City of Niagara Falls
2024 Asset Management Plan
Non-Core Assets
Current Levels of Service

Prepared by
SLBC Inc.
May 2024
Rev. 2

ENDORSEMENT PAGE

Endorsement

This document entitled City of Niagara Falls 2024 Asset Management Plan Non-Core Assets Current Levels of Service has been developed to meet the requirements set forth in Ontario Legislation O.Reg 588/17: Asset Management Planning for Municipal Infrastructure.

I, Jason Burgess endorse the City of Niagara Falls 2024 Asset Management Plan Non-Core Assets Current Levels of Service Report prepared by City Staff and SLBC Advisory Services Inc. As Chief Administrative Officer of the City of Niagara Falls, I acknowledge the accuracy and significance of the findings presented in this document.

Signature: Jason Burgess

Jason Burgess, CAO City of Niagara Falls

Date: June 7, 2024

Executive Summary

The City of Niagara Falls (the City) provides a range of services to its residents, businesses and visitors, including parks and recreation, culture, libraries, cemeteries, fire protection, transportation (road operations, traffic, parking) and municipal administration services, such as by-law enforcement and development planning. This Asset Management Plan (AM Plan) identifies the asset lifecycle actions needed to sustain the current Levels of Service (LOS) for the City's non-core assets over the next 10 years, and their forecast costs. Risks associated with the current funding level are identified, and mitigations recommended. This AM Plan fulfils the requirements of the Ontario Regulation (O.Reg.) 588/17 Asset Management Planning for Municipal Infrastructure for Current LOS for July 2024.

Non-Core Asset Inventory

The estimated replacement value of the non-core assets included in this AM Plan is **$524.9 million** (2024$), as shown in Table ES-1. The Table includes a breakdown of the inventory by service area and a list of asset categories included.

Table ES-1: Inventory of City's Non-Core Assets

Service Area	Asset Categories	Replacement Value ($2024, millions)	Proportion of Value of Non-Core Assets (%)
Transportation Services	Streetlights, Barriers, Architectural Features, Beautification & Street Furniture, Signage, Traffic Signals, Traffic Control, Traffic Calming, Parking Lots, Parking Meter, Equipment, Fleet, Facilities, Poles,	$99.9	19.1%
Parks and Trails	Amenities/Furniture, Aquatic Features, Parkland, Recreation Spaces, Playgrounds, Equipment, Fleet, Trails and Pathways, Facilities, Signage, Site Works	$80.8	15.5%
Natural Assets	Trees, Woodlots, Wetlands & Watercourses, Signage & Wayfinding, Equipment, Fleet	$38.5	7.4%
Municipal Administration	Information Technology, Fleet, Facilities	$64.1	11.7%
Recreation Services	Fleet, Facilities	$134.6	25.8%
Cultural Services	Fleet, Facilities	$45.8	8.8%
Fire Services	Equipment, Fleet, Facilities	$53.8	10.3%
Cemetery Services	Equipment, Fleet, Cemetery Systems, Facilities	$7.4	1.4%
Total		**$524.9**	**100.0%**

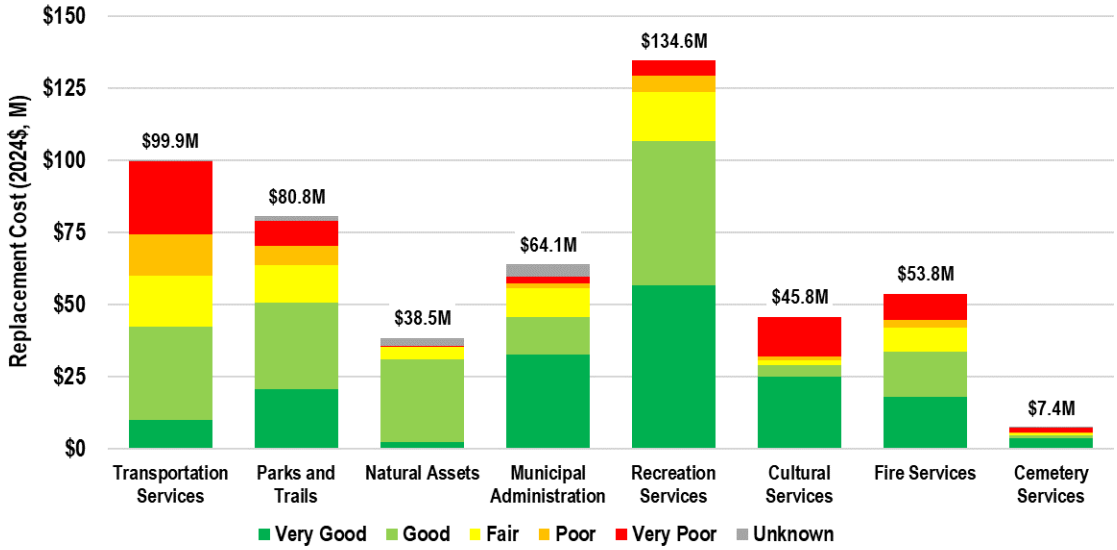
The table excludes assets supporting services that are managed by separate boards, such as Niagara Public Library which is supported by assets valued at $22.1 million (see Appendix A). In addition, the City owns one third ($9.2 million) of the $27.7 million worth of assets used by the Niagara District Airport (see Appendix B). The Niagara Falls

Convention Centre (NFCC), with an estimated replacement cost of $201.2 million, is also owned by the City but managed by a separate board.

State of Infrastructure

The current condition distribution of the City's non-core assets is shown in Figure ES-1 below, by Service Area. Overall, $416 million (81%) of the City's non-core assets are in Fair condition or better, $33 million (6%) are in Poor condition, which means they are nearing their end of life, and $66 million (13%) are in Very Poor condition, which means that they are due or overdue for replacement.

Figure ES-1: Condition Distribution of the City's Non-Core Assets



Note that the renewal and rehabilitation analysis discussed in the Lifecycle Management section below excludes $9.1 (2%) million of assets with unknown condition either because the install date is not known, or a condition assessment has not yet been undertaken. Steps will be taken to fill these knowledge gaps as the City progresses in their AM journey. Knowing the condition of assets is important to understanding the risks and costs of meeting stated service delivery objectives. Most of the assets of unknown condition are facilities without formal condition assessments, natural assets, and park assets.

Levels of Service

Community and Technical LOS were defined for each service area in alignment with the City's strategic priorities. One of the main drivers for renewal decision-making, common across all service areas, is for assets to be "fit for service". Assets not fit for service have been identified as assets which are at or past their service life or are in Very Poor condition. Table ES-2 below summarizes the "fitness" of assets for service for each Service Area.

Table ES-2: Levels of Service – Fit for Service

Service Area	Community Level of Service	Technical Level of Service	Current Performance	
			2024 $, millions	% inventory value
Transportation Services	Quality: Assets are fit for service	% assets in Very Poor Condition (due or overdue for replacement) by Replacement Value	$25.1	25.2%
Parks and Trails			$8.7	11.0%
Natural Assets			$0.0	0.1%
Municipal Administration			$2.6	4.5%
Recreation Services			$5.2	3.9%
Cultural Services			$13.9	30.4%
Fire Services			$9.2	17.1%
Cemetery Services			$1.4	19.0%
Overall Non-Core			**$66.2**	**12.9% of total inventory value**

Other LOS measures related to Capacity and Use, Function and Reliability are explored within each individual Service Area subsection within the AM Plan. Where sufficient data is not available to determine the City's current performance, the City will be collecting data and monitoring performance. In the 2025 LOS AM Plan, Proposed LOS and a corresponding financial plan will be established.

Risk Management

Based on those assets with known condition, Figure ES-2 shows that $45.3 million or 8.7% of the City's non-core assets are in the Very High-risk exposure category related to provision of reliable services. The percentage excludes approximately $9.1 million of assets with unknown condition (probability of failure). The City mitigates its exposure to these risks through the planned lifecycle strategies, such as renewal and maintenance.

Figure ES-2: Risk Exposure of the City's Non-Core Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$1.68	$17.51	$4.38	$34.61	$8.00
Likely	$0.42	$14.14	$2.72	$13.55	$2.72
Possible	$0.87	$38.14	$4.74	$23.04	$4.50
Unlikely	$6.18	$113.61	$11.01	$37.83	$6.41
Rare	$3.60	$84.74	$30.24	$43.14	$7.95

Consequence of Failure

Risk Exposure Ratings

Very High	$45.3	8.7%
High	$48.2	9.2%
Moderate	$139.4	26.6%
Low	$188.3	35.9%
Very Low	$94.5	18.0%
Unknown	$9.1	1.7%
TOTAL	**$524.9**	**100.0%**

Risks related to capacity and upgrade needs are being examined through Master Servicing Plans (MSP) and Transportation Master Plan (TMP), which are currently under development. Needs identified through the studies will be incorporated into the 2025 AM Plan.

Lifecycle Management

Renewal and Rehabilitation

The renewal needs forecasts consider the asset's current condition or age, the City's planned rehabilitation and replacement activities, as well as the recommended improvements from specific studies such as the building condition assessments (BCAs). Asset renewal needs are triggered by code compliance, condition, age, or other performance measures. If installation date and condition are missing, renewal needs are included as an average annual reinvestment rate (same investment each year) based on asset value and useful life.

Figures ES-3 to ES-6 below present renewal and condition forecasts for two scenarios:

1) **Maintaining the Current LOS Scenario (Figures ES-3 and ES-4):**

   This scenario shows renewal activities that would be required to prevent the current renewal backlog from growing.

2) **Unconstrained Budget Scenario (Figures ES-5 and ES-6):**

   This scenario shows the renewal activities that would be conducted if assets were renewed immediately upon reaching end of asset life. The unconstrained renewal funding scenario is aspirational since most municipalities do not have sufficient resources to support this level of service. In fact, this funding level would significantly improve the City's LOS performance for Asset Service Condition by eliminating the renewal backlog.

Maintaining the Current LOS Scenario

The average annual renewal needs to **maintain the current LOS** (% assets at or past service life) for the next 10 years is **$11.1 million/year**. The anticipated annual renewal funding for the same period is **$6.9 million/year** as described in the Financing Strategy. This results in a renewal funding gap of **$4.2 million/year** for each of the next 10 years to maintain the current LOS.

Figure ES-3: Infrastructure Renewal Needs – Maintaining Current LOS Scenario

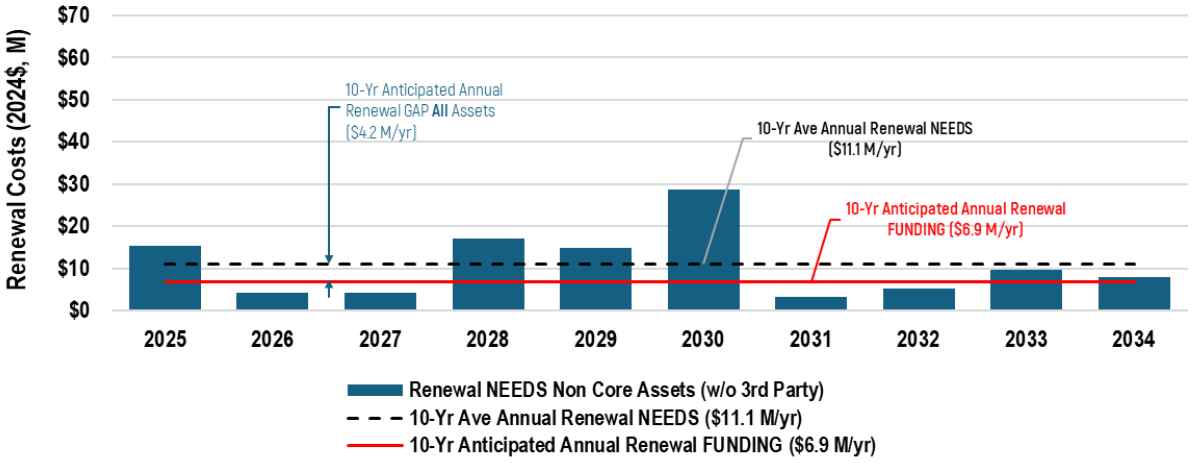
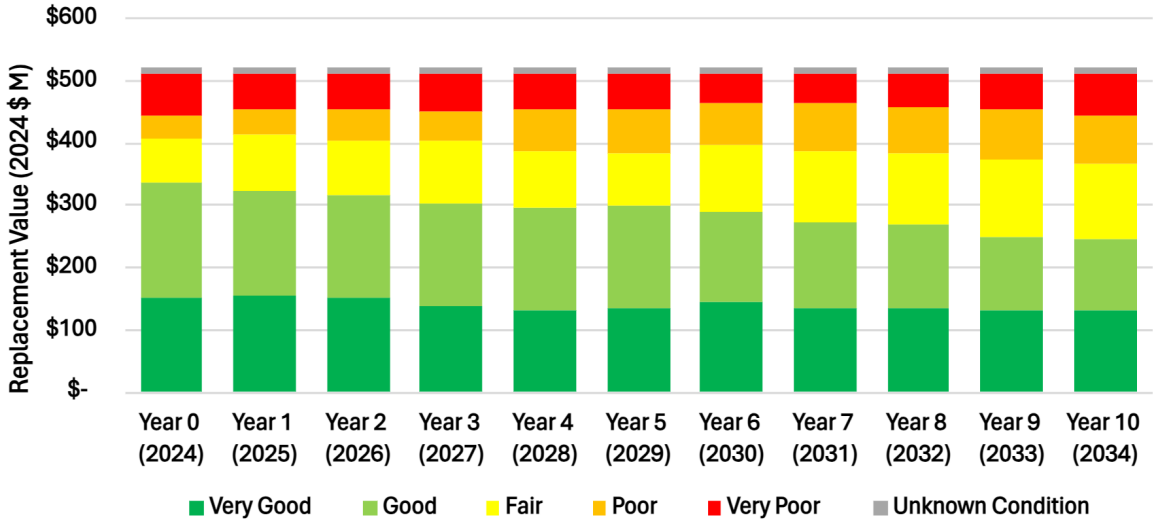


Figure ES-4 below shows the forecast condition distribution associated with funding the renewal needs, as shown by the dashed line in Figure ES-3 (Maintaining Current LOS Scenario). The plot shows that the City's current LOS is maintained over the next ten years with $11.1M/year in funding. As the anticipated available funding of $6.9M/year is not sufficient to maintain the current LOS, the City will see increasing quantities of very poor assets over time. If assets are not renewed when they reach end-of-life, their probability of failure increases. Depending on the asset type and failure context, an asset failure may result in various negative impacts, such as service disruptions, injuries to employees or the public, and reputational harm to the organization.

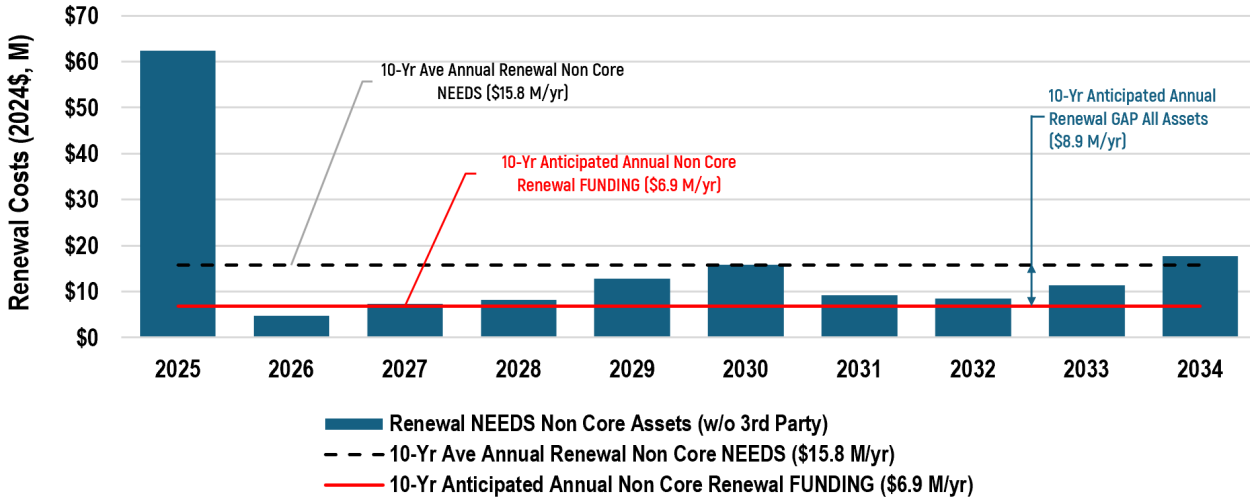
Figure ES-4: Condition Forecast, Maintain Current LOS (Renewal Backlog) Scenario



Unconstrained Budget Scenario

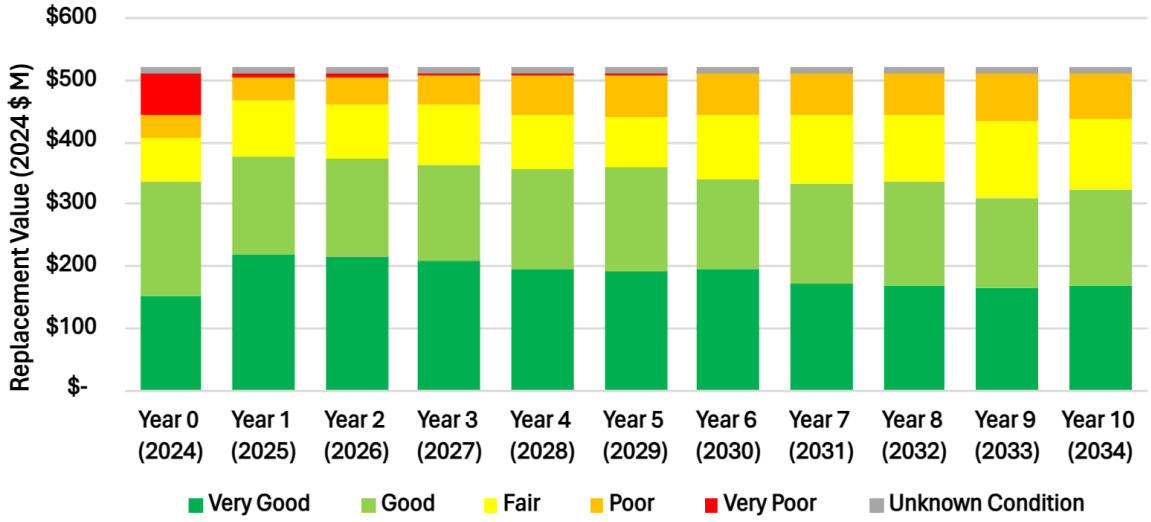
The average annual renewal needs to **eliminate the current (2025) backlog** of **$62 million** and to undertake renewal activities over the following nine years as and when required is **$15.8 million/year**. As with the previous scenario, the anticipated annual renewal funding for the same period is **$6.9 million/year**. This results in an average annual renewal funding gap of **$8.9 million/year** for each of the next 10 years. Figure ES-5 shows this scenario.

