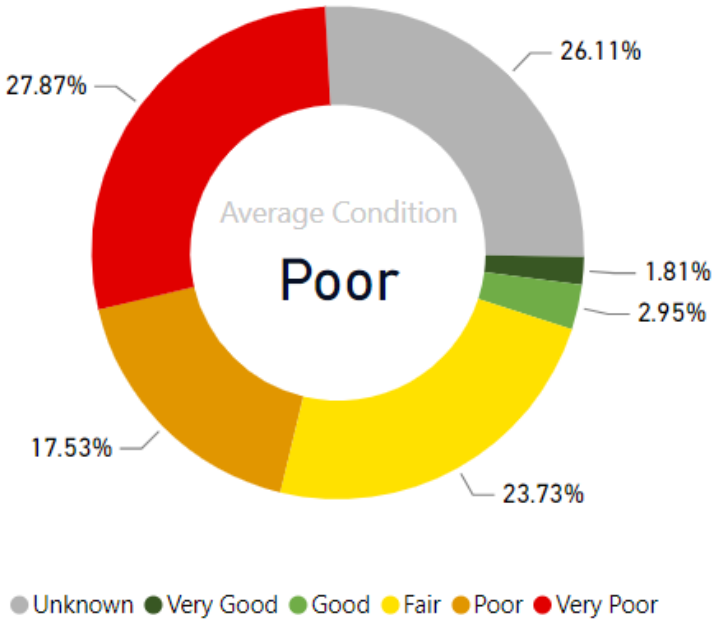
Although the data for trees has a high level of confidence, it is recommended that the City further enhance the natural assets category, and consider other green infrastructure that the City owns, as required by O.Reg. 588/17.

12 Parks

Replacement Value

$30,354,160 M

Overall Average Asset Condition



Quick Facts

Parks has

- 32 different Parks with pavilions, sport surfaces, and playgrounds
- Walkways, trails and an active transportation area

12 Parks

Parks provide numerous benefits to residents and visitors in the City of Port Colborne. Parks provide spaces for community members to gather in spaces like playgrounds, sports surfaces, trails, and walkways. This supports cohesion and a sense of social belonging in one's community. Parks also help support community health and wellness through access to green spaces.

12.1 State of the Infrastructure

12.1.1 Asset Inventory and Valuation

The City of Port Colborne has several different asset types in the Parks category including active transportation, park assets, parking lots, pavilions, playground structures, roadways, sport structures and surfaces, a Spraypad and trails and walkways. The total current replacement value for these assets is $30 million. Table 12-1 shows the asset inventory and current estimated replacement value for Parks assets.

Table 12-1. Asset Inventory and Current Replacement Value - Parks

Asset Type	Count	Quantity Unit	2024 Estimated Replacement Value
Active Transportation	10,718	m	$3,215,400
Park Assets	284	Units	$930,900
Parking Lot	88,531	Sq m	$4,381,860
Pavilion	4,940	Sq m	$494,000
Playground Structure	41	Units	$11,750,000
Roadway	5,000	Sq m	$100,000
Sport Structure	1	Unit	$1,200,000
Sport Surface	35	Units	$7,320,000
Spraypad	1	Unit	$350,000
Trail	5,600	m	$576,000
Walkway	200	m	$36,000
Total			**$30,354,160**

A park asset inventory was developed by staff for the purposes of this AMP. It is recommended that this inventory continue to be enhanced to verify all assets and fill in gaps as required. Replacement values were based on similar assets to represent present costs for these asset types.

12.1.2 Asset Condition

Condition was assigned to Parks assets using age and estimated service life. A description of the condition rating scale can be found in Table 12-2.

Table 12-2. Condition Rating Scale – Parks

Condition	Age/ESL
Very Good	>80% life remaining
Good	60-80% life remaining
Fair	40-60% life remaining
Poor	20-40% life remaining
Very Poor	0-20% life remaining
Unknown	

Figure 12-1 and Figure 12-2 show the overall condition distribution for Parks assets in the City of Port Colborne.

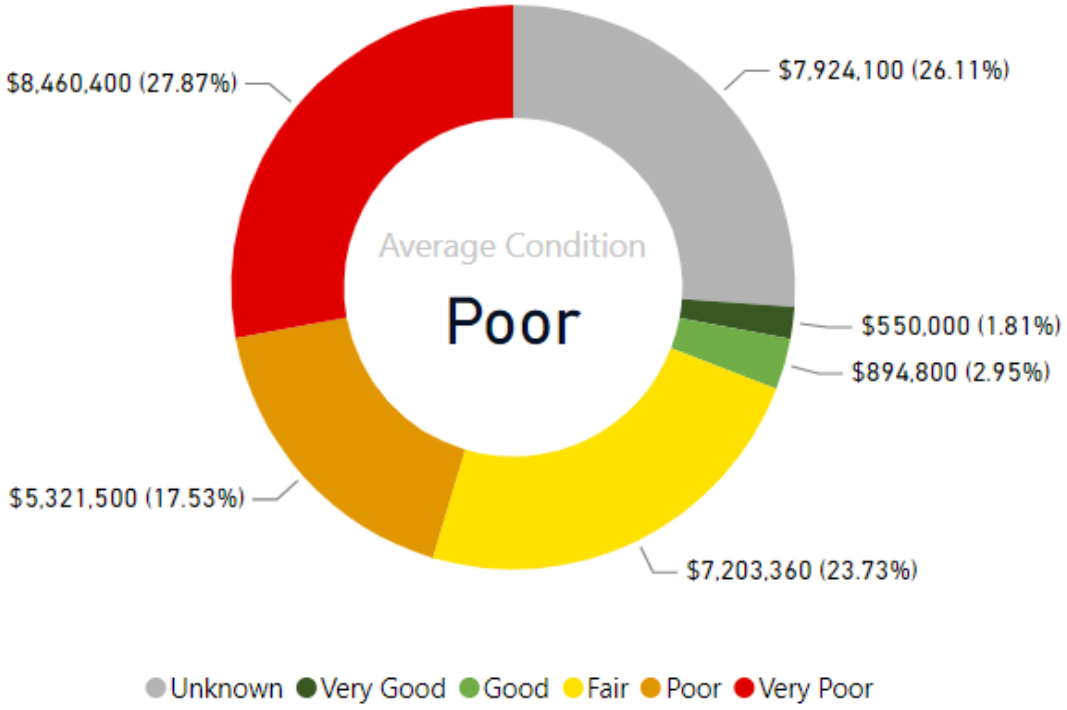


Figure 12-1. Asset Condition by Replacement Value - Parks

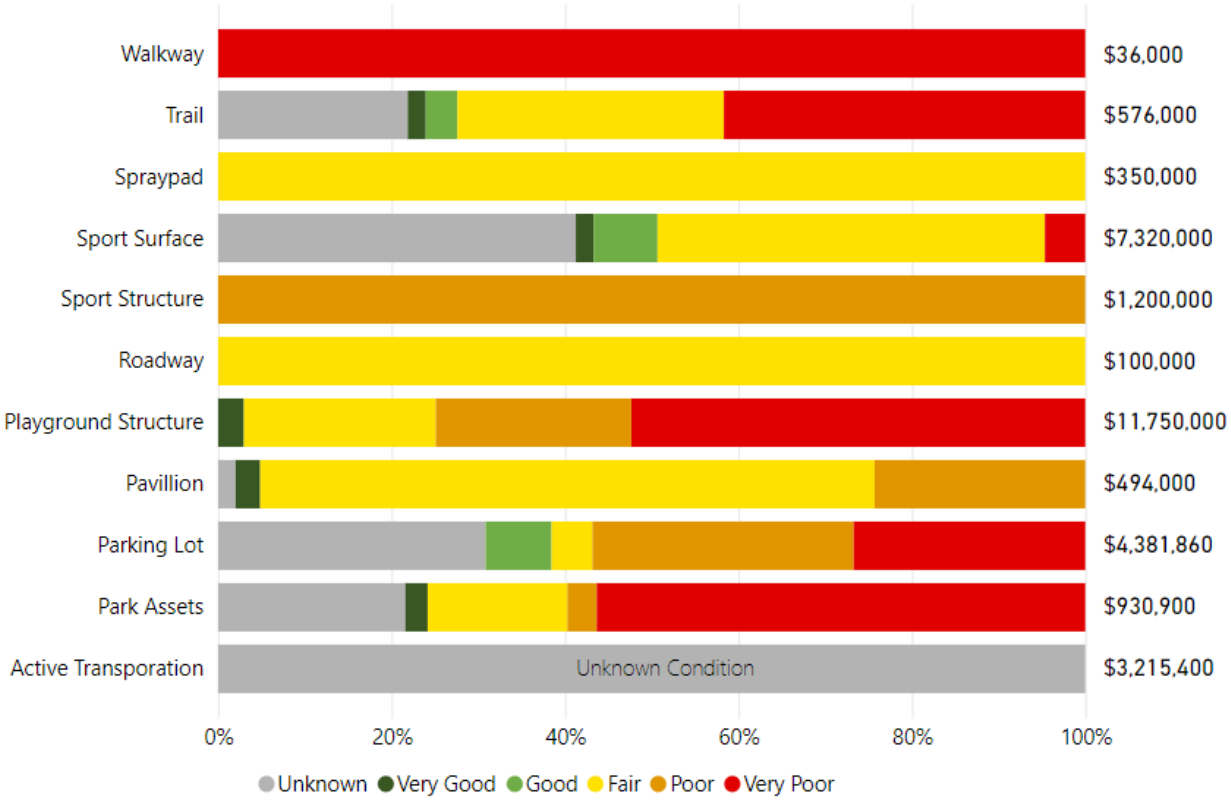


Figure 12-2. Asset Type Condition by Replacement Value – Parks

The average condition for Parks assets in poor, with just over 45% of assets in poor to very poor condition. This suggests that a large portion of parks assets are at or nearing the end of their service life. Figure 12-2 shows asset type conditions, highlighting that all or a large portion of walkways, trails, playground structures, parking lots and park assets are in very poor condition. With this information, the City can plan for the replacement of these assets in the Capital plan.

12.1.3 Asset Age

Asset age can be important data in asset management planning as it provides municipalities with information to use in planning for short- and long-term replacements. Comparing the average age of assets to estimated service lives can help municipalities make decisions on the management of Parks assets. The average age and average estimated service life for Parks asset types can be seen below in Figure 12-3.