Figure ES-5: Infrastructure Renewal Needs – Unconstrained Budget Scenario



The resulting condition distribution over the next 10 years for this scenario is shown in Figure ES-6 as seen in the unconstrained scenario. Unlike the maintain LOS scenario, the City's backlog of assets is cleared immediately in the first year and not permitted to return.

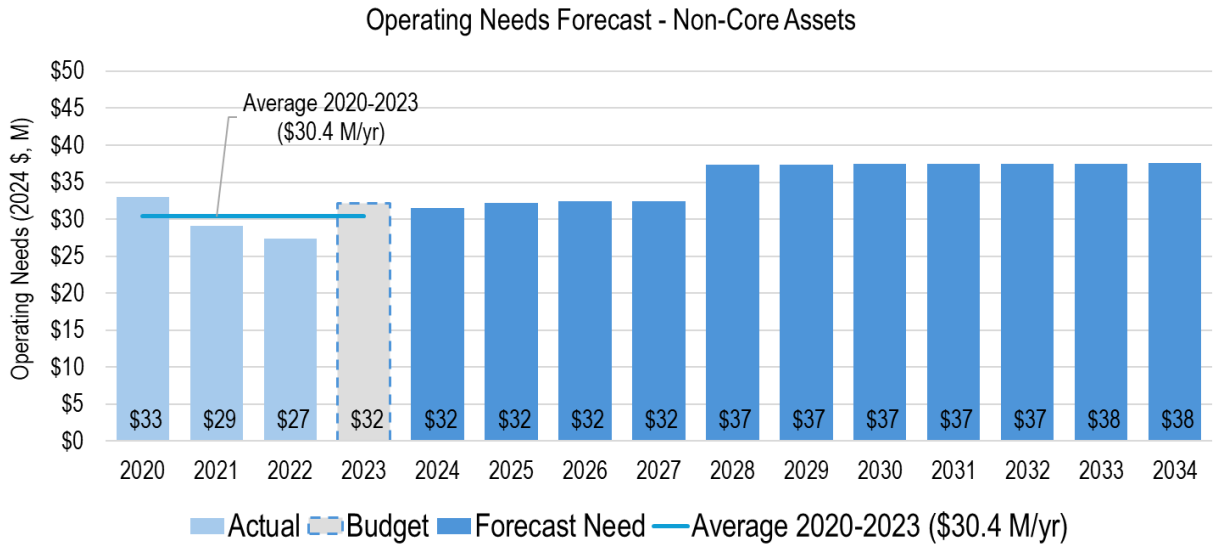
Figure ES-6: Condition Forecast, Unconstrained Planned Lifecycle Scenario



Operations and Maintenance

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are expected to increase. Conversely, if assets are disposed of (without being replaced), the forecast operation and maintenance costs are expected to decrease. Figure ES-7 shows the forecast operations and maintenance costs for the next 10 years.

Figure ES-7: Operations and Needs Forecast



The figure shows that the estimated annual costs are expected to increase from a 2020-2023 average of $30.4 million/year to $38 million/year in 2034. All values are shown in 2024 $. Forecast increases in operations and maintenance needs are due to estimated growth in the asset portfolio as indicated in the **City's Capital Projects List**, including planned opening of the **new parking garage** and the **new operations centre**. Operational needs associated with the planned expansion of **cemeteries** are not included in Figure ES-7, because the design of the future cemeteries is not yet known.

Operations and maintenance needs are assumed to increase proportionally with the increase in the replacement value of the asset portfolio by asset type (i.e. facilities, vehicles, equipment). The estimate of operations and maintenance cost increases can be refined by conducting more detailed analysis of operating costs and work order costs, for example, by asset sub-types or by maintenance activity.

For the period 2025-2034, the annual operating and maintenance costs are expected to average $36.1 million/year.

Financial Strategy

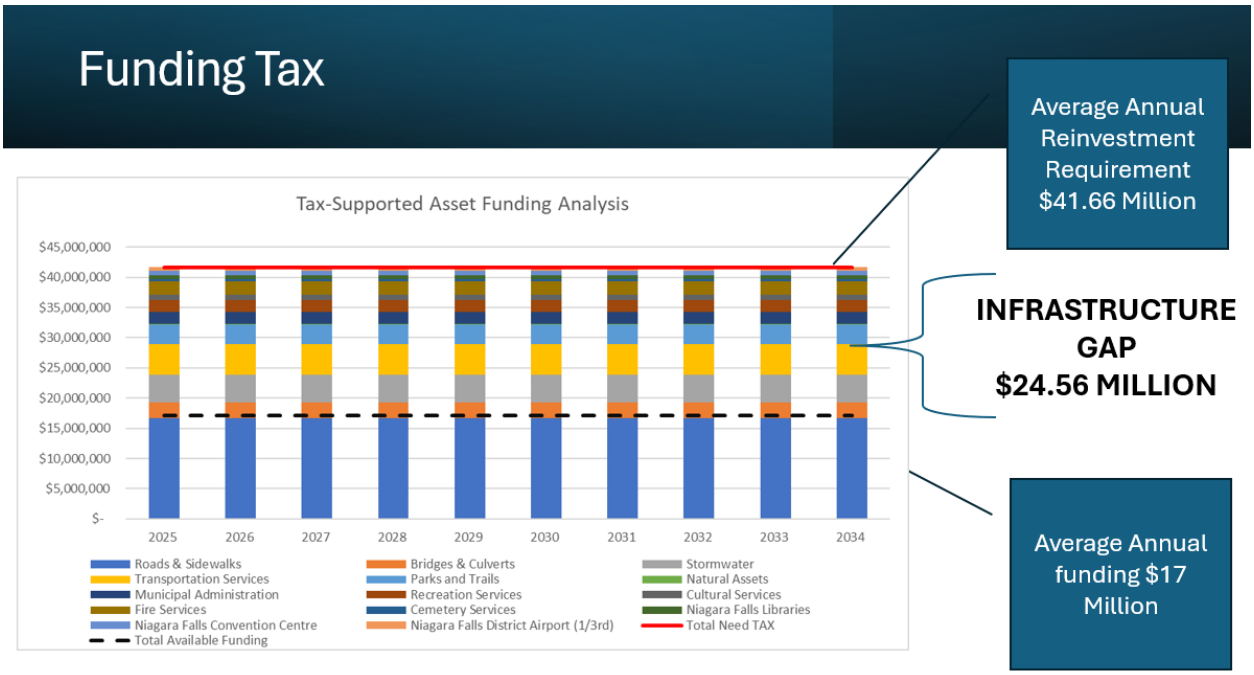
Tax-Funded Assets (Core and Non-Core)

The City receives revenue for infrastructure projects from property tax (including the capital levy), the Canada Community Building Fund, the Ontario Community Infrastructure Fund, third party grants, development charges, and user fees. Some funds are restricted to use by asset type and lifecycle need (e.g., expansion, upgrade or renewal). To maintain the current LOS and prevent the renewal backlog from growing, the City **anticipates an average annual available funding of $6.9 million/year (in 2024$)** available for renewal of non-core assets. This excludes funds from the OLG Casino, because these funds are typically used to fund strategic investments , rather than asset renewal.

Based on the existing funding, the overall asset condition for the City's non-core infrastructure portfolio is anticipated to deteriorate further. **This means that the City's existing funding in place for non-core asset management projects will result in an increased backlog of infrastructure over the next 10 years.**

The 10-year average anticipated renewal funding requirements for tax-funded core and non-core infrastructure is $41.7 million annually, with the anticiapted annual funding is $17 million annually. **This leaves an infrastructure renewal gap for tax-funded assets of $24.56 million/year.**

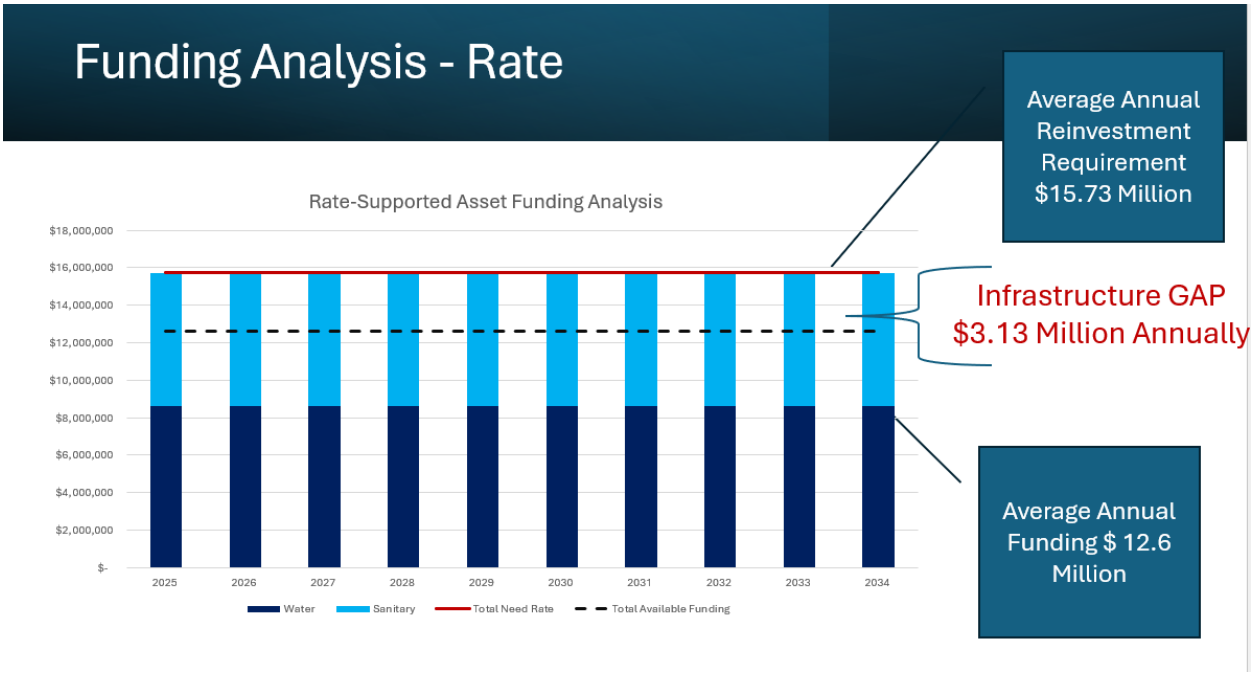
Figure ES-8 Tax-Based Asset Reinvestment Summary



Rate Funded Infrastructure (Core assets – Water and Wastewater)

The 10-year average renewal funding requirement for both rate-funded assets (water and wastewater) is $15.73 million/year (2022$), while the anticipated annual funding is $12.6 million/year. **This leaves an infrastructure renewal gap for rate-funded assets of $3.13 million/year**. These values include renewal needs from the City's 2022 AM Plan for core assets.

Figure ES-9 Rate Based Asset Reinvestment Summary



All Assets (Tax & Rate Funded)

The 10-year average renewal funding requirement for both core and non-core infrastructure is $57.4 million/year (2024$), while the anticipated annual funding is $29.7 million/year. **This leaves an infrastructure renewal gap for all City assets of $27.7 million/year**. These values include renewal needs from the City's 2022 AM Plan for core assets (needs inflated to 2024 $), as well as renewal needs associated with Niagara Falls Public Libraries (see Appendix A), Niagara District Airport (see Appendix B) and the Niagara Falls Convention Centre (see Appendix C). The Niagara District Airport is jointly owned by the City of Niagara Falls, the City of St. Catharines and the Town of Niagara-on-the-Lake. The figure includes 37.4% of the Airport's renewal needs, in accordance with the City's share of funding responsibility.

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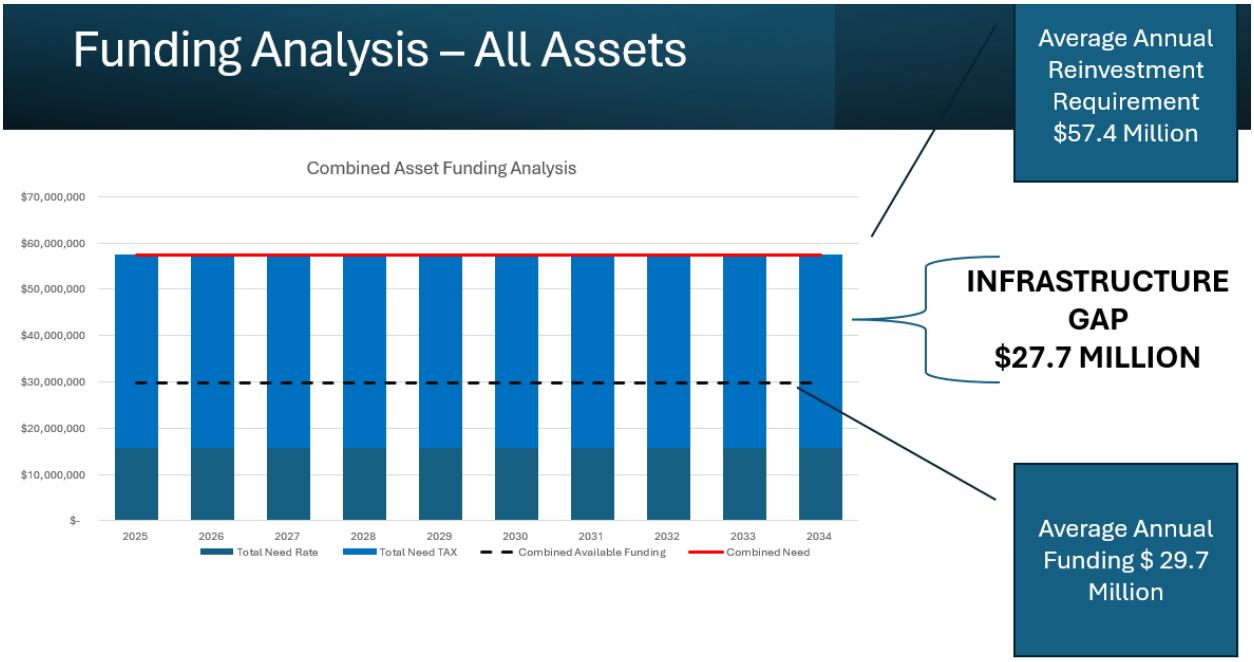
Figure ES-9: Infrastructure Renewal Needs, All Assets



Strategies to Close the Infrastructure Gap

The infrastructure funding gap may be closed by implementing one or more of the following strategies:

- Reduce near term renewal needs by deferring capital renewal projects on lower risk assets, thereby lengthening the period in which the backlog is addressed beyond the 10 years. This may result in **increased maintenance costs** and **risks to service delivery** and corresponds to a **reduction in service levels related to reliability and condition.**
- Increase available funds through property tax (capital levy) increases and leveraging third party grants.
- Use Ontario Lottery and Gaming (OLG) funds for capital renewal. This will reduce funds available for strategic investment projects and is also susceptible to fluctuations in revenues as witnessed during the global COVID19 pandemic.
- Reduce renewal needs by **divesting of assets**. This may reduce service levels related to capability.

Debt funding and reserve funding may also be used; however, these are not sustainable solutions, since the debt funding must eventually be paid back and has interest costs, and reserves must be replenished. Available funding sources will be explored further as the City meets it's AM Reporting obligations for LOS Setting and Lifecycle Funding Strategy development.

AM Plan Improvement and Monitoring

Development of AM Plans is an iterative process that includes improving processes, data, technology, and staff skills over time. Improvements recommended for the overall AM Planning process are as follows:

- Operationalize AM Plan frameworks by incorporating them into the capital planning process.
- Develop and formalize an Asset Management governance structure
- Continue improving the work order management system and processes to support improved
  - tracking of refurbishment and replacement intervals for assets, and
  - accuracy of the forecasting and reporting of maintenance and operating costs.
- Invest in data quality assurance measures such as developing a centralized repository of asset data, and continue collecting data on parks, natural assets, facilities and small equipment.

- Consider developing and implementing an asset tagging platform to align with the City's work order management systems.

Improvements recommended to support development of the 2025 AM Plan Update are as follows:

- Consider internal resource needs (operational impact) to deliver recommended AM Plan capital projects.
- Monitor current LOS and gather information on desired LOS to support development of Proposed LOS AM Plan for all assets (underway).
- Refine AM Plan growth projections based on updated Master Servicing and Transportation Master Plans.
- Complete Energy Conservation & Demand Management Plan Study and incorporate Greenhouse Gas (GHG) metric into AM Plan LOS.

It is also recommended that the City consider establishing a stabilization reserve fund to pay for unexpected spikes in costs. Improvements specific to service areas are detailed within the AM Plan.

The AM Plan will be updated every five years to ensure it provides an updated snapshot of the City's asset portfolio and its associated value, age, and condition. It will ensure that the City has an updated 10-year outlook including service levels, costs of the associated lifecycle strategies and as assessment of the infrastructure gap.

As Per O.Reg. 588/17, the City will conduct an annual review of its progress implementing this AM Plan and will discuss strategies to address any factors impeding its implementation.

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1 Introduction

1.1 Context

The City of Niagara Falls (the City) provides a range of services to its residents, businesses and visitors, including parks and recreation, fire protection, transportation (road operations, traffic, parking) and municipal administration services such as by-law enforcement and development planning.

The City proactively and responsibly manages its infrastructure portfolio. As infrastructure ages and demands increase, so will the challenge of ensuring the needs of the community are effectively met with the limited resources available. This Asset Management Plan (AM Plan) seeks to address this concern by providing direction for the effective management of City infrastructure to best achieve established goals and objectives. As an integrated AM Plan, it considers the lifecycles and needs of all infrastructure assets within scope, providing a sustainable, holistic view of the asset portfolios. The resulting AM Plan is intended to provide the optimal allocation of resources towards meeting prescribed goals, objectives, and levels of service (LOS). The AM Plan is focused on managing the condition and performance of complete asset systems through a systematic decision-making process. Development of AM Plans is an iterative process that includes improving processes, data, systems, and staff skills over time to gain more and more confidence in the information presented.

1.2 Purpose of the Plan

This Asset Management Plan (AM Plan) identifies the asset lifecycle actions needed to sustain the current Levels of Service (LOS) for the City's non-core services. The AM Plan begins by defining LOS metrics and performance, then provides an overview of the infrastructure assets used to support those LOS. Next, asset lifecycle activities needed to sustain the current LOS over the next 10 years are presented, along with their forecasted cost. Risks associated with the current funding level are identified, and mitigations recommended.

This AM Plan fulfils the requirements of the Ontario Regulation (O.Reg.) 588/17 Asset Management Planning for Municipal Infrastructure for AM Plans. Specifically, this AM Plan outlines current (2024) Levels of Service (LOS) performance for core assets, recommended actions, and costs associated with sustaining that LOS.

In accordance with the requirements of O.Reg. 588/17, this AM Plan is posted on the City's website and will be updated at least every 5 years. Starting the year after, the City's Proposed Levels of Service AM Plan is completed (required by July 2025), City Council must conduct an annual review of its asset management progress on or before July 1st each year which addresses progress in implementing the City's AM Plan, any factors impeding the City's ability to implement the AM Plan, and a strategy to address these factors.

This AM Plan is a medium to long range planning document that is used to support the City's strategic priorities and other goals by providing a rational strategy for proactively and effectively managing the City's non-core assets. It provides a guide to understanding key items such as:

- The size, replacement value, and condition of City's non-core asset portfolio
- The current levels of service standards and the City's performance against them
- The assets that will be needed in the future to support non-core service delivery objectives and mitigate vulnerabilities.
- The planned activities to sustain current and future non-core assets throughout their lifecycles at minimal cost, while mitigating vulnerabilities
- The funding sources for planned lifecycle activities
- The steps to improve future iterations of the AM Plan.

This AM Plan is intended to improve the City's ability to achieve its corporate goals and objectives in a way that best serves its stakeholders. It provides a rational framework that enables systematic and repeatable processes to manage costs, risks, and levels of service for the City's non-core asset portfolio.

1.3 O.Reg 588/17 Regulatory Requirements

This AM Plan meets the Current Levels of Service requirements of O.Reg 588/17, as described in Table 1-1. The City is also working toward compliance with the regulation's requirement for Proposed Levels of Service, which will be completed prior to the Province's deadline of July 1, 2025.

Table 1-1: Asset Management Compliance – Current Levels of Services

AM Plan Section	O.Reg. 588/17: Current LOS Requirements	City Non-Core AM Plan Comments
Levels of Service (LOS)	5.(2)1. For each asset category, the current levels of service being provided, based on data from at most the two calendar years prior to the year which all information required is included in the asset management plan: *i. [For core assets only]* ii. For all other assets, the qualitative descriptions and technical metrics established by the organization. 5.(2)2. The current performance of each asset category.	Section 2.2 and each Service Area section lists qualitative Customer LOS metrics with current performance. Section 2.2 and each Service Area section lists Technical LOS metrics with current performance scores, where data is available.
State of Local Infrastructure	5.(2)3. For each asset category:	
	i. a summary of the assets	Section 2.1 summarizes the assets covered by the AM Plan including asset counts.
	ii. the replacement cost of the assets	Section 2.1 lists replacement value by asset type. Replacement values have been estimated based on recent comparative pricing, and for unique assets, inflating historical costs to current day values.
	iii. the average age of the assets	The average age profiles are shown in within each Service Area section.
	iv. the condition of the assets	The condition profiles are shown in Figures Section 2.1.
	v. the approach to assessing condition of assets	Condition grading criteria are listed in Tables Section 2.1. Building condition information was based on Building Condition Assessments from 2023 (and some from 2019).
Lifecycle Management Strategy	**RENEWAL:** 5.(2)4. For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service for each of the next 10 years, based on risk and lowest lifecycle cost analyses.	Section 5.4 presents a renewal funding scenario to maintain the current LOS for asset service condition. The LOS metric to be maintained is Value of Renewal Backlog. The year-by-year renewal cost condition forecast are provided. The adjusted renewal frequency to achieve this LOS is detailed in Section 2.4.
	GROWTH: 5.(2)6.i. For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following: 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	Population and employment forecasts for the City are included as Section 2.4.

AM Plan Section	O.Reg. 588/17: Current LOS Requirements	City Non-Core AM Plan Comments
Financing Strategy	**RENEWAL**: 5.(2)4. For each asset category, the costs of providing the lifecycle activities that would need to be undertaken to maintain the current LOS for each of the next 10 years.	Section 2.4 presents a renewal funding scenario to maintain the current LOS for asset service condition. The LOS metric to be maintained is Value of Renewal Backlog.
	GROWTH: 5.(2)6.vi. The estimated 10-year capital expenditures and significant operating costs required to maintain the current LOS to accommodate projected increases in demand caused by growth as set out in Schedule 3 to the 2017 Growth Plan.	Growth expenditures have been estimated based on total dollar values for 2025-2034 Capital Plan and are summarized in Section 2.4. Growth components of capital projects were identified based on funding from Development Charges. Growth of the asset portfolio over the next 10 years is shown in Section 2.4. The % increase in Operating expenditures have been estimated based on the % increase in capital assets. Ten-year forecast of operations and maintenance costs is shown in Section 2.4.
Other	5.(3) Every asset management plan must indicate how all background information and reports upon which the information required for the state of infrastructure section within the asset management plan is based, will be made available to the public.	Background information and reports for the State of Infrastructure section may be provided by the City upon request.

Both this AM Plan and the City's updated Strategic Asset Management Policy are posted on the City's website. This AM Plan will be updated at least every five (5) years as per the requirements of O.Reg. 588/17.

1.4 AM Plan Scope

This non-core AM Plan focuses on eight (8) City services which all assist in providing municipal services to the City's residents, businesses and visitors.

- **Transportation Services:** The City's Transportation Services Department is comprised of three divisions; Transportation Engineering, Traffic and Parking Services. The specific subservices included within this AM Plan include the assets which support road operations, traffic, and parking control/operations.
- **Parks & Trails:** The City owns and maintains 82 parks, athletic fields and open spaces including an inventory of over 50 playgrounds. The City also has a trail network which is used by pedestrians for transportation and leisure purposes.
- **Natural Assets:** The City encompasses natural resources such as ecosystems and green spaces that provide municipal services, instead of using costly infrastructure to do the same job. Natural assets included in this plan include City trees and woodlots. Natural watercourses and related natural asset information will be used by the City to develop a Natural Asset Management Roadmap in conjunction with INTACT public entities and the Natural Assets Initiative
- **Municipal Administration:** Municipal Administration is responsible for providing centralized services internally across the City such as Information Technology, furniture & AV equipment and administrative and operational facilities for City employees etc.
- **Recreation Services:** Recreation Services support all services relating to athletic or entertainment participation events and/or activities provided within City facilities located across the City.
- **Cultural Services:** Cultural Services provide by nonmaterial benefits through initiatives related to cultural diversity, cultural heritage values, traditional knowledge systems, and social relations.

- **Fire Services:** The Niagara Falls Fire Department is a composite department with over 130 full-time firefighters responding in the urban area and 100+ volunteers responding in the rural area. The mission of Fire Services is to citizens and visitors to our city and to protect them from the consequences of fires and other emergencies.
- **Cemetery Services:** Cemeteries are a testament to the City's rich heritage and help to maintain and preserve local history. The City currently administers, operates and maintains over twenty (20) cemeteries throughout the urban and rural municipality.

The AM Plan also addresses City-supported services that are managed by separate boards, including Niagara Falls Public Library (see Appendix A) and the Niagara District Airport (see Appendix B). The Niagara Falls Convention Centre (NFCC) is also owned by the City and managed by a separate board but is not included in this AM Plan because detailed information on the NFCC inventory was not available at the time of publishing. When information becomes available the City's AM plan records will be updated accordingly.

1.5 Organization of the Document

The AM Plan is organized to meet the requirements of Ontario Regulation 588/17 (Current Levels of Service) and the Province's "Guide for Municipal Asset Management Plans". The contents of this AM Plan follow the recommended elements of a detailed AM Plan:

- **Executive Summary:** Summary of AM Plan
- **1 – Introduction:** Outlines scope, background information, relationship to other municipal documents and plans, and applicable legislation
- **2 – City-Wide Summary:** Summarizes the Contents of the AM Plan at the corporate level
    - 2.1 – State of the Infrastructure: Summarizes the inventory, valuation, condition and remaining life of the assets in the inventory by service and asset type
    - 2.2 - Levels of Service: Defines levels of service through performance indicators and proposed targets, and outlines current performance
    - 2.3 – Risk Management Strategy: Defines the framework for identifying critical assets and quantifies risk exposure to enable prioritization of lifecycle activities and optimization of lifecycle activities
    - 2.4 – Lifecycle Management Strategy: Summarizes the planned activities to manage the assets that will enable them to provide the required levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost
    - 2.5 – Financing Strategy: Summarizes the available funding for the asset management strategies and any forecast funding gaps. An analysis of the financing strategy which includes the City's core assets is also included.
- **3 – Departmental Summary:** Summarizes the Contents of the AM Plan at the departmental level. Each departmental chapter summarizes the State of Infrastructure, Levels of Service, Risk Management Strategy, and Lifecycle Management Strategy.
- **4 – Plan Improvement Opportunities:** Summarizes the next steps including monitoring of AM Plan implementation progress and improving future iterations of the AM Plan.
- **Appendix A – Niagara Falls Public Library:** Summary of the AM Plan for the City's Public Library division (which reports to an independent Library Board, not the City Council).
- **Appendix B – Niagara District Airport:** Departmental summary of the AM Plan for the Niagara District Airport (which reports to an independent Board, not the City Council). Will be added upon completion of review by Airport Commission.

2 City-wide Overview

2.1 State of the Local Infrastructure

Understanding the assets owned by the City is the starting point to developing a plan to best manage them. The replacement value represents the expected cost to replace an asset to the same functional standard with a new version based on current market conditions and construction standards. Replacement value estimates assume that replacements are conducted as part of planned and bundled capital projects where applicable, rather than as individual unplanned replacements, which would typically be more costly. Table 2-1 shows the estimated replacement value of the City's non-core assets included within this AM Plan as **$524.9 million** (2024$) and includes a breakdown of the inventory by service including current (2024$) replacement value.

Table 2-1: Inventory of City's Non-Core Assets

Service Area	Asset Categories	Replacement Value ($2024, millions)	Proportion of Value of Non-Core Assets (%)
Transportation Services	Streetlights, Barriers, Architectural Features, Beautification & Street Furniture, Signs, Traffic Signals, Traffic Control, Traffic Calming, Parking Lots, Parking Meter, Equipment, Fleet, Facilities	$99.9	19.1%
Parks and Trails	Amenities/Furniture, Aquatic Features, Parkland, Recreation Spaces, Playgrounds, Equipment, Trails, Facilities	$80.8	15.5%
Natural Assets	Trees, Woodlots, Wetlands & Watercourses, Equipment, Fleet	$38.5	7.4%
Municipal Administration	Information Technology, Fleet, Facilities	$64.1	11.7%
Recreation Services	Fleet, Facilities	$134.6	25.8%
Cultural Services	Fleet, Facilities	$45.8	8.8%
Fire Services	Equipment, Fleet, Facilities	$53.8	10.3%
Cemetery Services	Equipment, Fleet, Facilities	$7.4	1.4%
Total		**$524.9**	**100.0%**

Condition Information

In this AM Plan, the term "condition" refers to the degree of physical deterioration of an asset. "Performance" is a more general term that typically describes an asset's ability to achieve levels of service through measures such as capacity, function and operational quality.

Condition assessment programs evaluate current physical condition, determine rate of deterioration over time, enable forecasts of future condition, and inform the most beneficial type and timing of treatment. Condition assessment methods and rating systems have become relatively standard for some assets but vary depending on the type of asset. The City conducts inspections more frequently on more critical assets such as facilities, while condition assessments are undertaken for less critical assets such as parking lots and recreational trails at an appropriate frequency for the asset group. Some City assets have no reported physical condition. These include assets which the City is in the process of collecting the data, assets where the renewal decision is not based on condition (e.g., age or mileage), and assets that are run-to-failure.

For those assets with no condition data, age-based condition is estimated as the percentage of age to useful life. Using age data as a surrogate for condition data is common but can be misleading as age does not always directly reflect condition or remaining life. The City is working to increase the percentage of assets with industry standard condition assessment data.

To enable comparison of condition and condition trends over time between different asset types, a generic condition grading scale is often used to translate detailed engineering data about assets into information that can be compared across asset groups. For this purpose, the City uses a five-point condition grading system, summarized in the table below, which is consistent with the general condition grading system included in the International Infrastructure Management Manual (IIMM).

Table 2-2: Condition Grading Criteria

Grade	Condition	Description of Asset	Lifecycle Needs	Typical Age-Based Mapping
VG	Very Good	New or recently rehabbed	Regular maintenance	75 – 100% Remaining Life
G	Good	Physically sound with some elements showing signs of wear	Maintenance/repair costs fit within operating budget	50 – 75% Remaining Life
F	Fair	Signs of deterioration, performing at lower level than intended	Minor capital repairs needed	25 – 50% Remaining Life
P	Poor	Significant deterioration is evident	Major capital repairs needed	0 – 25% Remaining Life
VP	Very Poor	Advanced deterioration, unacceptable performance	Replacement or refurbishment needed	Beyond Service Life

For this AM plan, condition assessment data was incorporated where available, specifically for the City's facilities and parking lots.

Facilities should undergo regular condition assessments to identify deficiencies and recommend repair and replacement of building elements. In tandem to this initiative, the City completed Building Condition Assessments (BCAs) for some of their critical facilities to obtain a better understanding of their state of good repair needs. Prior to this, the City had conducted BCAs for a select few facilities in 2019.

A list of the City's facilities which had BCAs completed to inform the condition and renewal needs for the AM Plan can be found in Table 2-3 below. The City intends to perform building condition assessments for a subset of these types of facilities at least every five years.

Table 2-3: List of Facilities with Building Condition Assessments

Service	Site / Facility	BCA Completion Year	Replacement Value ($)
Road Operations	Operations Centre West	2023	$2,404,050

Service	Site / Facility	BCA Completion Year	Replacement Value ($)
Parks Service	Kalar Sports Club	2023	$1,692,228
Parks Service	Chippawa Lions Park	2023	$1,135,465
Parks Service	EE Mitchelson Park	2023	$1,889,465
Parks Service	FH Leslie Park	2023	$2,773,023
Parks Service	NF Lions Park	2023	$1,757,369
Parks Service	Prince Charles Park	2023	$1,653,987
Municipal Administration	City Hall	2023	$21,265,566
Municipal Administration	Intercity Bus Terminal	2023	$2,227,908
Municipal Administration	Operations Centre East	2023	$22,367,988
Municipal Administration	Wayne Thompson Building	2023	$6,199,194
Recreation Services	Chippawa Memorial Arena	2023	$12,818,376
Recreation Services	Gale Centre	2023	$68,513,472
Recreation Services	MacBain Community Centre	2023	$52,676,130
Cultural Services	Niagara Falls History Museum	2023	$21,265,566
Cultural Services	Battleground Hotel Museum - A	2019	$15,000,000
Cultural Services	Battleground Hotel Museum - B	2019	$844,590
Cultural Services	Battleground Hotel Museum - C	2019	$1,624,072
Cultural Services	Fire Hall Theatre	2019	$1,308,907
Fire Services	Fire Administration	2023	$1,135,465
Fire Services	Fire Station 1	2023	$1,889,465
Fire Services	Fire Station 2	2023	$2,773,023
Fire Services	Fire Station 3	2023	$1,692,228
Fire Services	Fire Station 4	2023	$1,757,369
Fire Services	Fire Station 6	2023	$1,653,987
Fire Services	Fire Station 7	2023	$12,818,376
Cemetery Services	Fairview Cemetery	2023	$3,751,992
Library Services	Niagara Falls Library	2023	$13,958,556
Library Services	Chippawa Library	2019	$2,136,118
Total	**29 Sites / Facilities**	**n/a**	**$282,983,935**

For the City's parking lots, the asphalt is assessed utilizing a Pavement Condition Index (PCI) score, which is based on visual inspection to identify the type, severity and extent of defects in a paved area. For the remaining assets, condition was calculated predominantly from remaining life based on age and estimated service life.