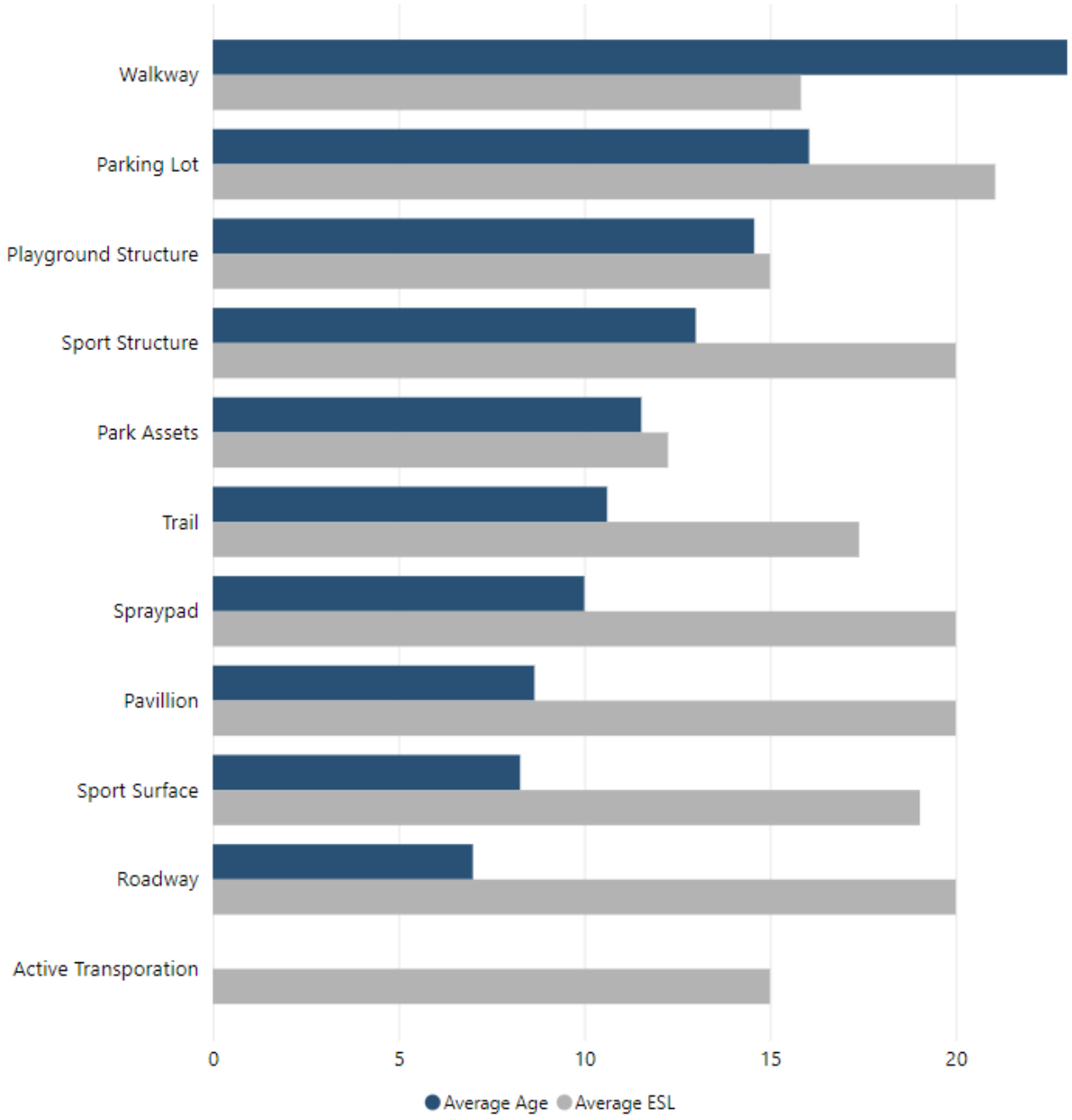


Figure 12-3. Average Age and Average Estimated Service Life – Parks

All assets have an average age that is below its average estimated service life, apart from walkway and playground structure assets. Playground structures are inspected regularly by City staff to ensure their safety, but these assets are beyond their service life with some in very poor condition as seen in Figure 12-2.

12.2 Levels of Service

Service Statement: Parks provide a wide range of services and benefits that contribute to the physical, social, cultural, and economic well-being of the City.

By establishing levels of service metrics, municipalities can assess their performance, identify areas for improvement, and make informed decisions to better meet the needs of their communities while optimizing resource allocation and promoting accountability and transparency in municipal governance. Table 12-3 and Table 12-4 provide a summary of the community and technical levels of service metrics for the City's Park assets. There are no metrics for this asset category that are required by O.Reg. 588/17. The City has chosen metrics that define and measure the desired standards for delivering services that are provided by Park assets. These metrics help set goals, evaluate performance, allocate resources effectively, and communicate expectations to stakeholders.

Table 12-3. Community Level of Service – Parks

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Cost Efficient	Percent of current budget (Capital & Operating Budget - 2024)	5%

Table 12-4. Technical Level of Service – Parks

Key Service Attribute	Performance Measure	Current Performance
City Defined		
Accessible & Reliable	All Parkland in Municipality as a percent of Total Area of Municipality	1%
Accessible & Reliable	Parks per 2,014 residents	3.4
Accessible & Reliable	Park acreage per 1,000 residents	20.59
Accessible & Reliable	Kilometre of trails per 20,000 residents	19.75
Accessible & Reliable	Percentage of total replacement cost of Park assets in very poor condition	36.6%

Key Service Attribute	Performance Measure	Current Performance
Cost Efficient	Percentage of total replacement cost for parks assets past their estimated useful life	20.44%

12.3 Lifecycle Management Strategy

The aim of the Lifecycle Management Strategy is to define and implement a series of planned measures, drawing from industry best practices, to ensure our assets consistently deliver a sustainable level of service to residents. As the City progresses, it is enhancing its asset management practices by implementing standardized processes, procedures, and tools across all service areas. Below is an overview of some existing asset management practices within Parks.

12.3.1 Lifecycle Activities

Lifecycle activities for Parks assets involve a series of processes and tasks aimed at managing the entire lifespan of an asset. These activities ensure that Parks assets continue to provide the intended services efficiently, effectively, and sustainably throughout their lifecycle, and maximize the value they provide to the community. This approach aligns with best practices in asset management, where preventive maintenance and timely repairs are crucial for preserving the functionality, safety, and longevity of assets.

Maintaining these assets in optimal condition and completing lifecycle management activities and following the strategies within this plan, the City can extend their asset's lifespan and mitigate the risk of costly major repairs or premature replacement. It also ensures that residents continue to benefit from high-quality services, the City can provide services at the lowest possible cost, as well as avoid risks associated with asset ownership. The risks of not following the activities and strategies within this plan have been further defined in 13.3.1 Risks Associated with Lifecycle Strategies.

Table 12-7 below identifies asset management practices and planned actions and their frequency for each of the lifecycle activity categories. The lifecycle activity categories include non-infrastructure, operations and maintenance activities, renewal/replacement activities, disposal activities, and service improvement and growth activities. A description of each lifecycle activity category can be found in Section 1.4.7.1 Lifecycle Management Activities.

Table 12-5. Asset Management Practices and Associated Frequency – Parks

Asset Management Practices/ Planned Actions	Frequency Associated with Practices / Planned Actions
Non-Infrastructure	
• Asset tracking / GIS	• On-going
• Recreation Masterplan (feasibility study for level of service changes)	• 10 years; review need for update every 5 years
Operations & Maintenance Activities	
• Seasonal inspections on seasonal equipment	• Seasonally
• Park inspections (playground inspections, etc.)	• Monthly
• Reactive repairs	• As required
• Preventative maintenance	• As required
• Grooming, grass cutting, line and general field/court maintenance	• Daily / weekly activities
Renewal/Replacement Activities	
• Renewal activities	• As required
Disposal Activities	
• Disposal	• As required
Service Improvement & Growth Activities	
• Requiring new equipment	• As identified
• New assets	• As identified

12.4 Funding the Lifecycle Activities

The City uses the lifecycle strategies described above in Section 12.3 to plan work and determine future expenditure needs. These activities, with the scenarios below establish a thorough framework for managing infrastructure assets. This helps ensure the City can meet the demands of the current services and existing infrastructure. Each of the scenarios below considers only renewal, rehabilitation, and replacement lifecycle activity cost and needs. These lifecycle activities ensure that infrastructure remains in a state of good repair to continue to provide services to the community.

The City has developed the anticipated budget based on the 2024 capital and operating budget, as well as the infrastructure needs study, and other factors to plan for the required expenditures for their assets. This AMP provides an analysis of the anticipated budget developed to ensure it is aligned with the infrastructure needs scenario (described below). It is the goal of the City to fully fund the infrastructure needs to improve the quality of the assets and services currently being provided. The scenario assumes that the City will fund the assets as per the budgets developed for this AMP.

Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budget shown below in Section 12.4.4 4.4.4Scenario Comparison and Infrastructure Gap. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures.

12.4.1 Scenario 1: Anticipated Budget

Scenario one analyzes the impact of current funding to the asset performance (condition) over the 20-year forecast period. The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 33% to "catch up" to required expenditures until 2025, and 20% from 2026 to 2038. It is assumed that this funding will be made available as prescribed in this AMP.

The anticipated average annual funding for renewal, rehabilitation and replacement for Parks is approximately $1.5 million. The condition distribution for the anticipated budget scenario can be seen in Figure 12-4. With current anticipated annual funding, overall asset condition increases drastically over time, with assets in good to very good increasing from 16% to 51% towards the end of the forecast period. If these annual anticipated investments are sustained, the City will be able to provide quality services to the community and increase the overall condition of assets.