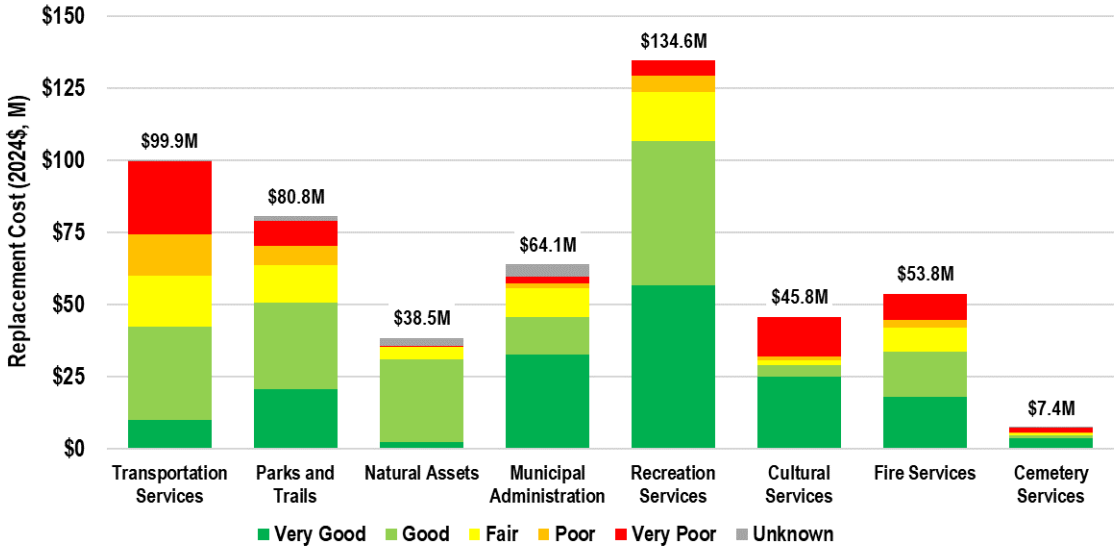
Table 2-4 shows how the five-point scores from Very Good to Very Poor were determined from the available asset data, including remaining useful life and other condition scoring systems, such as the Facility Condition Index (FCI).

Table 2-4: Condition Grading Scale

Condition Grade	% Remaining Useful Life (all asset types)	Facility Condition Index (Facilities)	Pavement Condition Index (Parking Lots)
Very Good	>75 – 100%	0 to 2%	85 to 100
Good	>50 – 75%	2 to 5%	70 to 84
Fair	>25 – 50%	5% to 10%	55 to 69
Poor	>0 – 25%	10% to 30%	40 to 54
Very Poor	<= 0%	Over 30%	Less than 40

The current (2024) condition distribution of the City's non-core assets is shown in Figure 2-1 below, by Service Area. The colours that make up each vertical bar represent the condition of the assets that support each service from very good to very poor. Assets with an unknown condition are represented in grey.

Figure 2-1: Condition Distribution of the City's Non-Core Assets



Overall, 81% or $416 million of the City's non-core assets are in Fair condition or better, 6% or $33 million are in Poor condition and 13% or $66 million are in Very Poor condition This excludes approximately $9.1 million of assets with unknown condition either because the install date is not known, or a condition assessment has not yet been undertaken. Knowing the condition of assets is important to understanding the risks and costs of meeting stated service delivery objectives. Most of the assets of unknown condition include facilities without BCAs, natural assets and parks.

2.2 Levels of Service

In the State of Infrastructure Section, the value, age, and condition of the City's non-core infrastructure assets were discussed. The Levels of Service (LOS) chapter builds on the State of Infrastructure by defining the performance the City's assets are intended to deliver over their service lives. For example, the City's recreation facilities are expected to be maintained in a state of good repair such that residents can access suitable facilities and participate in various sports activities.

LOS are statements that describe the outputs and objectives the City intends to deliver to its residents, businesses, and other stakeholders. The LOS enable review of current performance against the City's *Strategic Priorities 2022 Update.* Developing, monitoring, and reporting on LOS are all integral parts of an overall performance management program which is aimed at improving service delivery and demonstrating accountability to the City's stakeholders.

As per O.Reg 588/17, the AM Plan is required to provide current LOS for non-core asset categories, determined in accordance with qualitative descriptions and technical metrics established by the municipality.

In general, LOS are guided by a combination of customer expectations, legislative or code requirements, and internal guidelines, policies, and procedures. In many cases, LOS are also implied based on past service delivery, community expectations, and infrastructure system design. Effective asset management requires that LOS be formalized and supported through a framework of performance measures, targets, and timeframes to achieve targets, and that the costs to deliver the documented LOS be understood.

2.2.1 Levels of Service Framework

Figure 2-2 shows the LOS framework and line of sight, from high-level corporate initiatives to detailed asset-specific Technical LOS. Corporate commitments, along with legislated LOS, guide Community LOS that describe the services that the assets need to deliver to the City's residents and businesses. Community LOS can typically be categorized to one of the following service attributes:

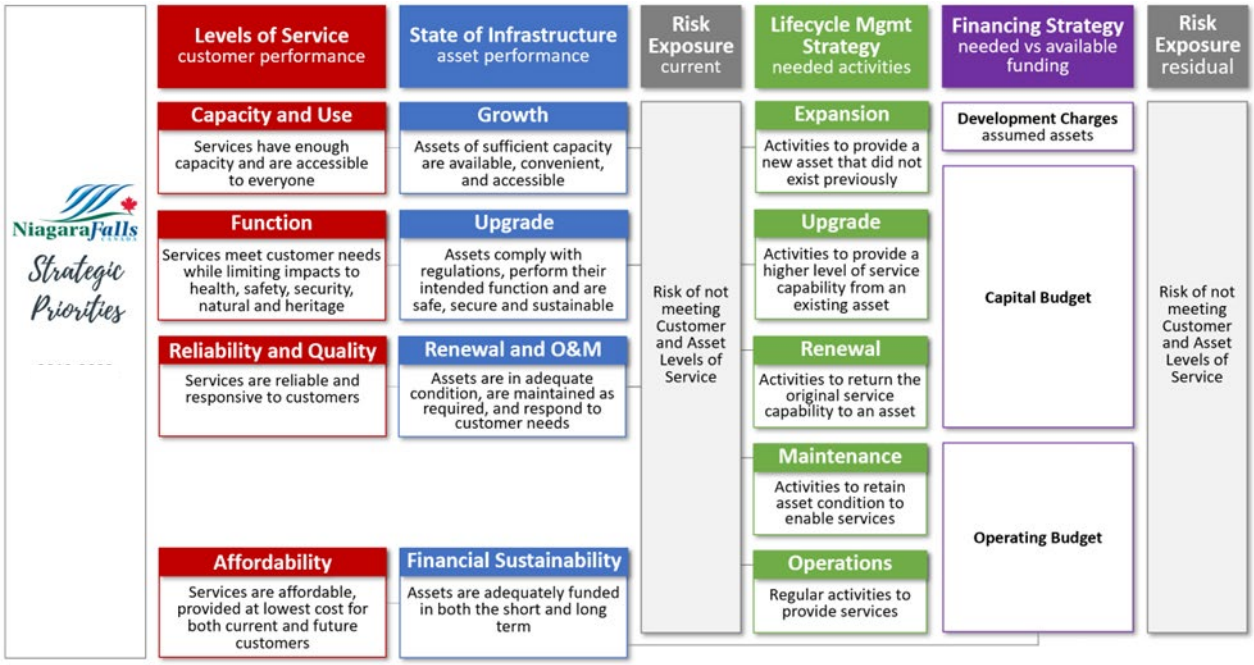
- **Capacity and Use:** Services have enough capacity and are accessible to the customers.
- **Function:** Services meet customer needs while limiting health, safety, security, natural and heritage impacts.
- **Quality and Reliability:** Services are reliable and responsive to customers.
- **Financial Sustainability:** Services are affordable and provided at the lowest cost for both current and future customers.

Community LOS are translated into Technical LOS that define asset performance levels, which in turn define asset needs and drive the required lifecycle activities and funding to mitigate risk. As shown:

- Capacity and Use LOS informs Growth needs.
- Function LOS informs Upgrade needs.
- Quality and Reliability LOS informs Renewal, Operations and Maintenance needs.
- Financial Sustainability LOS informs Funding needs.

Lifecycle management activities balance the cost of service with the risk to meeting service levels. This line-of-sight establishes the connection of how the day-to-day management of City assets contributes to the success of achieving corporate strategic priorities.

Figure 2-2: City-wide Levels of Service Framework



2.2.2 Corporate Strategic Goals

The Corporate or Strategic LOS establish service levels that describe the main vision or objective of service delivery at the City. The City's 2023-2027 strategic pillars and supporting objectives and key actions were updated and adopted by Council in October 2023. The Plan's three pillars and supporting objectives will further define the strategic direction on the City's assets. The Strategic Pillars are as follows:

1. Sustainability:
    - Financial Sustainability: Effectively managing the City's financial resources to meet our current and future obligations without relying on external funding sources or sacrificing our ability to deliver essential services to our residents.
    - Environmental Sustainability: Implementing practices and policies to ensure the health and well-being of the environment for current and future generations. Environmental sustainability is vital for adapting to the impacts of climate change, preserving biodiversity, and improving the quality of life for residents in the community.
    - Social Sustainability: The City of Niagara Falls works in partnership with the Niagara Region to ensure residents have access to basic needs such as affordable housing, health and mental health care, education, and social services, ensuring that Niagara Falls is a liveable, inclusive and supportive community for all.
2. Customer Service: Delivering a welcoming and consistent customer service experience centred around the people we serve.
3. Economic Diversification & Growth: Fostering a balanced and sustainable local economy achieved by expanding and diversifying the types of industries and businesses operating within the community. This involves attracting new businesses, supporting existing initiatives, and spurring innovation and entrepreneurship.

2.2.3 Legislated Requirements

Legislated requirements define the standards according to which the City is legally obligated to provide services to the community, and these standards (or Legislated LOS) typically relate to asset safety, reliability, or function. Examples of legislated requirements impacting the service levels provided to the community in relation to the non-core assets include:

- **Energy consumption and greenhouse gas (GHG) emissions reporting requirements** per O.Reg. 507/18 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans) under the Electricity Act, 1998, S.O. 1998, c. 15, Sched. A

- **Accessibility requirements per O.Reg. 191/11 (Integrated Accessibility Standards)** under the Accessibility for Ontarians with Disabilities Act, 2005, S.O. 2005, c. 11
- **Cemetery services requirements per O.Reg 30/11** (General) under the Funeral, Burial and Cremation Services Act, 2002, SO 2002, c 33
- Luminaire, signage, signals, signal sub-system inspection requirements per **O.Reg. 239/02 (Minimum Maintenance Standards for Municipal Highways)** under the Municipal Act, 2001, S.O. 2001, c. 25
- **Fleet and equipment inspection requirements per O.Reg. 174/22** (Classes of Vehicles Requiring Annual and Semi-Annual Inspections), **O.Reg. 611** (Safety Inspections), **O.Reg. 199/07** (Commercial Motor Vehicle Inspections), and **O.Reg. 587** (Equipment) under the Highway Traffic Act, R.S.O. 1990, c. H.8.
- **NFPA 1, Fire Code**, advances fire and life safety for the public and first responders as well as property protection by providing a comprehensive, integrated approach to fire code regulation and hazard management. The **NFPA standard** includes guidance around establishing lifecycle timelines for some fire asses such as fleet.

2.2.4 Community and Technical Levels of Service

The Community and Technical LOS discussed in this AM Plan are focused on measures developed to support achievement of the City's higher level strategic priorities, as articulated in the ***Strategic Plan 2023 – 2027*** approved by Council in October 2023.

This AM Plan summarizes performance on the current measures for 2022, unless otherwise noted. The City will be completing key planning documents aligned with O.Reg.588/17 requirements for Proposed LOS (LOS targets) in 2025. In the meantime, the City will monitor LOS performance with LOS targets established in the next iteration of the AM Plan. The Financial Sustainability of the City's current LOS for its non-core assets is addressed in Section 2.5 Financial Strategy.

The main driver for LOS within this AM Plan is to determine the amount of City funds, required to operate and maintain assets which are deemed "fit for service". For this AM Plan, **assets** deemed **not fit for service** have been identified as assets which are at or passed their service life or are in **Very Poor condition**. Table 2-5 below summarizes the assets deemed fit for service for each Service Area.

Table 2-5: Levels of Service – Fit for Service

Service Area	Community Level of Service	Technical Level of Service	Current Performance	
			2024 $, millions	% inventory value
Transportation Services	Quality: Assets are fit for service	% assets in Very Poor Condition (due or overdue for replacement) by Replacement Value	$25.1	25.2%
Parks and Trails			$8.7	11.0%
Natural Assets			$0.0	0.1%
Municipal Administration			$2.6	4.5%
Recreation Services			$5.2	3.9%
Cultural Services			$13.9	30.4%
Fire Services			$9.2	17.1%
Cemetery Services			$1.4	19.0%
Overall Non-Core			**$66.2**	**12.9% of total inventory value**

Other LOS measures related to Capacity and Use, Function and Reliability are explored within each individual Service Area subsection within the AM Plan. Where sufficient data is not currently available to determine the City's current performance, the City intends to collect data and monitor performance. In the next iteration of the non-core AM Plan, Proposed LOS will be established, which will drive technical asset improvement decision making.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. Moreover, changing circumstances such as technology and customer priorities will change over time.

2.3 Risk Management Strategy

The City's key asset management principle is to meet service levels and manage risk, while minimizing lifecycle costs. The relative importance of the assets to support service delivery, referred to as asset criticality, is a key driver in the selection of the most appropriate asset management strategy for each asset. Critical assets include assets that are key contributors to performance, expensive in terms of lifecycle costs, and most prone to deterioration or in need of ongoing maintenance investment.

Risk events, such as an asset's failure to have sufficient capacity, function, or reliability, are events that may compromise the delivery of the City's strategic objectives. Lifecycle activities are used to manage the risk of failure by reducing the chance of asset failure to acceptable levels. The impact of asset failure on the City's ability to meet its strategic objectives, dictates the type and timing of lifecycle activities.

The City uses a risk framework for quantifying the risk exposure of its assets to enable prioritization of lifecycle activities across asset classes and services. Risk exposure is the multiplication of the criticality or consequence of failure (CoF), which is the direct and indirect impact on the City if an asset failure were to occur, by the probability of failure (PoF), which is the likelihood or chance that an asset failure may occur:

Risk Exposure = Consequence of Failure x Probability of Failure

2.3.1 Consequence of Failure

Asset criticality or consequence of failure reflects the importance of an asset to the City's delivery of services. The following impacts of a potential asset failure are considered:

- **Financial** impact considerations such as asset replacement cost, damages to City or private property and infrastructure, loss of revenue, and fines.

- **Health and Safety** considerations including the ability to meet health and safety related regulatory requirements, and degree and extent of injury, ranging from negligible injuries to loss of life.
- **Service Delivery** considerations ranging from a brief and isolated disruption of non-essential service to widespread and long-term disruption of essential service.
- **Reputational** considerations such as residents' reduced trust and confidence in City government.
- **Environmental** considerations such as length and extent of damages to the natural environment.

The City's Climate Change Adaptation Plan requires consideration of the consequences of extreme weather, emergency events and safety risks to the community. The risk assessment included climate change considerations but should be reviewed over time as the impacts of climate change become more apparent.

Table 2-6 summarizes the above listed impacts against an asset criticality rating scale from 1 to 5, with a higher score indicating a higher consequence of failure.

Table 2-6: Asset Criticality (Consequence of Failure) Ratings

Consequence Categories	1	2	3	4	5
	Insignificant	Minor	Moderate	Major	Catastrophic
Financial	Damages, losses (including 3rd party) or fines from $1k to $5k	Damages, losses (including 3rd party) or fines $5k to $50k	Damages, losses (including 3rd party) or fines $50k to $500K	Damages, losses (including 3rd party) or fines $500K to $5M	Damages, losses (including 3rd party) or fines > $5M
Health & Safety	No obvious potential for injury or effects on health	Potential for minor injury or health effects of an individual Full recovery is expected	Potential for serious injury or health effects May affect many individuals	Potential for serious injury, health effects or long-term disability to 1+ individuals Emergency hospitalization for 1+ individuals	Potential for death of 1+ individuals Long-term hospitalization for 1+ individuals
Service Delivery	Small # of customers disrupted / impacted < 100 people or up to a few hours	Localized service disruption / impact 100 to 1,000 people or up to 1 day	Significant localized disruption / impact 1,000 to 10,000 or up to 1 week	Major service disruption / impact 10,000 to 50,000 or up to 1 month	City wide service disruption / impact > 50,000 people or permanent loss of services
Reputational	Minor or no media exposure	Minor or no media exposure	Moderate local media exposure lasting for several days	Intense local media exposure lasting several days and/or Municipality wide exposure	Significant Provincial exposure lasting several days or weeks
Environmental	Very negligible impact or can be restored within 1 week	Minor (within 1 month) very isolated damage / impact to the environment Local importance	Significant short-term impact (up to 2 months) Local importance	Significant long-term impact (up to 1 year) Regional importance	Major long-term impact (greater than 1 year) Provincial / Federal importance

2.3.2 Probability of Failure

The City's aim is to ensure that its assets are kept in a state of good repair to reduce the incidence of unplanned service disruptions due to poor asset condition. Depending on the asset, unplanned failures can have wide-ranging consequences including service disruption, damage to surrounding infrastructure and property, risks to public safety, and environmental impacts.

For this AM Plan, Probability of Failure is estimated based on the condition of the asset, as shown in Table 2-7.

Table 2-7: Probability of Failure Ratings

PoF Rating	Corresponding Asset Condition	
1	VG	Very Good
2	G	Good
3	F	Fair
4	P	Poor
5	VP	Very Poor

After assessing the criticality and probability of each asset's risk, the results were plotted on a risk map, Figure 2-3 below, which is a graphic representation of probability and consequence of failure. Colours on the map denote different levels of risk and help to prioritize the City's resources, time, and effort in the next section of the AM Plan – Lifecycle Management Strategy.

- Risks that appear in the light red (Very High) zone are significant to the City and therefore need to be actively managed and monitored in a more comprehensive manner than other risks (i.e., prioritized).
- Risks that appear in the yellow (High) or green (Moderate) zones will also be actively managed depending on their nature.
- Risks that appear in the blue (Low) or white (Very Low) zones are generally acceptable without significant mitigation strategies being implemented, although monitoring may still occur in some form.

2.3.3 City-Wide Non-Core Assets Risk Profile

Based on those assets with known condition, Figure 2-3 shows that $**45.3 million or 8.7% of the City's non-core assets are in the Very High risk exposure category** related to provision of reliable services. Details by service are provided in the following sub-sections. This excludes approximately $9.1 million of assets with unknown condition (probability of failure). The City mitigates its exposure to these risks through the planned lifecycle strategies discussed in the next section of this AM Plan – 2.4 Lifecycle Management Strategy.

Figure 2-3: Risk Exposure of the City's Non-Core Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$1.68	$17.51	$4.38	$34.61	$8.00
Likely	$0.42	$14.12	$2.72	$13.55	$2.72
Possible	$0.87	$35.97	$4.74	$23.04	$4.50
Unlikely	$6.18	$113.10	$11.01	$37.83	$6.41
Rare	$3.60	$84.42	$30.24	$43.14	$7.95

Consequence of Failure

Risk Exposure Ratings

Very High	$45.3	8.7%
High	$48.2	9.2%
Moderate	$137.2	26.3%
Low	$187.8	36.0%
Very Low	$94.2	18.1%
Unknown	$9.1	1.7%
TOTAL	**$521.8**	**100.0%**

Through time, assets will deteriorate and move up the Probability of Failure scale (i.e., become more likely to fail), then down the Probability of Failure scale when they are renewed.

2.4 Lifecycle Management Strategy

The City's ability to deliver the levels of service outlined in the Asset Management Plan is impacted in large part by:

- aging infrastructure and the associated need for operations, maintenance, and renewal investments to sustain it
- forecast future population growth and the associated need for additional infrastructure to serve it
- changing functional, legislative and sustainability requirements and the associated need for existing assets to be upgraded to continue to be fit for purpose

- available funds and the associated need for assets to be provided at lowest cost for both current and future customers (inter-generational benefit)

To achieve its objectives, the City builds new infrastructure assets to meet capacity needs, upgrades assets to meet new functional needs, and manages existing assets to meet reliability needs – all with limited funds. Asset lifecycle management strategies are planned activities that enable assets to provide the defined levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost. Asset lifecycle management strategies are typically organized into the categories listed in Table 2-8 and are driven by the levels of services defined for each Service Area.

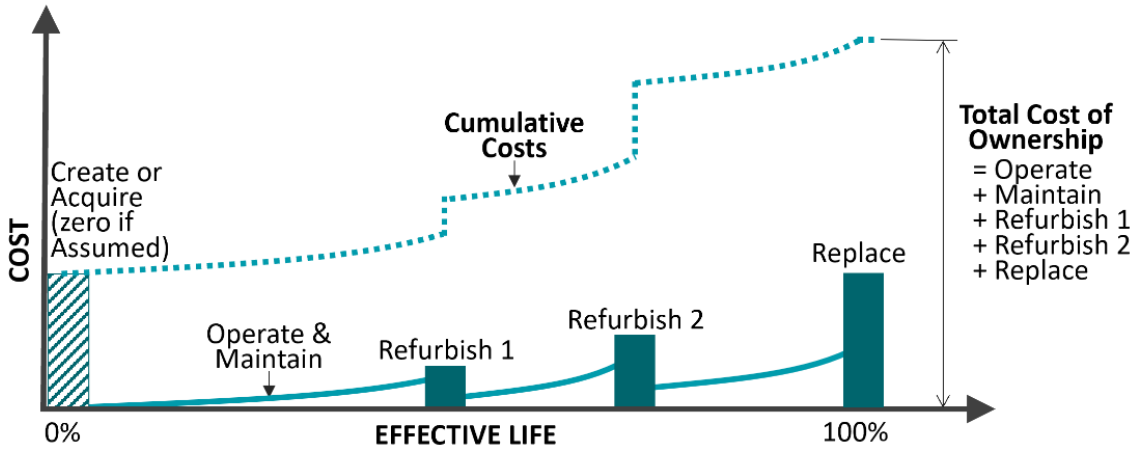
Table 2-8: Asset Lifecycle Management Categories

Lifecycle Management Category	Description	Examples of Associated Activities
Operate	Regular activities to provide services	inspect, clean, energy usage
Maintain	Activities to retain asset condition to enable it to provide service for its planned life	repair, replace component
Renew	Activities that return the original service capability of an asset	rehabilitate (minor), rehabilitate (major), replace
Upgrade	Activities to provide a higher level of service capability from an existing asset to achieve better fit for purpose or meet regulatory requirements	update system to be more energy efficient, improve environmental sustainability
Grow	Activities to provide a new asset that did not exist previously or an expansion to an existing asset	acquire new asset, expand existing asset

In addition to the above asset strategies, non-asset solutions are also considered which are actions or policies that can lower costs, lower demands, or also extend asset life. Examples of non-asset solutions include better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, and education of the public.

The City assesses the costs of potential lifecycle activities to determine the lowest lifecycle cost strategy to manage each asset type while still meeting levels of service. The total cost of ownership is the sum of lifecycle activity costs to sustain each asset type over the asset lifecycle. A conceptual lifecycle cost model is shown in Figure 2-5. Sufficient investment of the right type and at the right time minimizes the total cost of ownership for each asset and mitigates other potential risks such as, interruption to service delivery or damage to other nearby infrastructure. Operations, maintenance, and renewal activities are timed to reduce the risk of service failure from deterioration in asset condition and are part of the total cost of ownership.

Figure 2-4: Conceptual Lifecycle Cost Model



The City utilizes its understanding of risks of not meeting service levels, to inform the timing and level of investments needed in infrastructure assets. The City aims to provide sufficient service capacity to meet demand while managing the upgrade, operations, maintenance, and renewal needs of assets to meet defined service levels, including legislated and corporate requirements. This section of the AM Plan outlines the City's identified expansion and upgrade strategies to support capacity and functional service levels, and the City's operations, maintenance, and renewal activities required to support reliability service levels.

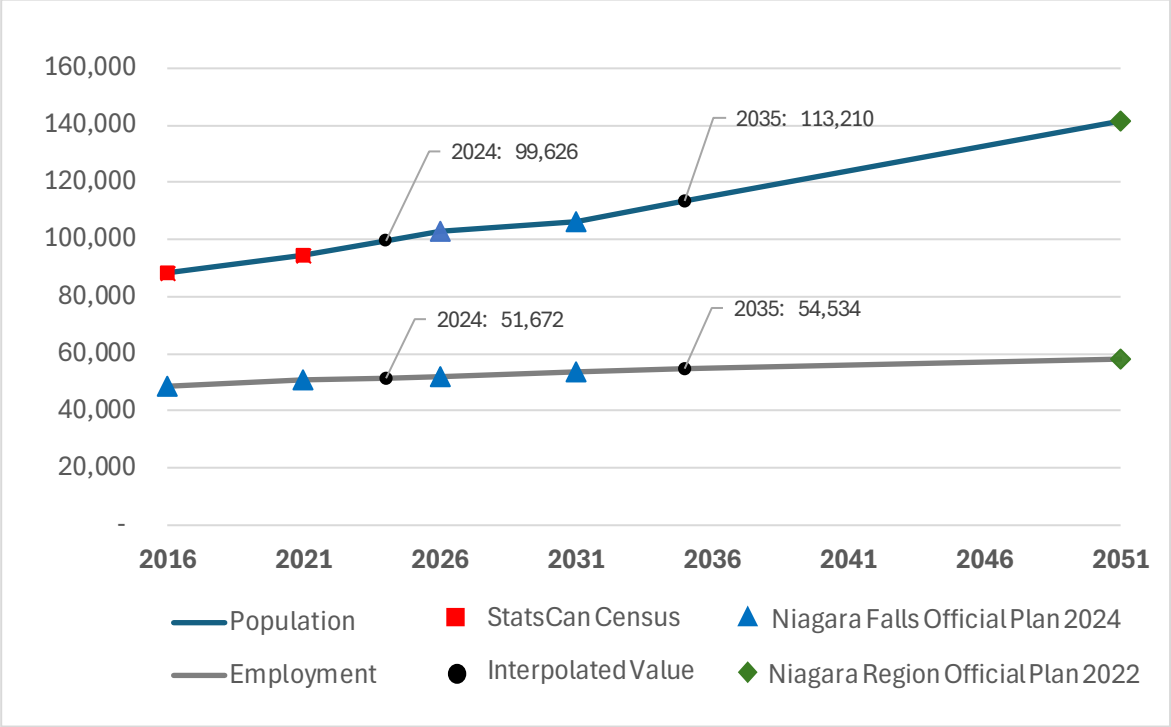
2.4.1 City Growth Needs

One main factor that municipalities must consider in asset management planning is the impact of future growth on meeting goals and objectives. The City monitors trends in its population to ensure that its impact on service levels is well understood and that strategies are developed to address additional demands due to growth and demographic changes. The City's historical and forecast population and employment growth is summarized in Table 2-9 and shown in Figure 2-5. Historical population data is based on Census information up to 2024, at which time the population in the City was 99,626. Forecast growth is as reported in the Niagara Falls and Region of Niagara Official Plans.

Table 2-9: City Population and Employment Forecasts

Year	Population	Source of Population Estimate	Employment	Source of Employment Estimate
2016	88,071	Census	48,560	City Official Plan
2021	94,415	Census	50,820	City Official Plan
2024	99,626	Interpolated	51,672	Interpolated
2026	103,100	City Official Plan	52,240	City Official Plan
2031	106,100	City Official Plan	53,640	City Official Plan
2035	113,210	Interpolated	54,534	Interpolated
2051	141,650	Regional Official Plan	58,110	Regional Official Plan

Figure 2-5: City Population History and Forecast to 2051



The City anticipates that additional infrastructure will be required over the next 10 years to maintain capacity service levels. Some of this infrastructure will be acquired through City-led construction (City-Constructed), while other infrastructure will be constructed by developers then transferred to the City through ownership assumption (Assumed Assets). The funding is addressed in Section 2.5, Financial Strategy.

City Development Charge Study

Development Charges (DCs) are fees collected from builders and developers to pay for the capital cost of infrastructure required to provide municipal services to new development. The intent is to ensure that "growth pays for growth". The Development Charges Act (DCA) outlines statutory exemptions and credits related to the collection of DCs for specific types of development.

The City is currently updating its Master Servicing Plans (MSP), which will identify new infrastructure needed to support growth. MSP recommendations will then be incorporated into the next update of the DC Background Study (last developed in 2019), which will determine the DC rates for the DC By-Law. The City has recently published its draft 2024 DC Background Study and By-Law for public consultation. The City intends to adopt a new DC By-Law inclusive of a 10-year growth-related capital program prior to the July 2024 expiry of the current DC By-Law. The Background Study supporting the new DC By-Law leverages information from the MSP work completed to date, prior master plans, and other concurrent planning-related initiatives. Since the MSP's are not yet complete, growth assets recommended by these plans will be incorporated in a future update of the AM Plan.

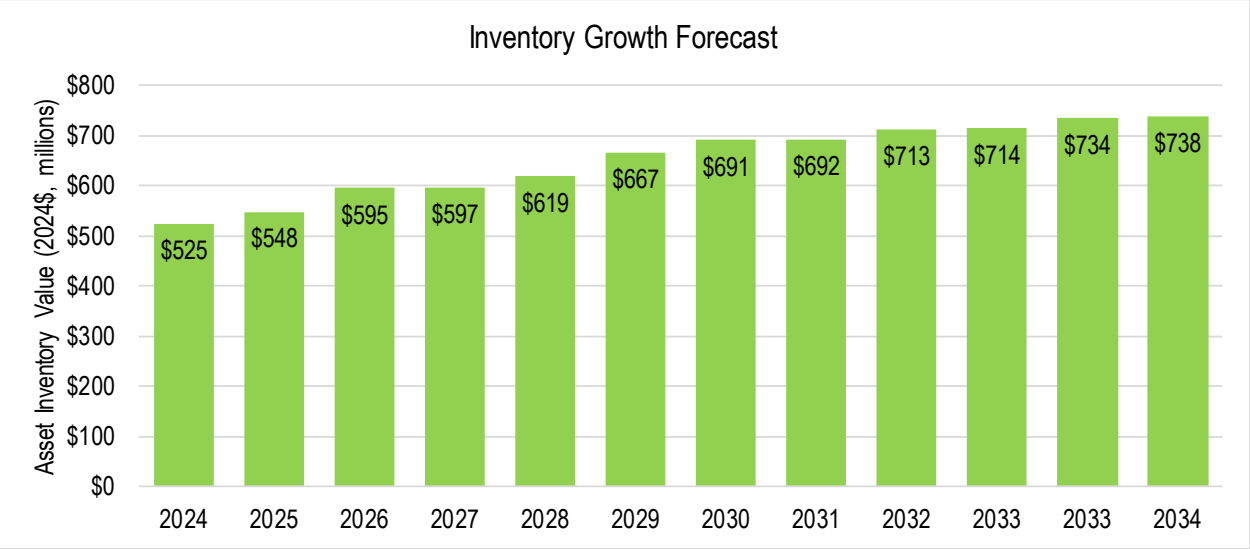
City Inventory Growth Forecast

Annual growth and acquisition amounts for projects in the 2025-2033 Capital Plan are shown in Figure 2-7. Anticipated growth will increase the value of the asset portfolio by over $212 million dollars.

Significant planned growth assets included in Figure 2-7 include:

- Parking Garage ($45M) –2027 (Feasibility Study in progress)
- New Operations Centre ($47M) – 2028.
- Cemetery development ($80M) – shown in Figure by 2034, but acquisition may take place over 20 years

Figure 2-6: 10-Year Inventory Forecast



2.4.2 Renewal Needs

Renewal efforts focus on rehabilitation and replacement activities to enable the City to meet its reliability objectives. The renewal activities included in this AM Plan are forecast to be needed to address the existing backlog of assets in Very Poor condition and sustaining other assets as they deteriorate over the next 10 years. Over time, as the City refines the asset management strategies through tracking of actual condition and actual costs and benefits of the strategies, by service and asset category, the City will improve its understanding of the deterioration rates and the lowest lifecycle cost for each asset type.

Rehabilitation activities extend the life of an asset and reduce risk of failure. These activities and associated benefits are deemed more cost effective than allowing the asset to reach its end of life. The City has identified estimated service lives for each of its assets. These replacement intervals are developed to minimize lifecycle costs while considering service levels and associated risk.

The renewal forecasts consider the asset's current condition or age, the City's planned rehabilitation and replacement activities, as well as the recommended strategies from specific studies such as the BCAs. Asset renewal needs are triggered by condition, age, or other performance measure. If installation date is missing, renewal needs are included as an average annual reinvestment rate (same investment each year) based on asset value and useful life.

Figures 2-8 and 2.9 below present renewal and condition forecasts for two scenarios:

1) **Maintain the Current LOS (Figures 2-8 and 2-9):** This scenario shows renewal activities that would be required to prevent the current renewal backlog from growing.
2) **Unconstrained Budget Scenario (Figures 2-10 and 2-11):** This scenario shows the renewal activities that would be conducted if assets were renewed immediately upon reaching end of asset life. The unconstrained renewal funding scenario is aspirational since most municipalities do not have sufficient resources to support this level of service. In fact, this funding level would significantly improve the City's LOS performance for Asset Service Condition by eliminating the renewal backlog.

Maintaining the Current LOS Scenario

The average annual renewal needs to maintain the current LOS (% assets at or past service life) for the next 10 years is **$11.1 million/year**. The anticipated annual renewal funding for the same period is **$6.9 million/year** as described in the Financing Strategy. This results in a renewal funding gap of **$4.2 million/year** for each of the next 10 years to maintain the current LOS.