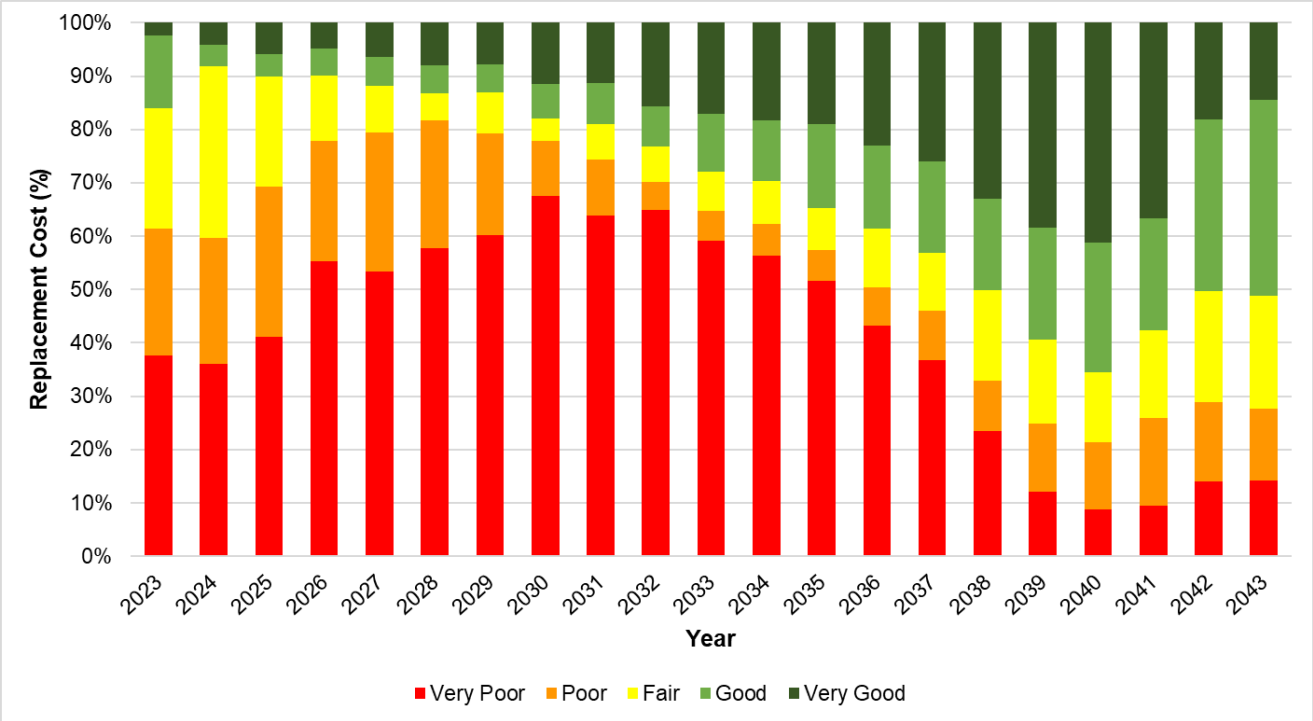


Figure 12-4. Parks Performance Forecast with Current Funding

12.4.2 Scenario 2: Cost to Maintain LOS

Scenario two calculates the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the Parks asset category (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Based on the modelling results, it was determined that a budget of $1.1 million is needed to maintain the current performance (condition/level of service) for Parks assets. There in no funding gap in this scenario compared to the current anticipated budget. The condition distribution for the cost to maintain LOS scenario can be seen below in Figure 12-5. While asset condition remains roughly the same, a large percentage of assets are in poor to very poor condition throughout this scenario whereas overall condition increases through scenario one, with the current anticipated budget.

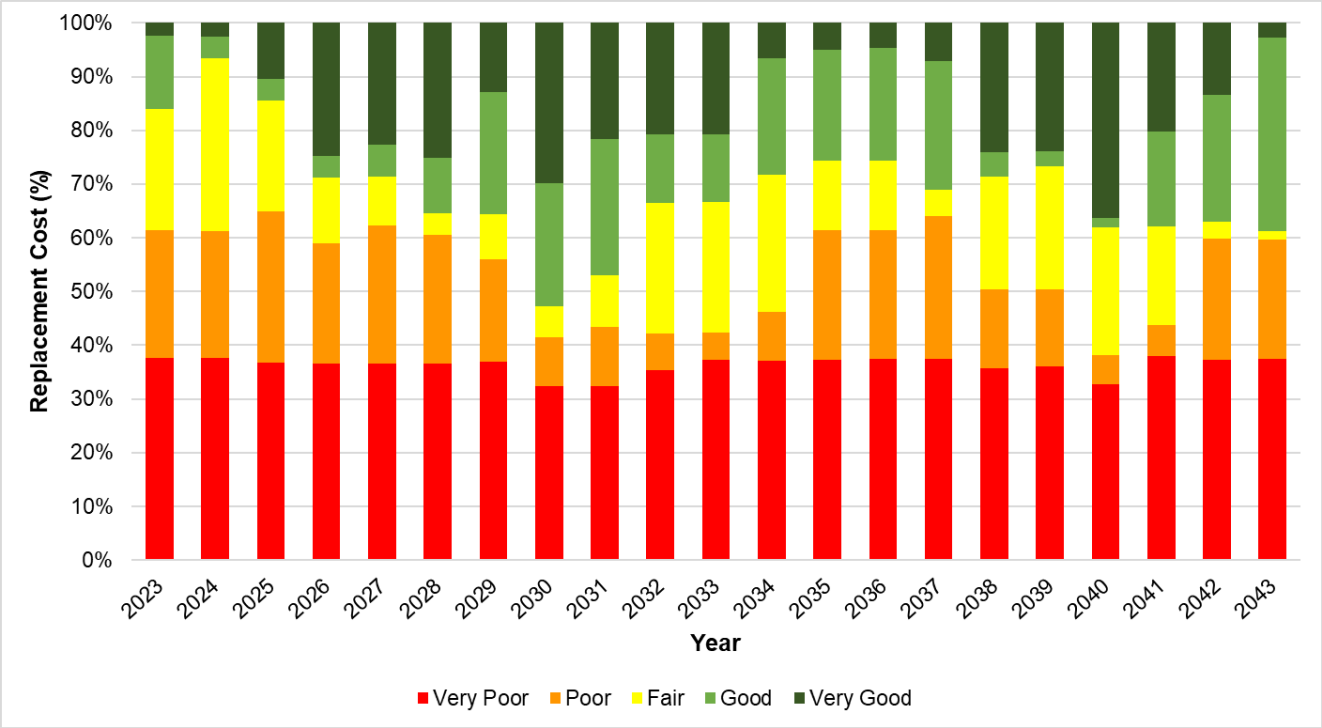


Figure 12-5. Parks Performance Forecast to Maintain Levels of Service

12.4.3 Scenario 3: Infrastructure Needs Assessment

Scenario three determines the approximate annual costs associated with the lifecycle strategies developed in consultation with City staff, and using industry best practices for the renewal, rehabilitation and replacement lifecycle activities. This scenario also identifies the backlog of work that should have already been completed by the time of this assessment.

It was determined that an anticipated annual budget of $1.5 million is required for this scenario. There is no funding gap compared to the anticipated budget allocation in Parks. The condition distribution for Parks assets with infrastructure needs as per lifecycle strategies can be seen below in Figure 12-6. Overall asset condition increases in this scenario.

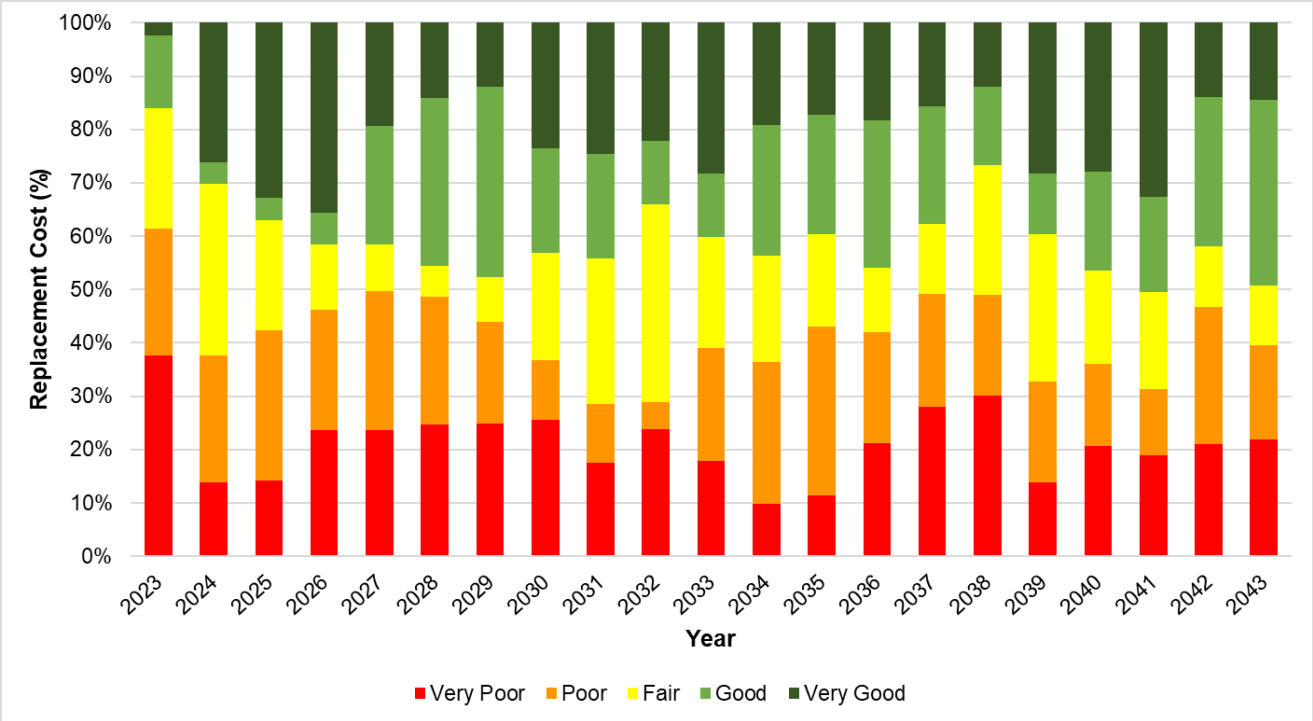


Figure 12-6. Parks Performance Forecast with Infrastructure Needs as per Lifecycle Strategies

12.4.4 Scenario Comparison and Infrastructure Gap

The aggregated investment needs under each of the three scenarios are shown below in Figure 12-7 and Table 12-6. Figure 12-7 shows a bar graph of the forecasted renewal, rehabilitation, and replacement expenditures for the infrastructure needs according to Scenario 3, as well as the remaining lifecycle activity expenditures, informed by the City's anticipated budget. The solid and dashed lines on the figure represent the equivalent annual investment needs of the three scenarios described above. Additional lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown in Table 12-6.

The City's anticipated budget has been developed to meet the infrastructure needs and includes increases of up to 33% to "catch up" to required expenditures until 2025, and 20% from 2026 to 2038. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights no funding gap to maintain the current performance (condition) of assets and no funding gap to optimize the performance of assets based on the lifecycle strategies. If current anticipated annual investments in Parks assets are sustained over time, infrastructure needs will be met, assets will increase in condition and continue to provide high quality services to residents in the City of Port Colborne.