Figure 2-7: Infrastructure Renewal Needs – Maintaining Current LOS Scenario

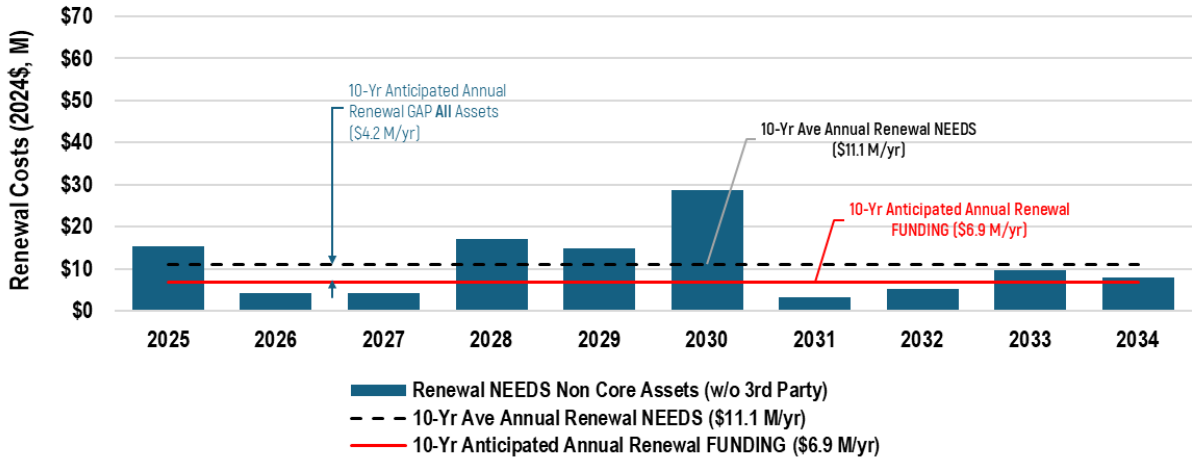
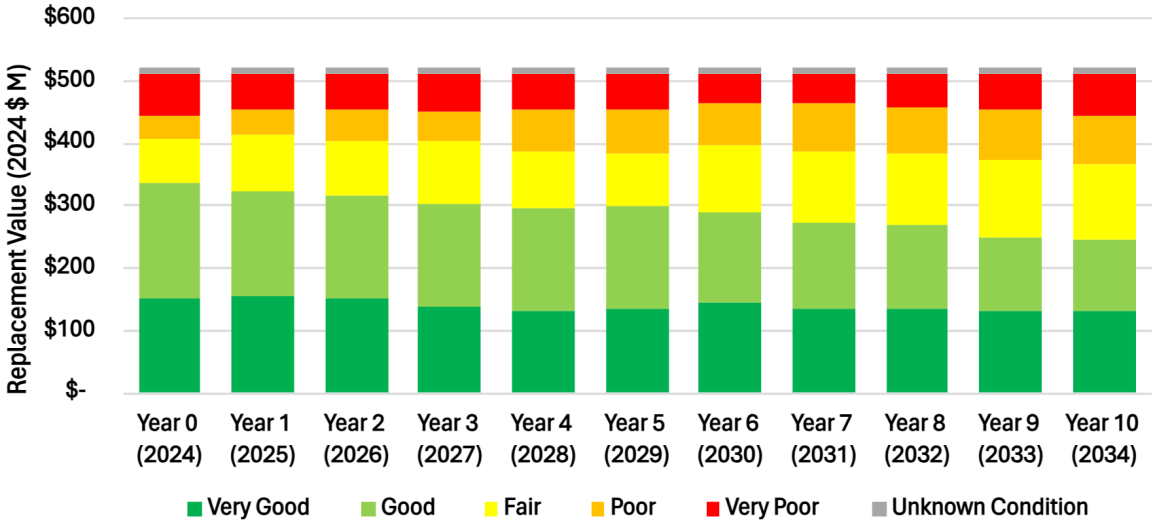


Figure 2-9 below shows the forecast condition distribution associated with funding the renewal needs as shown by the dashed line in Figure 2-8 (Maintaining Current LOS Scenario). The plot shows that the City's current LOS is maintained over the next ten years with $11.1M/year in funding. As the anticipated available funding of $6.9M/year is not sufficient to maintain the current LOS, the City will see increasing quantities of very poor assets over time. If assets are not renewed when they reach end-of-life, their probability of failure increases. Depending on the asset type and failure context, an asset failure may result in various negative impacts, such as service disruptions, injuries to employees or the public, and reputational harm to the organization.

As part of the asset renewal program, condition assessment frequencies and protocols are formalized for critical and high-value assets, and the recurring cost conducting condition assessments should be added to the capital needs schedule. For example, building condition assessments should be conducted at least every 5 years.

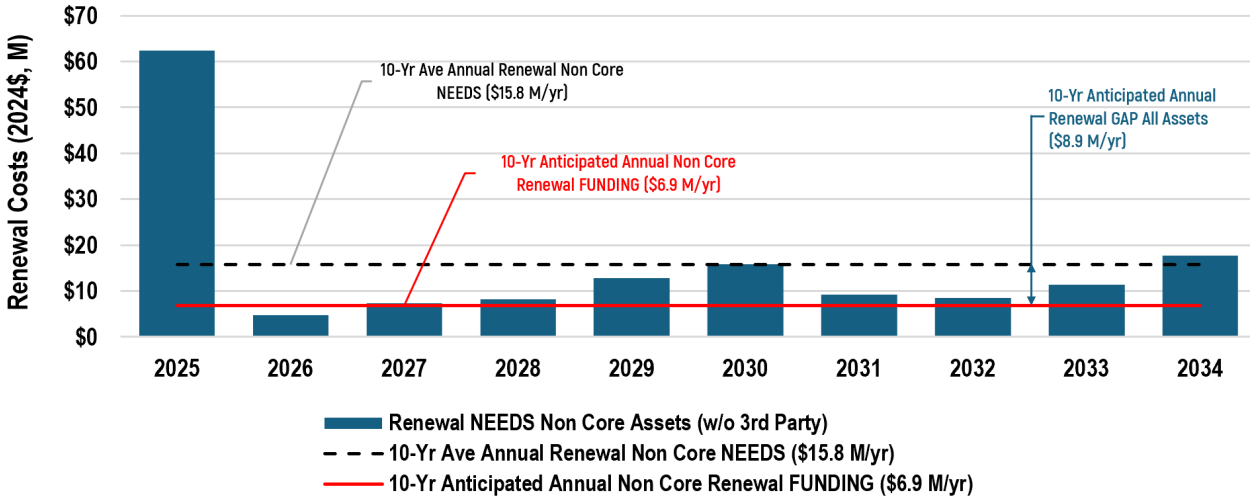
Figure 2-8: Condition Forecast, Maintain Current LOS (Renewal Backlog) Scenario



Unconstrained Budget Scenario

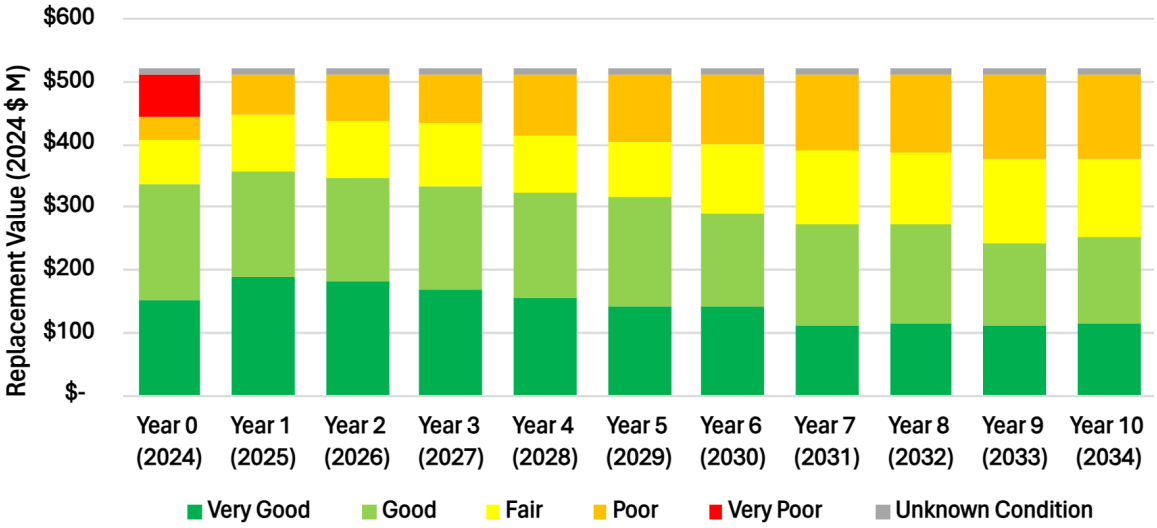
The average annual renewal needs to eliminate the current (2025) backlog of **$63 million** and to undertake renewal activities over the following nine years as and when required is **$15.8 million/year**. As with the previous scenario, the anticipated annual renewal funding for the same period is **$6.9 million/year**. This results in an average annual renewal funding gap of **$8.9 million/year** for each of the next 10 years. The following figure shows this scenario.

Figure 2-9: Infrastructure Renewal Needs – Unconstrained Budget Scenario



The resulting condition distribution over the next 10 years for this scenario is shown in the following figure. As seen in the unconstrained scenario, different from the maintain LOS scenario, the City's backlog of assets is cleared immediately in the first year.

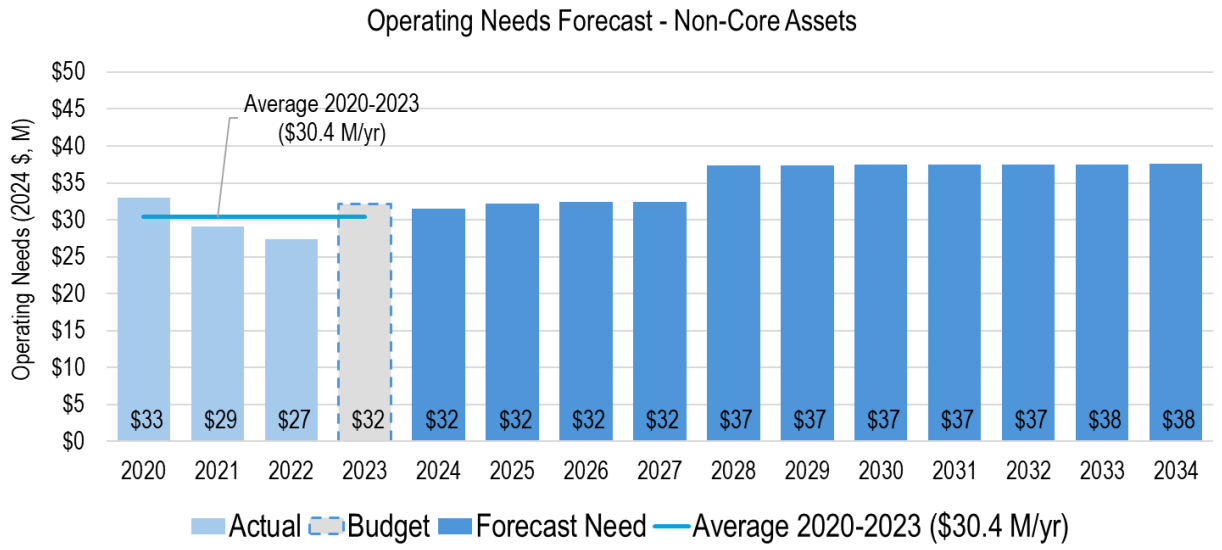
Figure 2-10: Condition Forecast, Unconstrained Planned Lifecycle Scenario



2.4.3 Operations and Maintenance Needs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of, the forecast operation and maintenance costs are expected to decrease. Figure 2-13 shows the forecast operations and maintenance costs for the next 10 years.

Figure 2-11: Operations and Needs Forecast



The figure shows that the estimated annual costs are expected to increase from a 2020-2023 average of $30.4 million/year to $38 million/year in 2034. All values are shown in 2024 $. **Forecast increases in operations and maintenance needs are due to estimated growth in the asset portfolio as indicated in the City's Capital Projects List,** which include the **planned opening of the new parking garage and the new operations centre.** Operational needs associated with the planned expansion of cemeteries are not included in Figure 2-13, because the design of the future cemeteries is not yet known.

Operations and maintenance needs are assumed to increase proportionally with the increase in the replacement value of the asset portfolio by asset type (i.e. facilities, vehicles, equipment). The estimate of operations and maintenance cost increases can be refined by conducting more detailed analysis of operating costs and work order costs, for example by asset sub-types or by maintenance activity.

For the period 2025-2034, the **annual operating and maintenance costs are expected to average $36.1 million/year.**

2.5 Financial Strategy

The financial strategy is informed by the preceding sections of the AM Plan: the state or condition of the assets, the proposed levels of service, the risks to service delivery, and the lifecycle activities needed to reduce the risks to service delivery to acceptable levels. The financial strategy considers how the City will fund the planned asset management actions to meet the current service levels.

A global leader in asset management, the Local Government Association of Australia defines financial sustainability within the municipal government context as "… a government's ability to manage its finances so it can meet its spending commitments, both now and in the future. It ensures future generations of taxpayers do not face an unmanageable bill for government services provided to the current generation".

A municipality is in a financially sustainable position if it:

- Provides a level of service commensurate with willingness and ability to pay.
- Can adjust service levels in response to changes in economic conditions or transfer payments from other levels of government.
- Can adjust its implementation plans in response to changes in the rate of growth.
- Has sufficient reserves and/or debt capacity to replace infrastructure when it needs to be replaced to keep its infrastructure in a state of good repair?

The key challenges to financial sustainability are:

- A discrepancy between level of service decisions and fiscal capacity
- The future cost of infrastructure investments
- Unforeseen impacts to revenue

Per O.Reg. 588/17, this section of the AM Plan identifies the annual funding projected to be available to undertake the planned lifecycle activities and discusses strategies to address potential funding shortfalls.

2.5.1 Available Funding Amounts and Sources

Through the City's annual budget process, capital project and operating activity expenditure information is gathered from services areas / asset managers, including investment needs, trends, and priorities to enable preparation of the capital and annual operating plans. In the past, the City approved one-year capital and operating plans and budgets. As O.Reg. 588/17 requires that AM Plans identify annual funding projected to be available for each of the next 10 years, the City now develops 10-year capital forecasts as part of the annual budget approval process.

The City's main sources of revenue for state of good repair work include property tax (including the capital levy), the Canada Community Building Fund, the Ontario Community Infrastructure Fund, third party grants, development charges, and user fees. These funding sources are further outlined in the following table. There are restrictions on the use of funds from various sources (e.g. development charges, user fees). The City also collects funds from the OLG Casino; however, these funds are typically used to fund City strategic investments, rather than asset renewal.

Table 2-10 below identifies the different funding sources available at the City to support "asset management" activities for core and non-core infrastructure.

Table 2-10: Asset Management Funding Sources

Name of Funding	Purpose or Restricted Use	Time Limit or Duration
Capital Levy (1.5%)	State of Good Repair - no asset type restrictions (assume roads, storm or non-core)	No Limit (amount will grow as levy grows, staff plans to push for increases to have more sustainable funding)
Operating Transfer	No Restrictions - also used to support strategic and BTE[1] portions of growth (assumed roads, storm or non-core)	No Limit
Water Transfer	Water Projects Only	No Limit
Wastewater Transfer	Wastewater Projects Only	No Limit
Fleet Transfer	Fleet Replacement Only	No Limit (Staff aim to increase over time)
Canada Community Building Fund	Several eligible categories. In practice, it's typically used for Core Assets (primarily roads), in 2024 the City used it for energy efficiency initiatives (LED lighting) and has used it for recreation facilities as well.	10-year agreement, funding provided in 5-year increments: 2024 (2,968,418.99) 2025 (3,092,103.12) 2026 (3,092,103.12) 2027 (3,215,787.24) 2028 (3,215,787.24)
Ontario Community Infrastructure Fund (OCIF)	Core Assets (primarily roads, bridges, and condition assessments)	Only available to municipalities with a population under 100,000 people.

[1] BTE: Benefit to Existing

Name of Funding	Purpose or Restricted Use	Time Limit or Duration
Development Charges	Growth projects to the degree eligible in the DC Background study - Benefit to Existing (BTE) excluded	The current By-Law expires in July 2024. Update is in progress.

The funding sources for each of the accounts below to support asset renewal needs for both core and non-core assets are provided below. It is important to note that OCIF funding is exclusively for municipalities with a population of less than 100,000. As such, the City may no longer be eligible for this funding in the near future, as it is expected to surpass 100,000 residents by 2026.

The City is currently in the process of updating its DC Background Study, where once completed, an approximate funding amount to support growth-related projects will be determined.

2.5.2 Financial Sustainability – Non-Core Assets

The funding available for asset management of Non-Core Assets was estimated based on an approximate proportion of each of the City's funding sources that would be applied to this purpose (as shown in Table 2-11 below). The overall annual funding estimated to be available for asset management needs of non-core assets is approximately $6.9 million/year (in 2024 $). The City does not allocate a dedicated funding amount by service area. Instead, funds are allocated organization-wide, to best achieve the Corporation's strategic priorities.

Table 2-11: Non-Core Asset Management Funding Sources

Name of Funding	Amount available to Corporation (2024 $)	% Available for AM of Non-Core Assets*	Amount Available for AM of Non-Core Assets (2024 $)
Capital Levy (1.5%)	$1,291,000	75%	$968,250
Operating Transfer	$3,500,000	75%	$2,625,000
Water Transfer	$6,080,000	0%	$0
Wastewater Transfer	$6,500,000	0%	$0
Fleet Transfer	$3,395,000	100%	$3,395,000
Canada Community Building Fund	$2,968,419	5%	$148,421
Ontario Community Infrastructure Fund (OCIF)	$5,875,546	0%	$0
Overall	**$29,609,965**	**23.2%**	**$6,874,171**

* % available for non-core assets was estimated with input from City Finance staff.

2.5.3 Overall City Infrastructure Gap – All Assets

As shown in Figure 2-12, the average renewal funding requirement for all City infrastructure is $57.4 million/year (2024 $), while the anticipated annual I renewal funding is $29.7 million/year. **This leaves an infrastructure renewal gap for all City assets of $427.7 million/year**. These values include renewal needs from the City's 2022 AM Plan for core assets (needs inflated to 2024 $), as well as renewal needs associated with Niagara Falls Public Libraries (see Appendix A), Niagara District Airport (see Appendix B) and the Niagara Falls Convention Centre (see Appendix C). The Niagara District Airport is jointly owned by the City of Niagara Falls, the City of St. Catharines and the Town of Niagara-on-the-Lake. The figure includes 37.4% of the Airport's renewal needs, in accordance with the City's share of funding responsibility.