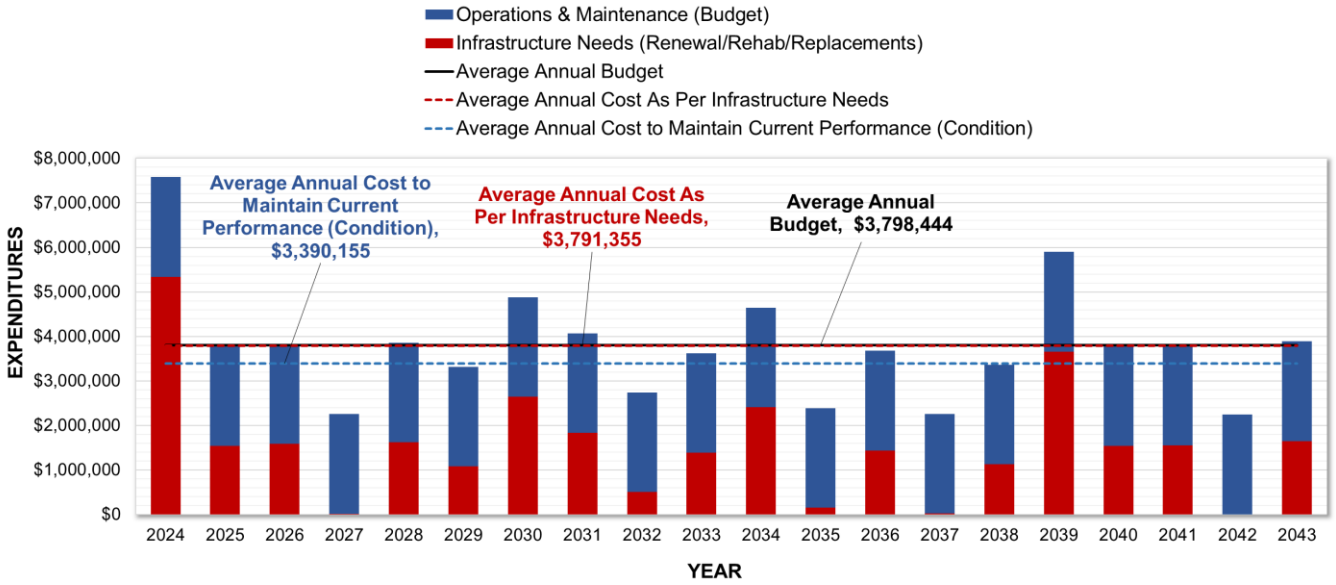


Figure 12-7. Parks Scenario Comparison

There is a "backlog" included in the year 2024, which represents the cumulative backlog of deferred work that has accumulated and is needed to be complete. Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals work puts the City of Port Colborne at risk to not achieve intergenerational equality. If the City continues to push out necessary renewals, future generations will be unable to maintain the level of service the customers currently enjoy and burden future generations with significant costs.

Continued deferrals of projects will also lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

12.4.4.1 Forecasted Infrastructure Gap

Anticipated funding for capital budgets presented are the annual average for the 2024-2043 fiscal years. By having a clear understanding of the costs associated with necessary lifecycle activities and their potential impact on infrastructure performance, the City can make informed decisions about budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of its infrastructure. The infrastructure gap is summarized below in Table 12-6.

Table 12-6. Parks Lifecycle Activity Investments & Annual Average Infrastructure Gap

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	$2,238,507	$2,238,507	$2,238,507
Renewal, Rehabilitation, & Replacement	$1,559,937	$1,151,648	$1,552,848
Total Expenditure	**$3,798,444**	**$3,390,155**	**$3,791,355**
Average Annual Funding Gap		**No Gap**	**No Gap**

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

This document, and the infrastructure needs, will continue to be enhanced and updated as more information is made available on the City's assets.

12.5 Data Confidence and Improvement Plan

Table 12-7 outlines the main data sources and overall confidence in the data used for this AMP. Data confidence is based on how many assumptions needed to be made and the reliability of the data sources.

Table 12-7. Data Confidence - Parks

Data Source	Data Confidence
Spreadsheet Staff Review	Fair

12.5.1 Recommendations for Improvements

Data for the park assets was compiled for the purposes of this AMP, many gaps being filled based on staff assessments and assumptions of install dates, estimated service lives and replacement values.

It is recommended that the City continue to fill the gaps in this information and continue to maintain it. It is also recommended that the City, as part of data management strategy identify the “source of truth” for park assets and identify responsible parties for the maintenance of this information. Ensuring accurate and comprehensive data is crucial for effective planning and resource allocation. By updating information such as installation dates, and replacement costs, they City can better assess its IT infrastructure and make informed decisions for maintenance and improvements.

13.0 Financial Strategy

13 Financial Strategy

The Financial Strategy in this AMP is based on the City of Port Colborne's planned expenditures (budget) to determine the funding available to support infrastructure. All forecasted dollars are presented in 2023 dollars, and no inflationary measure has been included in the needs. This Financial Strategy provides an analysis of the average annual funding available, the expenditures required to maintain current LOS, as well as the ideal expenditures to meet infrastructure needs based on the lifecycle strategies identified throughout this plan.

For the purposes of this AMP only renewal, rehabilitation and replacement lifecycle activity costs and needs are analyzed. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. Costs for the remaining lifecycle activities (including non-infrastructure, operations and maintenance, service improvements, and growth) are incorporated into the capital and operating budgets shown within this AMP. For the purposes of this AMP, it is assumed that these activities and their associated costs are adequate to fulfill the community's expectations. This AMP does not provide an optimization analysis for the activities or costs. Growth needs are captured based on the planned projects funded through development charges or initiatives and activities to address the growing population. Recommendations for future AMPs include breaking these costs down further into their respective lifecycle activity categories to better understand lifecycle activity expenditures.

For the purposes of this AMP, it is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

13.1 Budget Overview

Effective asset management planning requires that an approved AM strategy be fully integrated into annual financial planning and budgeting processes. The budget overview provides an analysis of the average annual planned funding available, the expenditures required to maintain current performance, or level of service, and identifies funding required to meet infrastructure needs based on the lifecycle strategies defined throughout this document.

The City's budgets are developed to allocate funds to cover the costs of providing services, maintain existing infrastructure, and construct new assets. The budgets are designed to balance required costs (expenditures) with available funding (revenues) and are categorized into:

Operating Budget: Supports the day-to-day activities and functions to provide City services. Samples of the expenditures funded from the operating budget include staff salaries, equipment maintenance, material supply and facility services. These are expensed within the fiscal year.

Capital Budget: Includes large expenditures associated with repair, rehabilitation, renewal, and construction or purchase of new infrastructure. It leverages various available funding sources over a ten-year period planning period. The establishment of capital budgets includes the evaluation of long-term investment proposals along with estimating future cash flows.

13.1.1 Anticipated Budget

A summary of the forecasted expenditures for the 20-year period are provided in Table 13-1. Based on the review of this forecast, the average annual expenditures planned for operating and renewal and replacement activities are listed for rate and tax supported assets is $17.1M, and $27.6M respectively.

The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. The planned expenditures are based on the 2024 operating and capital budget, and the planned expenditures developed by staff. The annual average budget required to fulfill this plan are outlined in Table 13-1. This plan has been developed in consultation with staff on the development of this plan, the wastewater financial plan, and the approved water financial plan. The planned budget has been developed with the intention of increasing funding to address the infrastructure gap and leveraging debt where required.

Table 13-1. Infrastructure Expenditure Summary (Average Annual Anticipated Budget)

Service Category	Operations & Maintenance	Renewal, Rehabilitation & Replacement (Capital)	Total
Rate Supported			
Storm	$493,600	$4,644,228	**$5,137,828**
Water	$2,936,826	$3,926,591	**$6,863,417**
Wastewater	$2,860,792	$2,237,182	**$5,097,974**
Total	**$6,291,218**	**$10,808,001**	**$17,099,219**
Tax Supported			
Transportation	$3,552,075	$5,697,720	**$9,249,795**
Emergency Services	$4,459,000	$329,475	**$4,788,475**
Facilities	$2,554,530	$2,283,179	**$4,837,709**
Fleet & Equipment	$1,045,577	$990,820	**$2,036,397**
Information Technology	$1,422,566	$216,188	**$1,638,754**

Service Category	Operations & Maintenance	Renewal, Rehabilitation & Replacement (Capital)	Total
Library	$977,127	$82,000	**$1,059,127**
Natural Assets	$200,000	No Budget	**$200,000**
Parks	$2,238,507	$1,559,937	**$3,798,444**
Total	**$16,449,382**	**$11,159,319**	**$27,608,701**

13.2 Infrastructure Needs

The infrastructure renewal, rehabilitation, and replacement needs were determined based on Scenario 2 and Scenario 3, outlined below.

Scenario 2: Maintain Current Level of Service determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets.

Scenario 3: Infrastructure Needs as Per Lifecycle Management Strategies prioritizes a proactive approach to infrastructure investment by considering lifecycle management strategies developed with staff and based on best practices, rather than being restricted by available funding. This approach recognizes that focusing solely on immediate budget constraints may lead to short-term fixes that could prove more costly in the long run. By adopting lifecycle management strategies and best practices, the City can prioritize investments in infrastructure renewal, rehabilitation, and replacement activities in a way that maximizes efficiency, reliability, and longevity.

The expenditures for renewal, rehabilitation and replacement required for both scenarios are outlined below in Table 13-2.

Table 13-2. Cost to Maintain Current Level of Service and Infrastructure Needs As Per Lifecycle Strategies (Rate & Tax Supported)

Service Category	Average Annual Expenditure to Maintain Current LOS (Scenario 1)	Average Annual Expenditure for Infrastructure Needs As Per Lifecycle Strategies (Scenario 3)
Rate Supported		
Storm	$3,292,802	$4,520,212
Water	$395,040	$4,852,164
Wastewater	$956,721	$2,142,638

Service Category	Average Annual Expenditure to Maintain Current LOS (Scenario 1)	Average Annual Expenditure for Infrastructure Needs As Per Lifecycle Strategies (Scenario 3)
Rate Supported Total	**$4,644,563**	**$11,515,014**
Tax Supported		
Transportation	$4,209,705	$5,377,580
Emergency Services	$257,426	$329,085
Facilities	$2,456,720	$2,732,136
Fleet & Equipment	$890,582	$890,582
Information Technology	$193,372	$207,996
Library	$44,658	$67,235
Natural Assets	$200,000	$200,000
Parks	$1,151,648	$1,552,848
Tax Supported Total	**$9,404,111**	**$11,357,463**

These expenditures represent the average annual cost of the 20-year forecast based on the identified scenarios.

Figure 13-1 provides an overview of the scenarios outlined, the operation budget, and the planned expenditures for the City. The City has made a significant effort to develop a forecasted budget to meet the infrastructure needs to improve the level of service provided to the community.

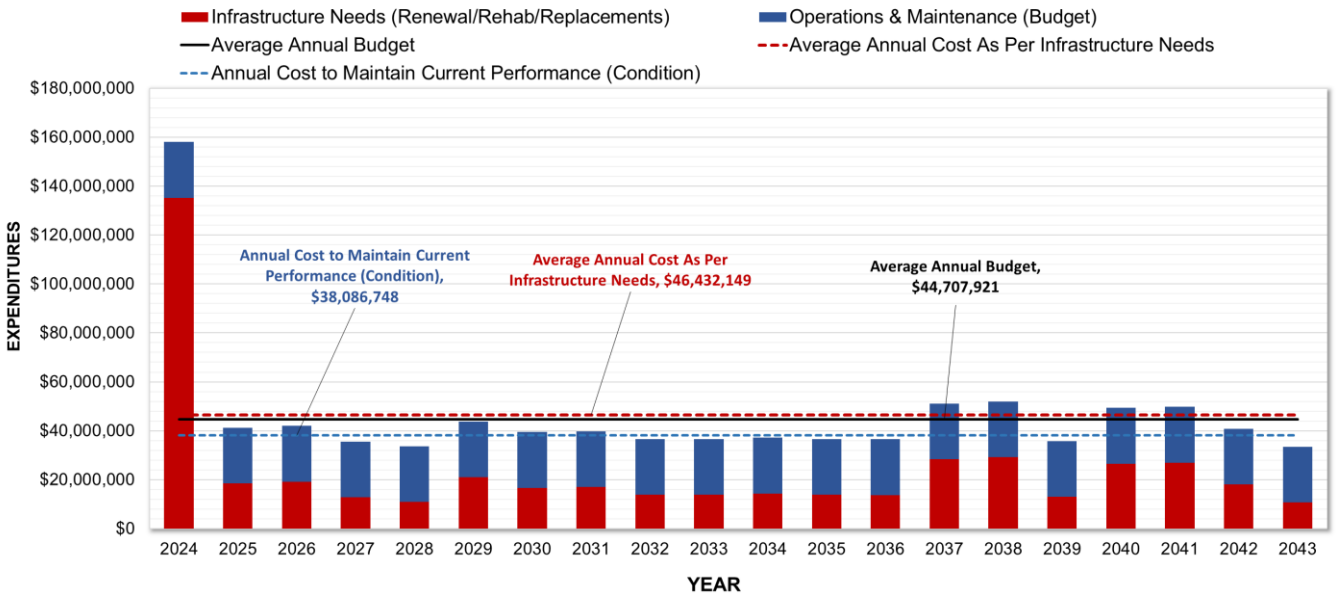


Figure 13-1. Lifecycle Activity Expenditures and Scenario Comparison

It is assumed that the anticipated budget will be provided to fund the infrastructure needs for the City's assets. The City has developed a comprehensive plan to improve the condition of its assets and enhance the services provided to its residents. By fully funding the infrastructure needs, the City is demonstrating a commitment to maintaining and upgrading its assets to ensure the quality of services for its customers. This proactive approach can lead to more efficient and effective asset management, ultimately benefiting the community.

Table 13-3. Average Annual Lifecycle Expenditures

Lifecycle Activity	Avg. Anticipated Annual Budget	Avg. Annual Cost to Maintain Current Performance (LOS)	Avg. Annual Infrastructure Needs As Per Lifecycle Strategies
Operations & Maintenance	**$22,740,600**	**$22,740,600**	**$22,740,600**
Renewal, Rehabilitation & Replacement	**$21,967,321**	**$15,346,148**	**$23,691,549**
Total Expenditure	**$44,707,921**	**$38,086,748**	**$46,432,149**
Average Annual Funding Gap		**No Gap**	**$1,724,228**
Percentage Increase Required to Address Gap			**3.86%**

The City's anticipated budget has been developed to meet the infrastructure needs of the asset category. It is assumed that this funding will be made available as prescribed in this AMP. The scenario comparison highlights there is no gap to maintain the current performance (condition) of assets and a minimal gap to optimize performance of assets based on lifecycle strategies if the funding levels developed are provided as reported in this plan. If current anticipated investments are sustained over time, infrastructure needs will continue to be met and provide high quality services to residents in the City of Port Colborne.

Since the previous AMP, the City has taken significant steps to establish improved asset management planning through their efforts to obtain updated condition assessments for multiple assets, as well as to develop a comprehensive funding strategy (as outlined in this plan), to meet the infrastructure requirements as determined by the lifecycle strategies. As updated information, and further plans and studies become available, this AMP will continue to evolve and become more precise in the recommendations for infrastructure expenditures.

13.3 Financial Strategies

The City currently has multiple funding sources, the largest being Property Taxes and User Rates. An overview of the funding envelope can be seen in Figure 13-2. The City is actively looking at strategies to increase revenues to address the significant infrastructure needs.

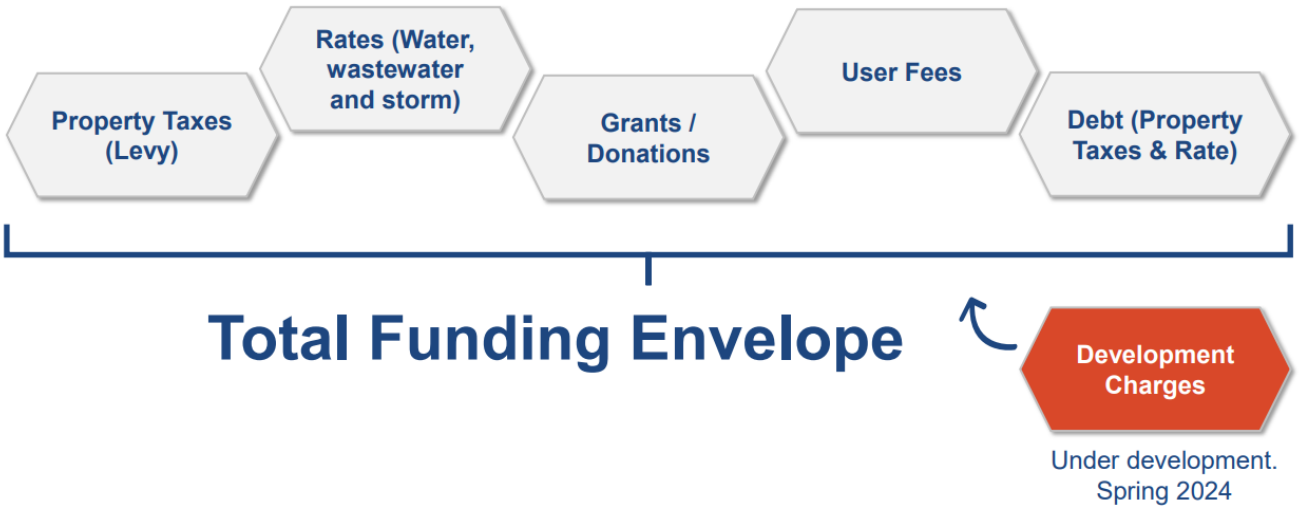


Figure 13-2. City of Port Colborne Funding Envelope (source 2024 Budget)

The financial strategies that have been incorporated into the planned budget to address the infrastructure needs include:

Advocacy: City staff and Council have been instrumental in advocating for the City to senior levels of government seeking funding support for the municipality, which continues to be successful.

Debt Financing: Based on the pressures faced by the City and the significant amount of expenditures required, the City plans to leverage debt financing to address the infrastructure needs to ensure reliable and sustainable services for the community.

Level of Service: As the City matures in asset management, the City will continue to review the priorities of the City, but currently have established the highest priorities which have been reflected in the level of service metrics within this AMP. This will be further analyzed in the 2025 AMP to determine the targets set by the municipality and continually review their progress.

Lifecycle Management Strategies: The City continues to enhance the development of lifecycle management strategies to provide accurate, and affordable measures to address the infrastructure needs. For wastewater assets for instance, rather than assuming costly replacements at end of life, the City plans to reline pipes where appropriate to improve condition and extend the life of these assets.

Long-Term Planning: The City has reviewed many expert documents, and the infrastructure needs to develop an appropriate plan to address the infrastructure needs over the 20-year period.

Revenue Increases: The City has planned for incremental tax increases, while also applying for grant funding to "catch-up" to the infrastructure needs that have been identified within this AMP, as well as based on recommendations from the previous AMP and Infrastructure Needs Study. The City is also undergoing a Development Charge Study to assist the City in updating development charges so that appropriate funding is available to accommodate growth.

The City has taken a progressive approach to reach their goals to fully fund infrastructure needs and remove the infrastructure gap.

13.3.1 Risks Associated with Lifecycle Strategies

Asset ownership inherently involves various risks, and managing these effectively is a continual challenge for the City. The primary goal is to balance costs, service levels and risk. To address infrastructure needs and minimize asset ownership costs for the community, the strategies outlined in this plan provide the best opportunity to accomplish this. These strategies will evolve as new information becomes available from future plans and studies, and as the City advances its asset management program.

Neglecting infrastructure needs and failing to implement the lifecycle activities and strategies in this plan, can lead to significant immediate and long-term negative consequences. The City is already experiencing many of these due to historically insufficient investment in infrastructure and appropriate lifecycle management strategies. These risks and their consequences at a high level include:

Deterioration of Infrastructure and Asset Failure: Without proper investments for renewal, rehabilitation and replacement activities, infrastructure assets will deteriorate over time, leading to increased breakdowns, service disruptions, and potentially safety hazards.

Decreased Operational Efficiency: Without proper lifecycle management strategies, infrastructure may become inefficient, leading to increased downtime, delays, and reduced productivity.

Increased Costs: Delaying infrastructure investments leads to higher costs in the long run. Deferred maintenance and rehabilitations can result in more extensive reactive maintenance, or the need for premature asset replacements, which are significantly more expensive than timely maintenance and upgrades. Ultimately by not adequately keeping assets in a good state of repair leads to higher lifecycle cost.

Improper Forecasts: Many non-infrastructure activities such as master plans, asset management planning, provide valuable insights into the infrastructure needs, if these activities are no completed, it can lead to inaccurate estimations for funding requirements and capacity requirements.

Service Disruptions: The deterioration of assets often leads to unplanned and unexpected disruptions to the services the community currently enjoys and relies on through asset failures.

Negative Impact to Quality of Life: Poor infrastructure affects the quality of life for residents, including issues like traffic congestion, inadequate public transportation, sewer backups, basement flooding, or lack of access to services. Assets in poor working order also increase the risk of potential healthy and safety impacts.

Environmental Impacts: Inefficient infrastructure can have adverse environmental impacts such as increased emissions from old facility or fleet assets, or sewage reaching the environment through leaks in pipes. This also increases the potential risk of not meeting regulatory requirements.

Regulatory Non-Compliance: Many of the assets, in particular Water and Transportation, are highly regulated assets that require assets to be properly maintained and reported on their compliance. Failure to meet regulatory requirements for infrastructure maintenance and safety can result in fines, penalties, legal actions, and possible loss of licenses or permits.

Loss of Public Trust and Confidence: Persistent neglect of infrastructure needs can erode public trust and undermine confidence in the ability of leaders to address pressing challenges.

Negative Economic Impact: Inadequate infrastructure can hinder economic growth because of inefficient and unreliable services to residents and businesses.

Safety Risks: Aging or poorly maintained infrastructure can pose safety hazards to users, workers, and the surrounding community, potentially leading to accidents, injuries, or even fatalities.