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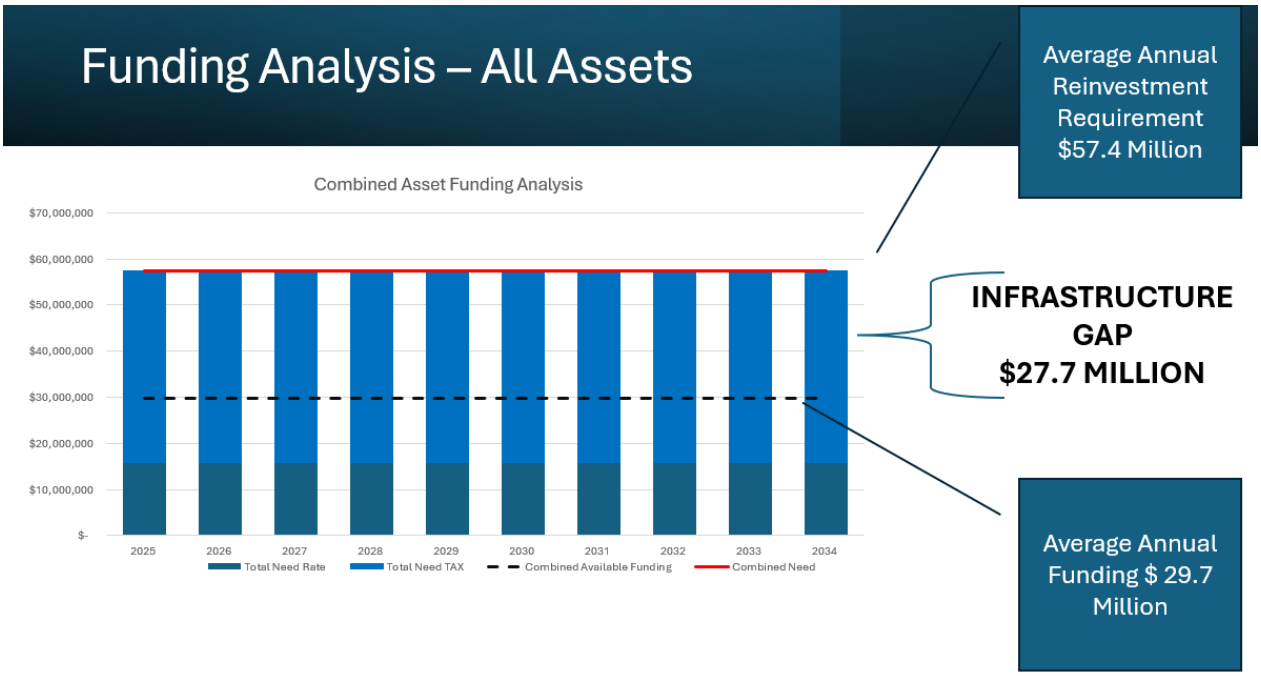
Figure 2-12: Infrastructure Renewal Needs, All City Assets



2.5.4 Strategies to Close Funding Gaps

The funding gaps may be closed by one or more of the following strategies:

- Reduce near term renewal needs by deferring capital renewal projects on lower risk assets, thereby lengthening the period in which the backlog is addressed beyond the 10 years. This may result in increased maintenance costs and risks to service delivery and corresponds to a reduction in service levels related to reliability and condition.
- Increase available funds through property tax increases, leveraging third party grants.
- Use Ontario Lottery and Gaming (OLG) funds for capital renewal. This will reduce funds available for strategic investments and is also susceptible to fluctuations of OLG revenue as witnessed during the COVID-19 pandemic.
- Reduce renewal needs by divesting of assets. This may reduce service levels related to capacity.

Debt funding and reserve funding may also be used; however, these are not sustainable solutions, since the debt funding must eventually be paid back, and reserves must be replenished.

3 Service Area Details

3.1 Transportation Services

3.1.1 Overview

Transportation services such as parking, traffic, and road operations, play a crucial role in ensuring smooth and efficient urban mobility. These services encompass a range of activities designed to manage and optimize transportation systems. Here's a description of transportation services for non-core infrastructure:

Road Operations Services:

- Maintenance and Repairs: Regularly inspecting and maintaining roads and other infrastructure to ensure safety and longevity.
- Asset Management: Implementing systems to track and manage road assets, including bridges, signs, and pavement, to prioritize maintenance and replacements.

Parking Services:

- Parking Management Systems: Implementing smart technologies to efficiently manage parking spaces, monitor occupancy, and facilitate real-time updates for drivers.
- Payment Solutions: Offering digital payment options, mobile apps, and contactless payment methods to streamline the payment process and enhance user experience.
- Enforcement and Compliance: Utilizing technology to enforce parking regulations, issue citations, and ensure compliance with parking rules.

Traffic Management Services:

- Traffic Signal Control Systems: Implementing intelligent traffic signal systems that use sensors and real-time data to optimize signal timing and reduce congestion.
- Traffic Monitoring and Analysis: Employing cameras, sensors, and analytics to monitor traffic flow, identify bottlenecks, and make data-driven decisions for improving traffic conditions.

3.1.2 State of Infrastructure

Assets that support non-core transportation infrastructure include Road Operations, Traffic and Parking. Table 3-1 shows the estimated replacement value of $99.9 million and includes a breakdown of the inventory by asset category. Road Operations assets make up most of the portfolio.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-1. Assets that are beyond their planned service lives can be found within the respective condition profiles as very poor condition.

Table 3-1: Inventory and Age Summary – Non-Core Transportation Infrastructure

Service	Asset Category	Asset Subcategory	Replacement Value (2024$)	Ave Age	Ave Service Life
Road Ops	Sub-Total		$76.3M		
	Signage		$0.3M	35	15
	Streetlight Lamps		$5.1M	6	14
	Streetlight Supports and Electrical	Streetlight Support, Electrical Distribution	$44.7M	39	60
	Barriers	Barricades, Fences, Walls, Guiderails, Jersey Barrier, Parapet, Retaining Wall, Pedestrian Rail	$7.8M	41	40

Service	Asset Category	Asset Subcategory	Replacement Value (2024$)	Ave Age	Ave Service Life
	Architectural Features	Lundy's Land Decorative Arches (Queen St. and Lundy's Lane), Signage	$2.3M	9	59
	Beautification & Street Furniture	Banner Poles, Bike Racks, Irrigation Systems, Tree Accessories	$1.8M	12	15
	Equipment	Construction Equipment and Vehicles, Trailers, Mowers, Plows	$3.9M	11	13
	Fleet	Road operations vehicles	$8.1M	9	14
	Facilities	Operations Centre West	$2.4M	23	66
Traffic	**Sub-Total**		**$19.2M**		
	Traffic Signals	Conductors, Control Cabinet, Junction Boxes, Poles, Signals, Pedestrian & Vehicle Detection	$17.5M	25	18
	Traffic Control	Flasher, Pedestrian Crossover, Radar Speed Board, Train Sensor	$0.6M	5	12
	Traffic Calming	Speed Cushion, Raised Crosswalk, Speed Hump, Curb Extension, Roundabouts	$0.8M	9	12
	Equipment	Air Jack Hammer, Pneumatic Medium Breaker	$0M	4	10
	Fleet		$0.3M	6	13
Parking	**Sub-Total**		**$4.4M**		
	Parking Lots	Asphalt, Curb, Lighting, Guardrail, Catch Basins, Signage, EV Charging Stations	**$2.7M**	28	32
	Parking Meters	Parking Meters, Meter Poles	**$1.6M**	21	11
	Fleet		**$0.1M**	3	8
		TOTAL	**$99.9M**		

The condition distribution for the City's non-core Transportation assets shown in Figures 3-1 to 3-3. The condition of these assets was predominantly inferred based on asset age and remaining service life, however detailed condition assessments of parking lot pavement and numerous City buildings were completed in 2023.and traffic signal condition was provided by the Region of Niagara as the City's traffic signal maintainers.

The figures show the relative replacement value, by asset category, and the proportion of assets by condition grade. The figures show that:

- 52.5% of Road Operations assets are in fair or better condition, 16.5% are in poor condition and 30.9% are in very poor condition.
- 91.8% of Traffic Services assets are in fair or better condition, 6.6% are in poor condition and 1.6% are in very poor condition.
- 54.0% of Parking Services assets are in fair or better condition, 16.6% are in poor condition and 29.3% are in very poor condition.

Many of the existing parking meters (single-space meters) are in very poor condition based on age; however, the City currently has an ongoing a program to replace existing meters with pay-by-plate smart meters.

Figure 3-1: Condition Distribution by Replacement Value, Road Operations

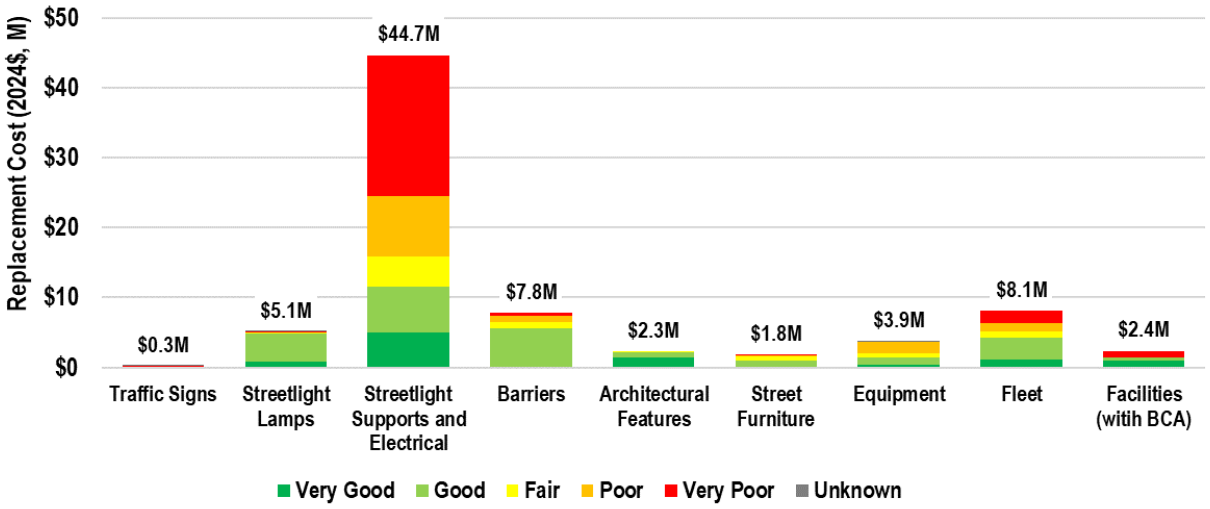


Figure 3-2: Condition Distribution by Replacement Value, Traffic Services

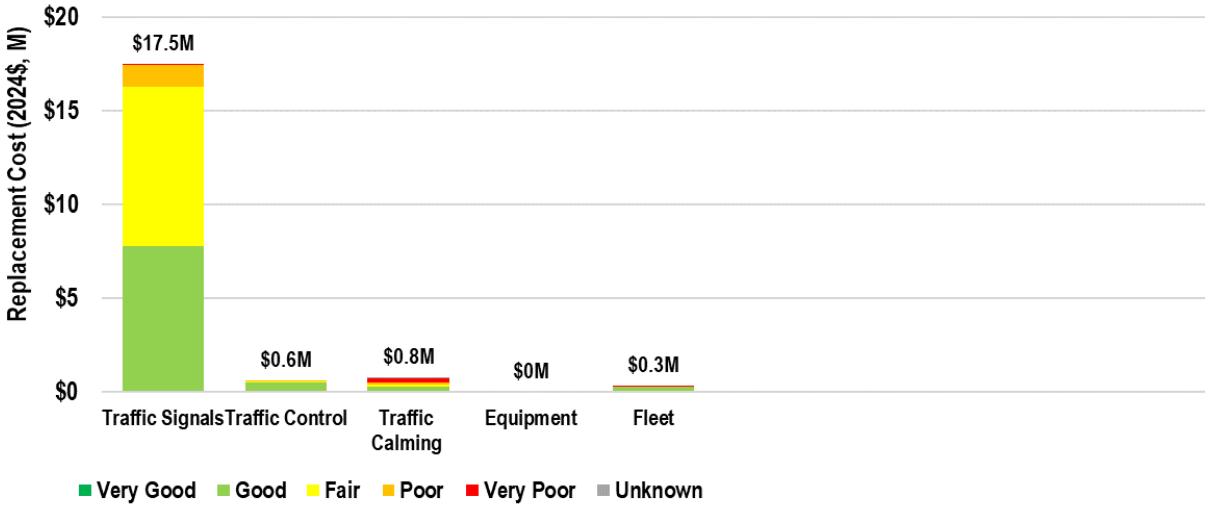
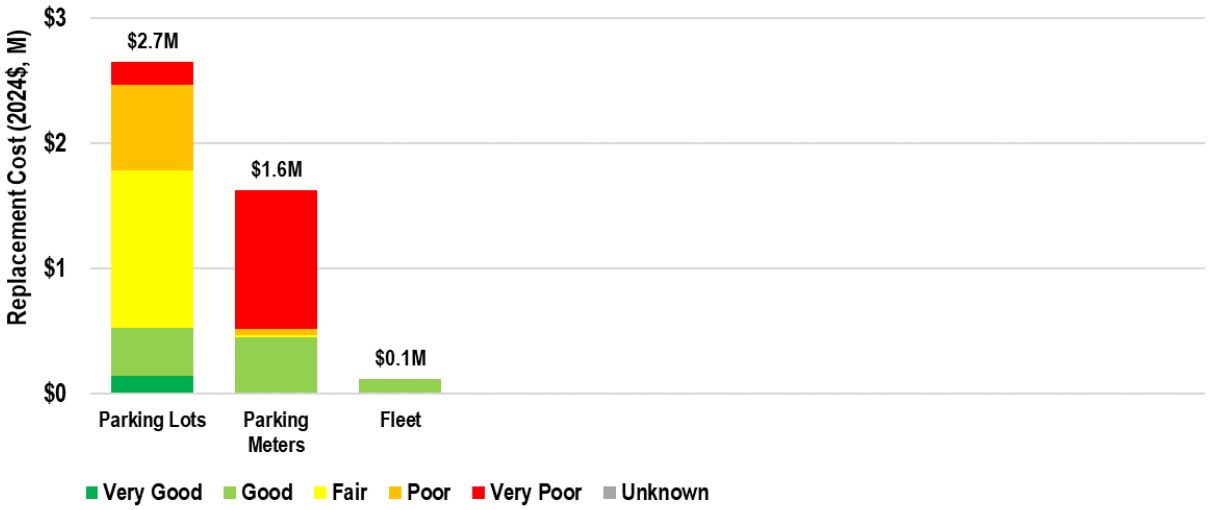


Figure 3-3: Condition Distribution by Replacement Value, Parking Services



3.1.3 Levels of Service

Table 3-2 provides the technical LOS for the City's non-core transportation infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-2 Technical LOS, Non-Core Transportation Infrastructure

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
Roadways and boulevards are safe, accessible and efficient for all users	Number of signalized intersections meeting City's accessibility standards (or % of intersections)	Future metric. Data not currently available.
	Number of snowplows per centerline-km • Regular • Narrow	can be calculated
	% of streetlights converted to LED • Standard • Decorative	Future metric. Data under review
	Number of collisions on City-owned roads	Future metric. Data not currently available.
	Number of EV charging stations (Strategic Plan, target completion: April)	Future metric. Data not currently available.1
	Parking lot utilization	Future metric. Data not currently available.
	% of recommendations from Transportation Master Plan implemented (wayfinding improvements, parking study, Active Transportation improvements, initiatives, roadway improvements).	Future metric. Data not currently available.

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	Road Operations – 30.9% Traffic Services – 1.6% Parking – 29.3%
	% of regulatory and warning signs compliant with retro-reflectivity requirements (alternative metric may service time for regulatory and warning signs)	Future metric. Data not currently available.
	% planned traffic signal rebuilds completed	Future metric. Data not currently available.
	Pavement Condition Index (PCI) of parking lots	Average PCI = 63 (Fair)
	% work orders completed on time	Future metric. Data not currently available.

3.1.4 Risk Management Strategy

The risk map shown as Figure 3-4 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for all infrastructure represented within the Service Area The assets shown as a High and Very High risk exposure (yellow and red) consists of predominantly **streetlight support and electrical distribution assets in poor or very poor condition** (these assets have a CoF of 4 - major consequence).

Figure 3-4 Risk Exposure of the City's Non-Core Transportation Infrastructure

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.44	$1.31	$1.70	$21.69	$0.00
Likely	$0.18	$1.02	$2.07	$11.33	$0.00
Possible	$0.52	$1.37	$1.44	$14.18	$0.00
Unlikely	$4.90	$1.73	$4.90	$20.59	$0.00
Rare	$0.82	$0.08	$1.67	$7.67	$0.00

Consequence of Failure

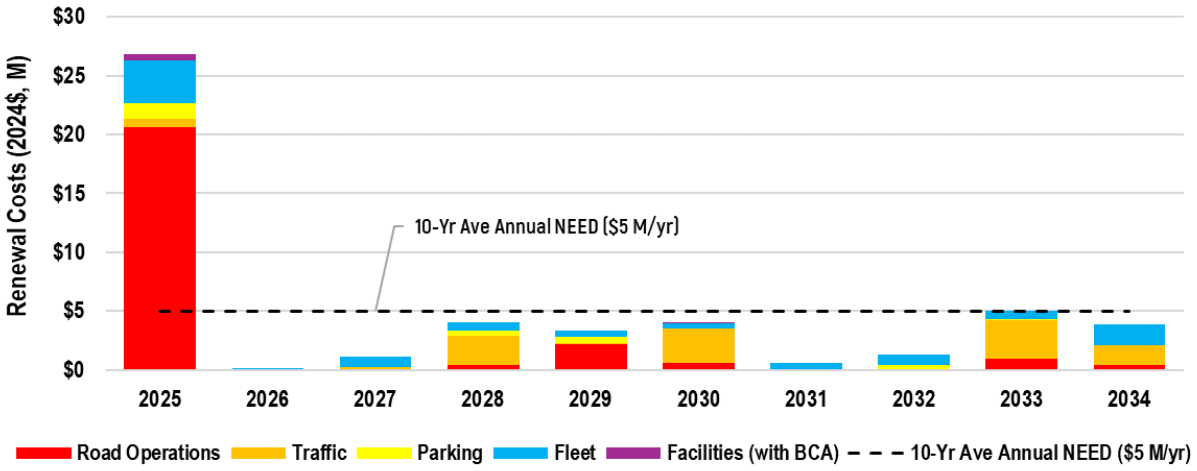
Risk Exposure Ratings

Very High	$21.7	21.7%
High	$29.3	29.3%
Moderate	$31.1	31.1%
Low	$11.8	11.8%
Very Low	$5.8	5.8%
Unknown	$0.2	0.2%
TOTAL	**$99.9**	**100.0%**

3.1.5 Lifecycle Management Strategy

Figure 3-5 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for the City's parking asphalt and facilities. The average renewal need (dotted black line) is estimated at $5.0 million/year for the period 2025-2034. However, the renewal need in 2025 is close to $27 million, representing an elevated backlog of needs due to streetlight poles.