14.0 Improvement and Monitoring Plan

14 Improvement and Monitoring Plan

Continual improvement is essential to ensure effective management of assets. As part of the development of this AMP, opportunities for improvement of asset management practices, and this plan have been identified. Some key points related to the development of this AMP:

- **Asset Management is a Journey**
    - Asset management is not a one-time even but rather an continuous journey. Organizations need to adapt and evolve their practices over time.
    - Regular assessments, data collection and analysis help identify areas for improvement.
- **Based on Best Available Information**
    - This AMP has been developed on the most up-to-date information available, in coordination with multiple City departments and staff, and systems.
    - This included data on asset information and condition, performance, and financial considerations.
- **Opportunities for Improvement**
    - Stakeholders should actively seek opportunities for enhancement which may arise from lessons learned or technological advancements.

When establishing an improvement plan, the following international standards and well-known asset management guidance for advancing asset management capabilities are considered:

- **ISO 55000**
- **International Infrastructure Management Manual (IIMM) 2015**
- **BSI PAS55: 2008**

These standards were developed over several years with international collaboration and are widely regarded as best practices for the field of asset management.

14.1 Recommendations from 2022 AMP Update

An overview of the recommendations from the 2022 AMP and their status can be found below in Table 14-1. It is recommended that the City continue its progress on implementing these recommendations.

Table 14-1. Status of 2022 AMP Recommendations

Recommendation	Status
State of the Infrastructure • Improvements to asset hierarchy and inventories and refinement of the processes for managing them. • Continue to improve knowledge of asset replacement costs and current conditions.	On-going
Levels of Service • Further refine current LOS statements and add advanced metrics. • Improve how the data is collected and tracked.	Further refinement of LOS was completed for the purposes of this AMP. Remainder of recommendations are outstanding.
Lifecycle Management Strategies • Refinements to forecasted lifecycle activities. • Define deterioration curves based on current lifecycles. • Risk framework for non-core assets.	On-going
Financial Strategy • Overall improvements to data confidence and lifecycle activities will improve forecast reliability. • Incorporate growth into future AMPs.	Further improvements required for defining lifecycle activities in budget process and tracking. Future studies will further identify growth needs for the City for inclusion in AMP
Asset Management Resources • That the City dedicate a champion, personnel or team to implement the AMP.	Outstanding
Information Systems • Align various asset inventories to improve consistency of data across the organization.	Outstanding

Recommendation	Status
Asset Data • Asset hierarchy development • Asset data improvements • Condition assessment programs • Public availability of data	Updated condition and asset data was completed prior to the development of this AMP. The City needs to define and document processes for condition assessment, data collection, business processes, protocols, and roles and responsibilities.

14.2 2024 AMP Opportunities for Improvement

Further to the recommendations from the previous AMP, the following recommendations have been compiled throughout the development of the 2024 AMP. Recommendations from the previous AMP still apply and the City should make efforts to address the previous recommendations as well as the items identified below.

Key recommendations have been categorized to organize efforts related to asset management into:

- **Asset Management Requirements:** key documentation that defines the governance, objective and direction of the AM practices;
- **Decision Making Strategies:** tools that support decision making with a full asset lifecycle perspective; and
- **Asset Management Enablers:** processes and resources available to ensure asset management remains a well-established component of successful service delivery.

The following sections provide an overview of the recommendations and opportunities for improvement for the City of Port Colborne to guide strategic decisions for the City to continually improve their asset management program and future iterations of the AMP.

14.2.1 Asset Management Requirements

14.2.1.1 O.Reg. 588/17 Policy Compliance

The City's asset management strategy and policy were developed in 2019. As per O.Reg. 588/17, this document is required to be updated every 5 years. It is recommended the City review and update this document in 2024 to meet the regulation. Important considerations for this document include:

- Policy Statements – review progress and update policy statements.
- Roles and Responsibilities – having clear responsibilities for stakeholders and their involvement in asset management is key to ensuring continued improvement to the asset management program within the City.

- It is recommended the City further establish an asset management "Champion(s)" to further corporate buy-in.
- Further clarify roles and responsibilities for departmental staff for specific staff with tasks for their role in the organization.

- Document Goals – establish clear goals and timelines for the City's asset management program to align with the strategic objectives of the City.

Key Benefit/Outcomes: An updated policy and roles and responsibilities will improve corporate buy-in, as well as further advance the asset management program in the City having responsibilities of specific staff roles documented. The City currently does not have any staff dedicated to asset management, and all work is being completed piecemeal to meet the minimum requirements of the regulation.

14.2.1.2 O.Reg. 588/17 Asset Management Plan Compliance

An overview of the status of the City's compliance for asset management plans based on O.Reg. 588/17 can be found in Table 14-2.

Table 14-2. O.Reg. 588/17 Asset Management Plan Compliance

Section	Regulation Requirement	Compliant Check
5.(1)	**Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2022, and in respect of all of its other municipal infrastructure assets by July 1, 2024.**	Yes
5. (2)	**A municipality's asset management plan must include the following:**	
5. (2) 1.	For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan	Yes
5. (2) 1. i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	Yes
5. (2) 1. ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	Yes

Section	Regulation Requirement	Compliant Check
5. (2) 2.	The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan	Yes
5.(2) 3.	For each asset category,	Yes
5.(2) 3. i.	A summary of the assets in the category,	Yes
5.(2) 3. ii.	The replacement cost of the assets in the category,	Yes
5.(2) 3. iii.	The average age of the assets in the category, determined by assessing the average age of the components of the assets,	Yes
5.(2) 3. iv.	The information available on the condition of the assets in the category, and	Yes
5.(2) 3. v.	A description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.	Yes
5.(2) 4.	For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service as described in paragraph 1 for each of the 10 years following the year for which the current levels of service under paragraph 1 are determined and the costs of providing those activities based on an assessment of the following:	Yes
5.(2) 4. i.	The full lifecycle of the assets	Yes
5.(2) 4. ii.	The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.	Yes
5.(2) 4. iii.	The risks associated with the options referred to in subparagraph ii.	Yes

Section	Regulation Requirement	Compliant Check
5.(2) 4. iv.	The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.	Yes
5.(2) 5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:	Yes
5.(2) 5. i.	A description of assumptions regarding future changes in population or economic activity.	Yes
5.(2) 5. ii.	How the assumptions referred to in subparagraph i relate to the information required by paragraph 4.	Yes
5.(2) 6.	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following:	N/A
5.(2) 6. i.	With respect to municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are set out in Schedule 3 or 7 to the 2017 Growth Plan, those forecasts.	N/A
5.(2) 6. ii.	With respect to lower-tier municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are not set out in Schedule 7 to the 2017 Growth Plan, the portion of the forecasts allocated to the lower-tier municipality in the official plan of the upper-tier municipality of which it is a part.	N/A
5.(2) 6. iii.	With respect to upper-tier municipalities or single-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the municipality that are set out in its official plan.	N/A
5.(2) 6. iv.	With respect to lower-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the lower-tier municipality that are set out in the official plan of the upper-tier municipality of which it is a part.	N/A

Section	Regulation Requirement	Compliant Check
5.(2) 6. v.	If, with respect to any municipality referred to in subparagraph iii or iv, the population and employment forecasts for the municipality cannot be determined as set out in those subparagraphs, a description of assumptions regarding future changes in population or economic activity.	N/A
5.(2) 6. vi.	For each of the 10 years following the year for which the current levels of service under paragraph 1 are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets.	Yes
5. (3)	Every asset management plan must indicate how all background information and reports upon which the information required by paragraph 3 of subsection (2) is based will be made available to the public.	Yes
5. (4)	In this section, “2017 Growth Plan” means the Growth Plan for the Greater Golden Horseshoe, 2017 that was approved under subsection 7 (6) of the Places to Grow Act, 2005 on May 16, 2017 and came into effect on July 1, 2017; (“Plan de croissance de 2017”) “Greater Golden Horseshoe growth plan area” means the area designated by section 2 of Ontario Regulation 416/05 (Growth Plan Areas) made under the Places to Grow Act, 2005	
6. (1)	**Asset management plans, proposed levels of service** **Subject to subsection (2), by July 1, 2024 (2025), every asset management plan prepared under section 5 must include the following additional information:**	2025 AMP

Section	Regulation Requirement	Compliant Check
6. (1) 1.	For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following the year in which all information required under section 5 and this section is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics:	2025 AMP
6. (1) 1. i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	2025 AMP
6. (1) 1. ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	2025 AMP
6. (1) 2.	An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality, based on an assessment of the following:	2025 AMP
6. (1) 2. i.	The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality.	2025 AMP
6. (1) 2. ii.	How the proposed levels of service differ from the current levels of service set out under paragraph 1 of subsection 5 (2).	2025 AMP
6. (1) 2. iii.	Whether the proposed levels of service are achievable.	2025 AMP
6. (1) 2. iv.	The municipality's ability to afford the proposed levels of service.	2025 AMP
6. (1) 3.	The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.	2025 AMP

Section	Regulation Requirement	Compliant Check
6. (1) 4.	A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period referred to in paragraph 1:	2025 AMP
6. (1) 4. i.	An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:	2025 AMP
6. (1) 4. i. A.	The full lifecycle of the assets.	2025 AMP
6. (1) 4. i. B.	The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.	2025 AMP
6. (1) 4. i. C.	The risks associated with the options referred to in sub-subparagraph B.	2025 AMP
6. (1) 4. i. D.	The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.	2025 AMP
6. (1) 4. ii.	An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.	2025 AMP
6. (1) 4. iii.	An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.	2025 AMP
6. (1) 4. iv.	If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,	2025 AMP
6. (1) 4. iv. A.	An identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and	2025 AMP
6. (1) 4. iv. B.	If applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.	2025 AMP

Section	Regulation Requirement	Compliant Check
6. (1) 5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity, set out in subparagraph 5 i of subsection 5 (2), informed the preparation of the lifecycle management and financial strategy referred to in paragraph 4 of this subsection.	2025 AMP
6. (1) 6.	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,	2025 AMP
6. (1) 6. i.	The estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 in order to accommodate projected increases in demand caused by population and employment growth, as set out in the forecasts or assumptions referred to in paragraph 6 of subsection 5 (2), including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets,	2025 AMP
6. (1) 6. ii.	The funding projected to be available, by source, as a result of increased population and economic activity, and	2025 AMP
6. (1) 6. iii.	An overview of the risks associated with implementation of the asset management plan and any actions that would be proposed in response to those risks.	2025 AMP
6. (1) 7.	An explanation of any other key assumptions underlying the plan that have not previously been explained.	2025 AMP
6. (2)	With respect to an asset management plan prepared under section 5 on or before July 1, 2021, if the additional information required under this section is not included before July 1, 2023, the municipality shall, before including the additional information, update the current levels of service set out under paragraph 1 of subsection 5 (2) and the current performance measures set out under paragraph 2 of subsection 5 (2) based on data from the two most recent calendar years.	2025 AMP

Section	Regulation Requirement	Compliant Check
7. (1)	Every municipality shall review and update its asset management plan at least five years after the year in which the plan is completed under section 6 and at least every five years thereafter.	N/A until after 2025 AMP
7. (2)	The updated asset management plan must comply with the requirements set out under paragraphs 1, 2 and 3 and subparagraphs 5 i and 6 i, ii, iii, iv and v of subsection 5 (2), subsection 5 (3) and paragraphs 1 to 7 of subsection 6 (1).	N/A until after 2025 AMP
8	Every asset management plan prepared under section 5 or 6, or updated under section 7, must be,	Yes
8.(a)	Endorsed by the executive lead of the municipality; and	Yes upon endorsement of executive lead
8.(b)	Approved by a resolution passed by the municipal council.	Yes upon approved resolution passed by municipal council
9. (1)	Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed under section 6.	N/A until after 2025
9. (2)	The annual review must address,	N/A until after 2025
9. (2) (a)	The municipality's progress in implementing its asset management plan;	N/A until after 2025
9. (2) (b)	Any factors impeding the municipality's ability to implement its asset management plan; and	N/A until after 2025

Section	Regulation Requirement	Compliant Check
9. (2) (c)	A strategy to address the factors described in clause (b).	N/A until after 2025
10.	Every municipality shall post its current strategic asset management policy and asset management plan on a website that is available to the public, and shall provide a copy of the policy and plan to any person who requests it.	Yes

14.2.2 Decision Making Strategies

14.2.2.1 Master Servicing Plans (MSPs)

The aim of Master Servicing Plans (MSPs) is to develop a long-term servicing strategy to accommodate planned growth over a 25-year time horizon. The servicing strategy is typically comprised of hard infrastructure solutions (e.g. sewer upgrades, watermain upgrades, facility upgrades), supply/demand management, and operational improvements. The primary objectives of the MSPs are:

- Update hydraulic models using up-to-date field data (GIS, water demands, flow meters, etc.).
- Assess existing system performance with existing demands to identify existing system constraints.
- Establish growth data with planning department.
- Assess existing system performance with future demands to identify growth related constraints.
- Develop servicing strategy.
- Create capital program.

Key Benefit/Outcomes: The MSPs will be key inputs into the AMP as they will allow for corridor planning, prioritized replacement program based on capacity needs, and identify infrastructure upgrade needs, which should be incorporated into infrastructure renewal decisions.

14.2.3 Asset Management Enablers

The recommendations from the previous AMP accurately reflect the current needs of the City and many have been restated here to highlight their importance to the asset management program.

14.2.3.1 Asset Management Maturity Assessment

Conducting a full AM maturity assessment as a baseline to set a target maturity for the future and update it on a set frequency to understand progress against targets.

Key Benefit/Outcomes: Provides a baseline to understand where the City is, and where they would like to get will help the development of an asset management road map to further understand the work required to establish the City's asset management program.

14.2.3.2 Establish Asset Management System & Road Map

An asset management road map is designed to assist an organization identify and implement their asset management program, or system by defining key steps and projects to enhance the asset management program in the City.

Key Benefit/Outcomes: Based on the desired state of asset management maturity for the City, the road map will clearly define key projects to undertake to provide improved decision-making and investment prioritization within the City.

14.2.3.3 Business Processes

This includes reviewing current processes and explicitly defining tasks, decision points, inputs and outputs, as well as roles and responsibilities. This not only applies to asset management processes, but data, work, condition assessment programs and lifecycle management as well.

Data collection, protocols, schedules and roles and responsibilities are required for all areas.

Key Benefit/Outcomes: Business processes that support data-driven, defensible, and strategic decision-making, as well as actionable responsibilities to ensure appropriate accountability for data management and tasks required.

14.2.3.4 Information Systems & Asset Data

The City maintains two main asset inventories within their GIS and Citywide systems. While these inventories serve different purposes, finding a way to better align these inventories will help to improve consistency of data across the organization.

Through the development of the 2024 AMP, multiple data sources were merged to provide inventories of the remaining asset classes not previously reported on in the 2022 AMP. Many of the inventories were developed for the purposes of this AMP (i.e. Parks).

Opportunities for improvement include:

- Asset hierarchy development
- Asset data improvements
    - Review and develop consistent methods for determining data fields that may change over time (i.e. Replacement value).
    - Review and update basic asset information where possible, such as installation dates, to improve accuracy and precision.

- It is recommended that the City define develop and define appropriate asset repositories and document the “source-of-truth” for all assets and their condition information with the appropriate business processes in place to ensure the registers are continuously updated for improved reporting and asset management purposes.

- Condition assessment programs
  - Review condition assessment/data collection business processes, protocols, schedules, and roles and responsibilities to ensure data collected from these programs can be linked to the inventory and used to drive decision making.
- Public availability of data
  - There currently is no public GIS or open data portal for the public to be able to access information on the background information included in this AMP.
- Improved Systems and Access to Information for Staff
  - Many systems in place that house asset data have duplication, data gaps, or outdated information, are not integrated with other expert systems to provide holistic information on assets.
  - To ensure staff can perform their duties effectively and efficiently, it is essential to establish clear definitions and systems for the “source-of-truth” for all assets. Currently, the lack of proper business processes and systems to house asset information leads to confusion, inefficiency, and the need to review multiple sources of information to find the necessary answers.

Key Benefit/Outcomes: Asset data and systems are fundamental to asset management as they provide the necessary information and tools to manage assets effectively, mitigate risks, optimize costs, ensure compliance, and support strategic decision-making and planning.

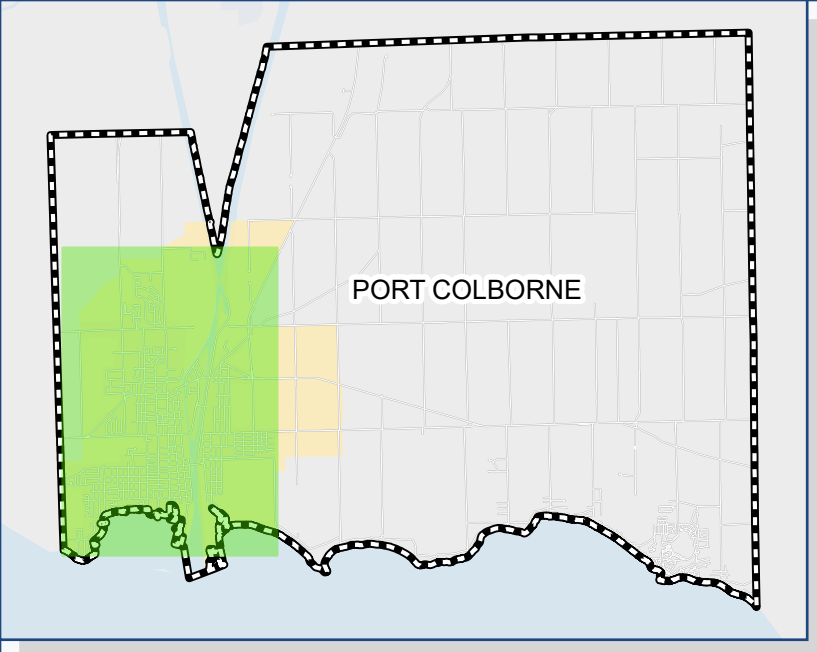
14.2.3.5 Integration of Asset Management with Budget Process

For the City to better understand the full lifecycle cost of their assets, it is important to begin tracking the operating and capital budget to the services that are provided and the lifecycle categories. It is also important to tie the asset management process to the budget process to continue tying the infrastructure needs and levels of service to the budget process.

Key Benefit/Outcomes: This will ensure that repeatable and accurate analysis of the City’s budgets can be used to better understand the full lifecycle of the City’s assets.

Appendix A:
Wastewater Scope Map

PORT COLBORNE



THIRD CONCESSION ROAD
PROGRESS DRIVE NORTH
HIGHWAY 140
BABION ROAD
WEST SIDE ROAD
CHIPPAWA ROAD
RAMEY ROAD
BARRICK ROAD
SECOND CONCESSION ROAD
SNIDER ROAD
BARBER DRIVE
MINOR ROAD
MAIN STREET EAST
WELLAND STREET
KILLALY STREET EAST
DURHAM STREET
CEMENT ROAD
KING STREET
LAKE ROAD
REUTER ROAD
LORRAINE ROAD
LAKESHORE ROAD EAST

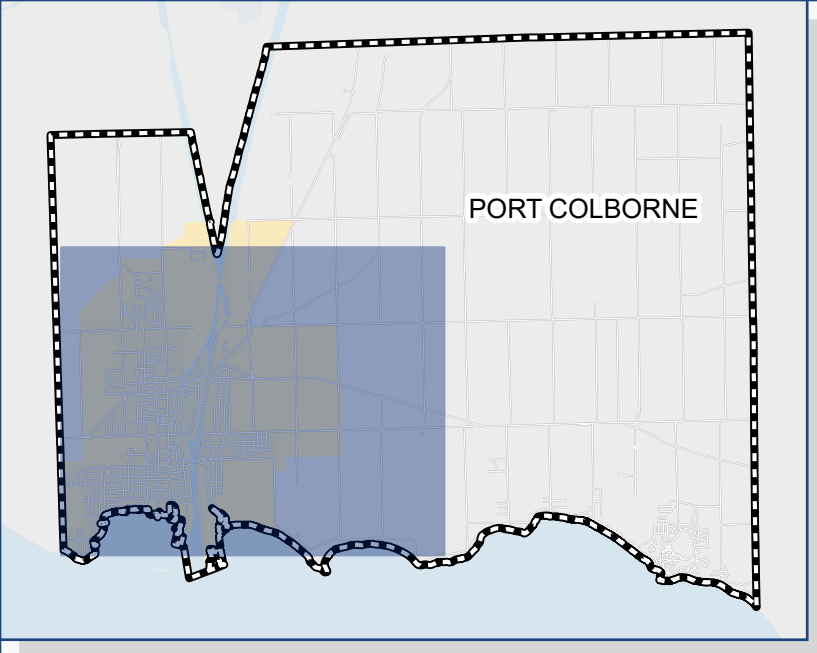
0 950
m

Wastewater Main
Urban Area Boundary

PORT COLBORNE

Appendix B:
Water Scope Map

PORT COLBORNE



THIRD CONCESSION ROAD
PROGRESS DRIVE NORTH
HIGHWAY 140
BABION ROAD
CHIPPAWA ROAD
SNIDER ROAD
BARBER DRIVE
MINOR ROAD
MAIN STREET EAST
WELLAND STREET
KILLALY STREET EAST
DURHAM STREET
REUTER ROAD
LORRAINE ROAD
LAKE ROAD
LAKESHORE ROAD EAST

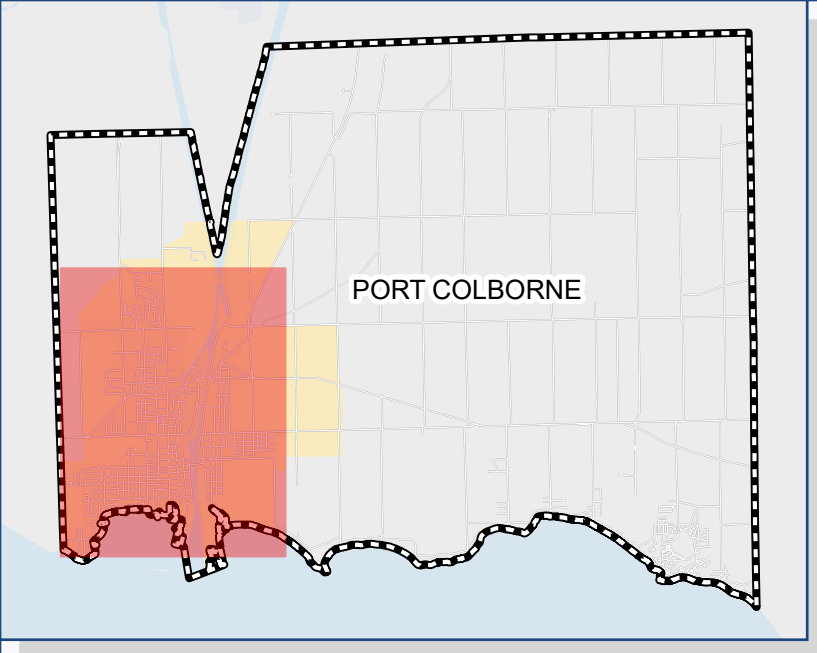
0 950
m

Water Hydrant
Water Main
Urban Area Boundary

PORT COLBORNE

Appendix C:
Stormwater Scope Map

PORT COLBORNE



INVERTOSE DRIVE
HIGHWAY 140
SNIDER ROAD
Welland Canal
ELM STREET
RAMEY ROAD
SECOND CONCESSION ROAD
Haw horne Park
BARRICK ROAD
BARBER DRIVE
CHIPPAWA ROAD
Port Colbo ne Mall
Reservoir Park
MINOR ROAD
MAIN STREET EAST
WELLAND STREET
Lock 8 Gate Park
Elizabeth Street Park
ELIZABETH STREET
Vimy Park
Port Colborne Humberston Arena
OAKWOOD STREET
MAIN STREET WEST
STEELE STREET
DURHAM STREET
REUTER ROAD
CEMENT ROAD
Port Colborne (General Hospital)
MARINA DRIVE
KING STREET
LAKE ROAD

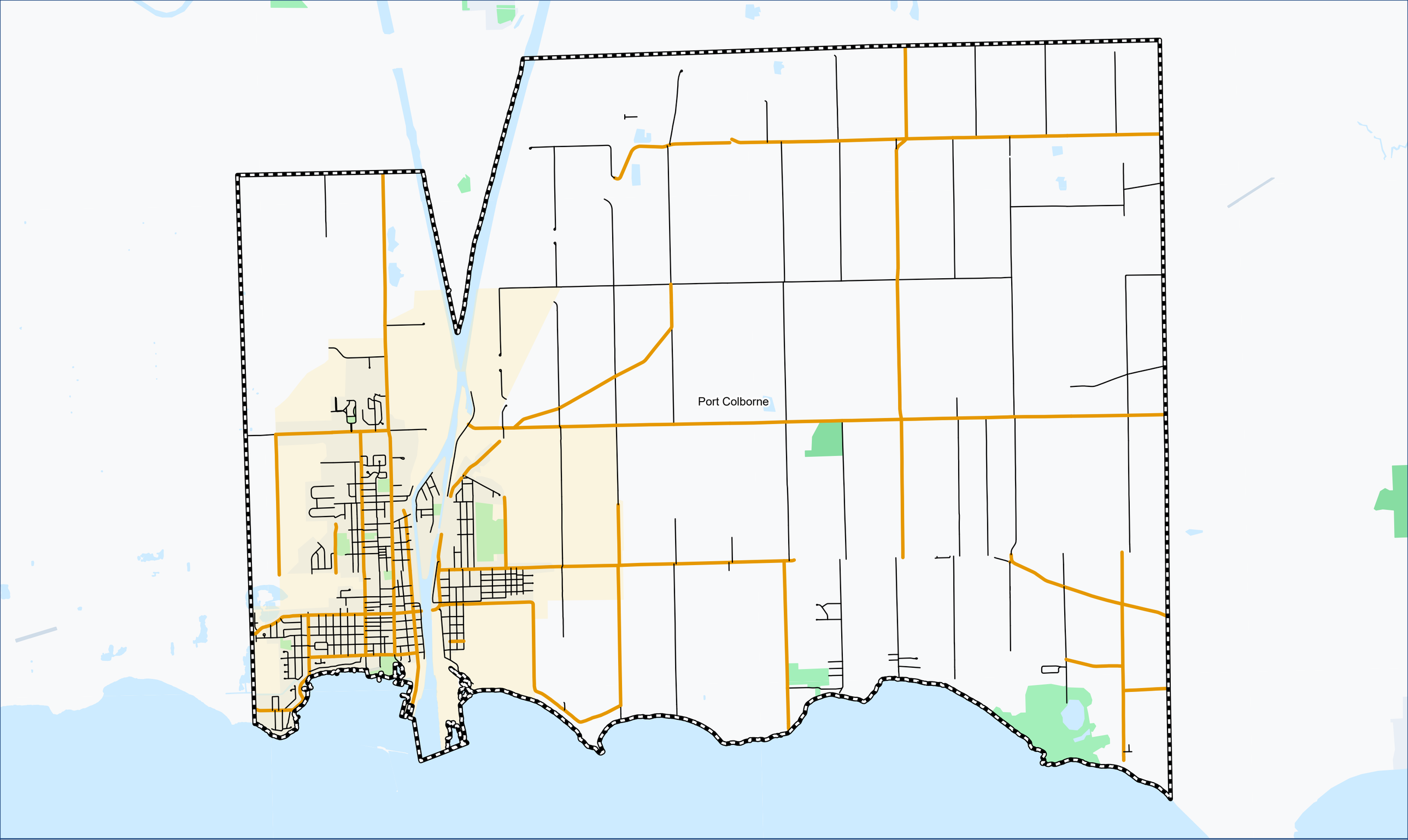
0 750
m

Storm Main
Urban Area Boundary

PORT COLBORNE

Appendix D: Transportation Scope Map (Road Class)

PORT COLBORNE



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m

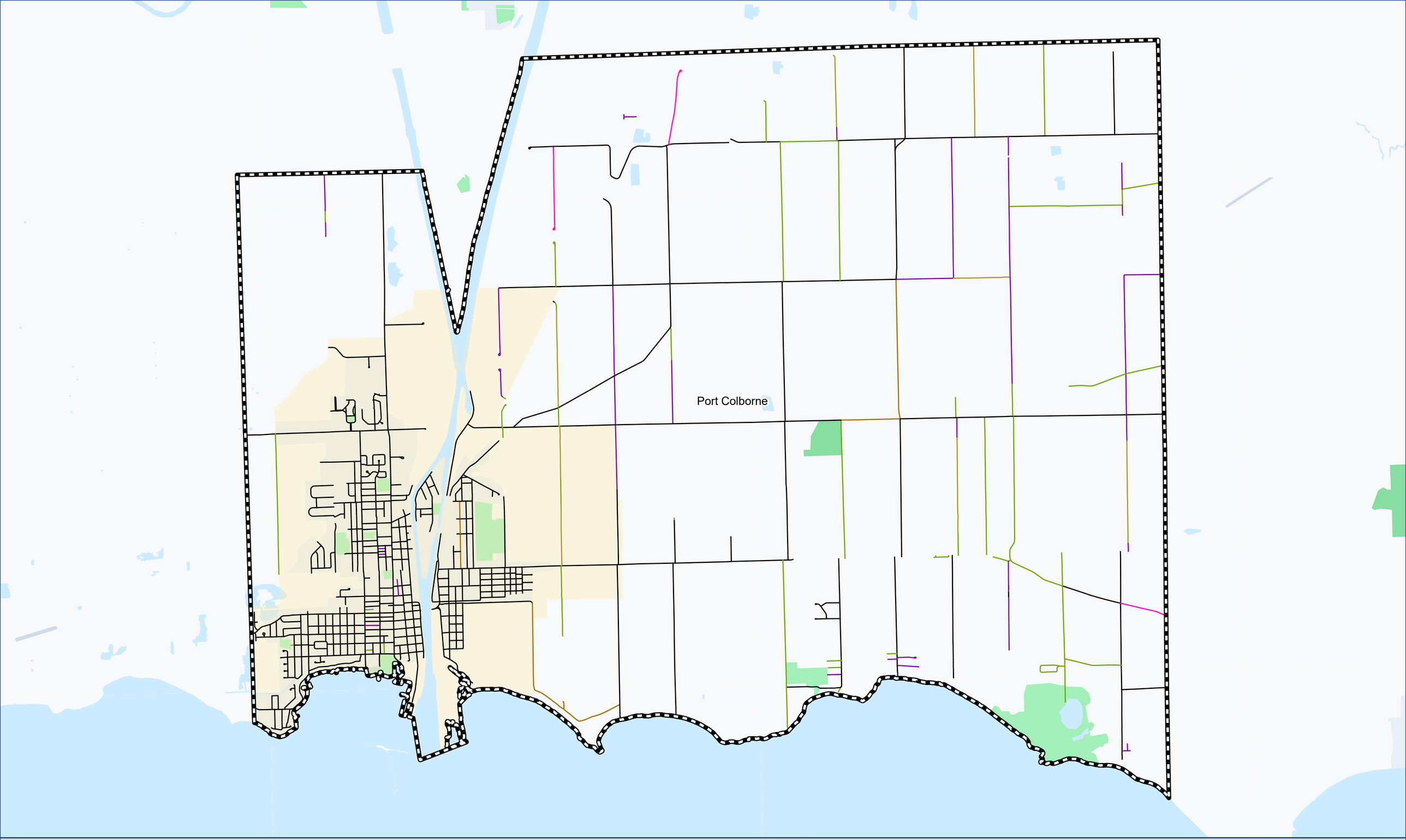
Road Class
Arterial
Local

Urban Area Boundary
Municipal Boundary

PORT COLBORNE

Appendix E: Transportation Quality Map (Surface Type)

PORT COLBORNE



0 1000
m

Road Surface Type
- Fibre Mat
- Gravel
- Hot Mix
- Proposed Road
- Surface Treatment
- Unimproved
- Recycled Asphalt Pavement
- Urban Area Boundary
- Municipal Boundary

PORT COLBORNE

PORT COLBORNE