Figure 3-5: Forecasted Renewal Needs, Non-Core Transportation Services



3.2 Parks and Trails

3.2.1 Overview

Parks and trails infrastructure refers to the physical components and facilities that make up public recreational spaces and pathways. The design and development of this infrastructure aim to provide diverse and accessible spaces for community members to engage in outdoor activities, connect with nature, and enjoy a range of recreational opportunities. This includes assets such as:

- Playgrounds: Equipped with structures for children's play, often including swings, slides, and climbing structures.
- Sports Fields and Courts: Areas designated for organized sports such as soccer, baseball, basketball and tennis.
- Shelters and Pavilions: Covered areas for protection from the elements during gatherings.
- Paths and Trails: Paved, gravel and naturalized routes for a variety of activities including walking, jogging, cycling, and inline skating.
- Aquatic Features

3.2.2 State of Infrastructure

The City currently owns 95 Park Lands, according to the GIS inventory, of which 11 are designated as Underdeveloped Park Lands leaving a remaining 84 parks that are currently operated, inspected, and maintained by City staff. The City also owns and maintains a system of paths within its parks and trails that link its parks and neighbourhoods across the city. The City's 22km of paths and 16km of trails include paved, gravel and naturalized surfaces to cater to a variety of uses including walking, jogging, inline skating, and cycling. A condition assessment of the paved surfaces, completed in 2023, found the trails to be in Good to Very Good condition.

Assets that support parks and trails include aquatic features, parkland, recreation spaces, signage, playgrounds, equipment, facilities and more. Table 3-3 shows the estimated replacement value of $71.4 and includes a breakdown of the inventory by asset category. Site works, playgrounds and facilities assets make up most of the portfolio.

The City is still collecting information on some of its park facilities and is working to close existing data gaps. Shelters and/or pavilions at the following parks were not assessed or included as part of this AM Plan:

- Bark Park
- Crowland Park
- John N Allan Park
- Stamford Lions Park
- Stonefield Park
- W L Houck Park
- Millenium Recreational Trail (Dr Henry)
- Millenium Recreational Trail (John McCall).

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-3. Assets that are passed their planned service lives can be found within the respective condition profiles as very poor condition.

Table 3-3: Inventory and Age Summary – Parks and Trails

Service	Asset Category	Asset Subcategory	Replacement Value (2024$)	Ave Age	Ave Service Life
Parks and Trails	**Sub-Total**		**$80.8M**		
	Amenities / Furniture		$2.4M	11	13
	Aquatic Features		$5.7M	30	10
	Site Works		$15.4M	22	24

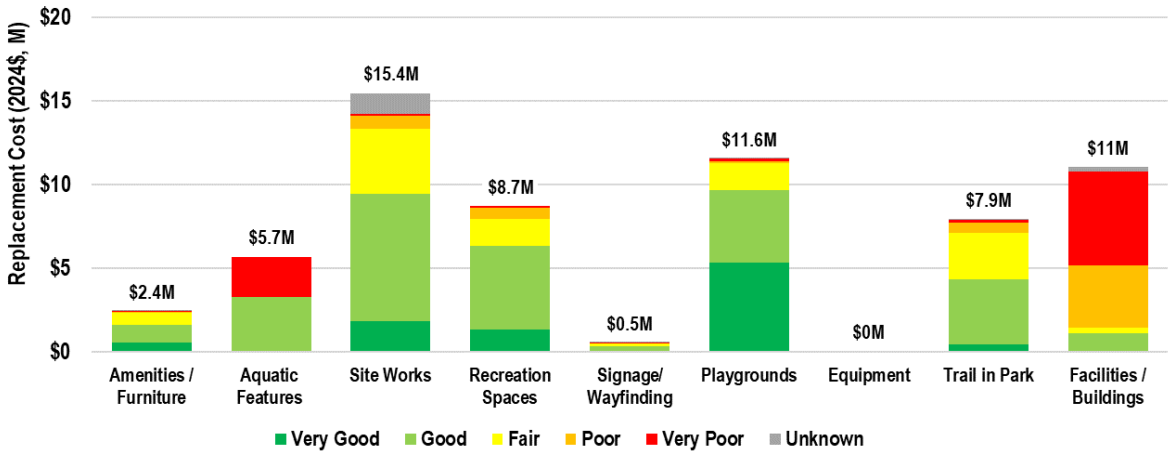
Service	Asset Category	Asset Subcategory	Replacement Value (2024$)	Ave Age	Ave Service Life
	Recreation Spaces		$8.7M	15	22
	Signage/ Wayfinding		$0.5M	11	15
	Playgrounds		$11.6M	9	20
	Equipment		$0M	39	10
	Trail in Park	Asphalt Trails, Other Trails	$7.9M	15	24
	Facilities / Buildings		$11M	39	37
	Trail not in Park	Asphalt Trails, Other Trails	$6.3M	10	22
	Fleet		$0.3M	6	12
	Facilities (with BCA)		$10.9M	2	5

The condition distribution for the City's Parks and Trails assets shown in Figure 3-6. Condition for these assets were predominantly based on asset age and remaining service life but also via visual confirmation by staff. Building condition assessments were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

- Chippawa Lions Park
- EE Mitchelson Park
- FH Leslie Park
- Kalar Sports Club
- NF Lions Park
- Prince Charles Park.

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall**, 79.9% of Parks and Trails assets are in fair or better condition, 8.3% are in poor condition, meaning they are nearing their end of life, and 11.9% are in very poor condition, meaning they are due or overdue for replacement.**

Figure 3-6: Condition Distribution by Replacement Value, Parks and Trails



3.2.3 Levels of Service

Table 3-4 provides the technical LOS for the City's Parks and Trails infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-4 Technical LOS, Parks and Trails

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
Residents have access to outdoor leisure and recreation opportunities	Total parkland supply meets Official Plan targets for neighborhood parks	Yes – 1.4 ha/1000people
	Total parkland supply meets Official Plan targets for community parks	Yes – 1.0 ha/1000 people
	Total parkland supply meets Official Plan targets for city-wide parks	Yes – 2.5 ha/1000 people
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	11.0%
	% required playground inspections completed on time and documented	Future metric. Data not currently available.
	% work orders completed on time	Future metric. Data not currently available in Cartegraph.

3.2.4 Risk Management Strategy

The risk map shown as Figure 3-7 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. No assets are shown as a Very High-risk exposure (red). The assets at Very High risk exposure are components of the Kalar Sports Club building, specifically, the sealant joints of the exterior walls and the roof shingles of the gazebo.

Figure 3-7 Risk Exposure of the City's Parks and Trails

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.03	$8.64	$0.00	$0.02	$0.00
Likely	$0.00	$6.85	$0.00	$0.02	$0.00
Possible	$0.03	$12.47	$0.00	$0.22	$0.00
Unlikely	$0.03	$29.67	$0.39	$0.15	$0.00
Rare	$0.00	$10.53	$0.44	$9.66	$0.00

Consequence of Failure

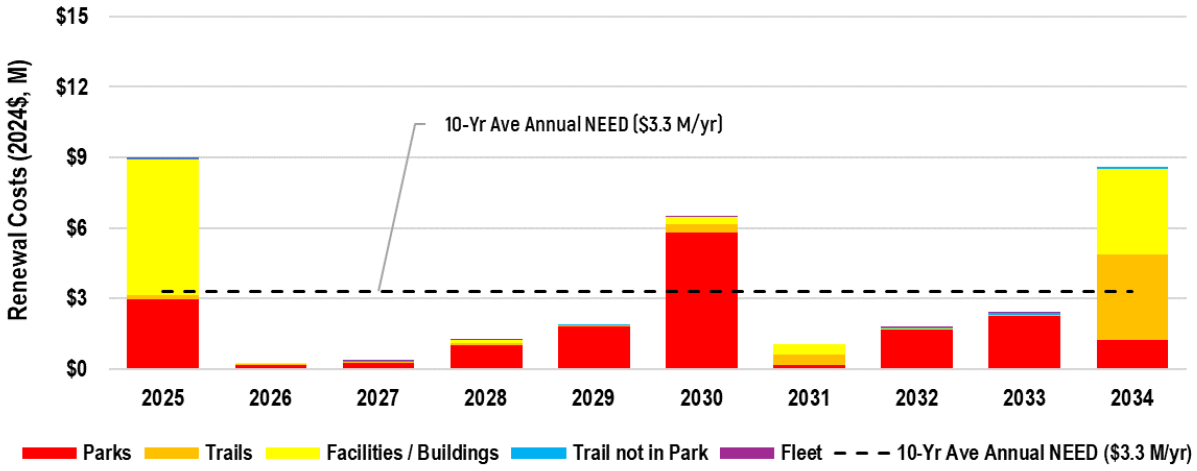
Risk Exposure Ratings

Very High	$0.0	0.0%
High	$0.2	0.3%
Moderate	$28.5	35.3%
Low	$39.8	49.3%
Very Low	$10.6	13.1%
Unknown	$1.6	2.0%
TOTAL	**$80.8**	**100.0%**

3.2.5 Lifecycle Management Strategy

Figure 3-8 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, observed condition needs assessment data was utilized for the City's park assets. The average renewal need (dotted black line) is estimated at $3.3 million/year for the period 2025-2034. However, the renewal needs in 2025 is close to $9 million, representing an elevated backlog of needs.

Figure 3-8: Forecasted Renewal Needs, Parks and Trails



3.3 Natural Assets

3.3.1 Overview

Natural assets in municipalities refer to the natural features and resources within a community that provide various ecological, social, and economic benefits. These assets play a crucial role in enhancing the overall well-being and sustainability of a municipality. Some common natural assets and the purposes they serve:

- Natural habitats, such as forests, grasslands, and wetlands, support biodiversity by providing homes and food sources for various plant and animal species. Biodiversity is essential for ecosystem resilience and maintaining ecological balance.
- Natural corridors connect fragmented habitats, allowing wildlife to move freely. They support biodiversity by facilitating the migration of species, reducing the risk of population isolation and genetic decline.

Assessing natural assets within AM Plans is a new and emerging field for many municipalities across Canada as assessing typical infrastructure attributes such as replacement cost, condition, and service life and unique to traditional built assets.

The City is currently participating with the Natural Assets Initiative in association with Intact Public Entities[2] to develop a Natural Asset Management Roadmap which works with Canadian municipal organizations to identify, formalize, and develop a natural asset roadmap for the City. Outcomes of which will be provided to Council at a later date.

3.3.2 State of Infrastructure

Assets that support natural assets include trees, woodlots, wetlands and watercourses, equipment and fleet. Table 3-5 shows the estimated replacement value of $38.5 million and includes a breakdown of the inventory by asset category. Trees and woodlots make up most of the portfolio. Tree values were included in the tree inventory data. Replacement values of woodlots, wetlands and watercourses reflect potential restoration costs estimated by the Credit Valley Conservation Authority. For woodlots, the estimated restoration cost is $215k/hectare, and for wetlands, estimated restoration cost is $385k/hectare. For small watercourses, the restoration cost is $1,700/m and for large watercourses the restoration cost is $2,390/m. For watercourses, the inventory includes only the segments within City-owned property.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-5. The City is continuing to collect inventory data on its natural assets, including tree data. The City will fill data gaps for the next iteration of the AM Plan.

[2] https://www.intactpublicentities.ca/

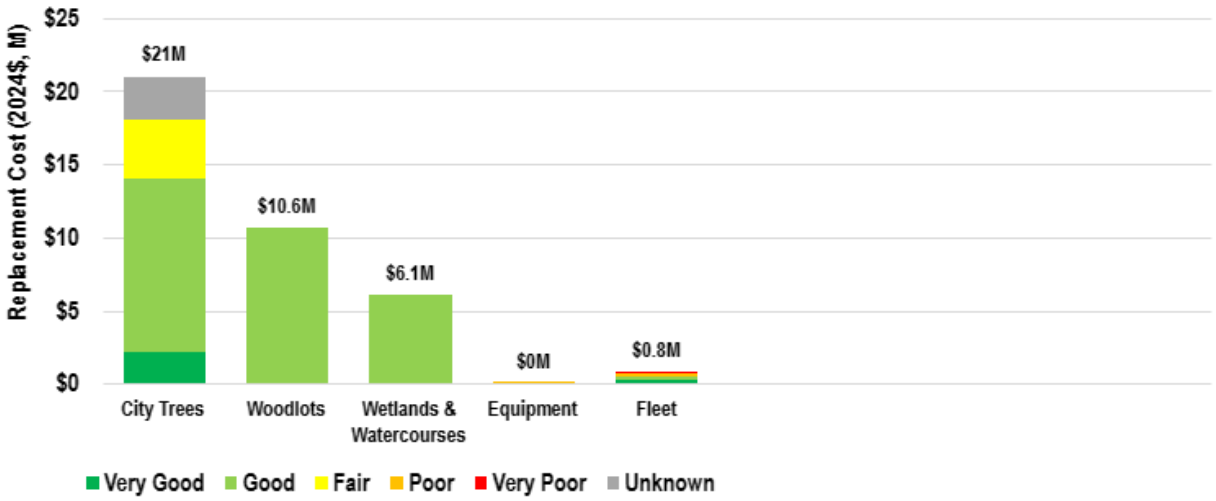
Table 3-5: Inventory and Age Summary – Natural Assets

Service	Asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Natural Assets	Sub-Total	$38.5M		
	Trees	$21M	-	-
	Woodlots	$10.6M	-	-
	Wetlands & Watercourses	$6.1M	-	-
	Equipment	$0.31M	7	10
	Fleet	$0.8M	5	10

The condition distribution for the City's natural assets is shown in Figure 3-9.Condition value split approximations were utilized to assess the condition of trees, woodlots and wetlands. In general, the City has assumed that all woodlots and wetlands are in 'good' condition for the purposes of this AM Plan.

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall, 99.0% of natural assets are in fair or better condition, 0.9% are in poor condition and none are in very poor condition.

Figure 3-9: Condition Distribution by Replacement Value, Natural Assets



3.3.3 Levels of Service

Table 3-6 provides the technical LOS for the City's natural asset infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-6 Technical LOS, Natural Assets

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
NF residents have access to nature	Urban Forest Study developed (RCP5-5)	Future metric. Data not currently available.
Natural assets contribute to public health by reducing heat stress through provision of shade	% canopy cover (estimated local temp. reduction based on % canopy cover)	Future metric. Data not currently available.
Quality		
Natural Assets are in a state of good repair to provide reliable services to the community	% trees are pruned on time per Best Management Practices (work orders)	Future metric. Data not currently available in Cartegraph
	% tress inspected per Best Management Practices	Future metric. Data not currently available in Cartegraph
	Standards established for planting, care, removal, replacement of street and park trees (RCP5-6)	Future metric. Data not currently available.
	Woodlot Management Plan updated (RCP5-7)	Future metric. Data not currently available.
	% assets not fit for service (at or passed planned service life)	0.1%

3.3.4 Risk Management Strategy

The risk map shown as Figure 3-10 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. No assets are shown as a Very High-risk exposure (red).

Figure 3-10 Risk Exposure of the City's Natural Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.04	$0.00	$0.00	$0.00	$0.00
Likely	$0.00	$0.04	$0.27	$0.00	$0.00
Possible	$0.00	$4.00	$0.00	$0.00	$0.00
Unlikely	$0.00	$28.66	$0.22	$0.00	$0.00
Rare	$0.00	$2.12	$0.25	$0.00	$0.00

Consequence of Failure

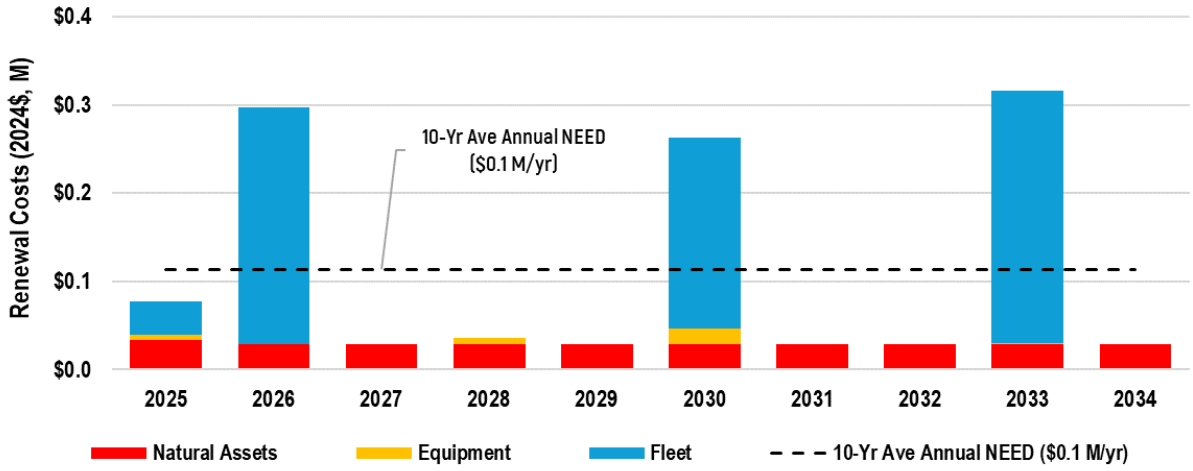
Risk Exposure Ratings

Very High	$0.0	0.0%
High	$0.3	0.7%
Moderate	$4.3	11.2%
Low	$28.9	75.1%
Very Low	$2.1	5.5%
Unknown	$2.9	7.6%
TOTAL	**$38.5**	**100.0%**

3.3.5 Lifecycle Management Strategy

Figure 3-11 shows the renewal needs over the next 10 years by service. Renewal needs for natural assets were predominantly based utilizing the average annual renewal rate for assets (total replacement value divided by the service life). The average renewal need (dotted black line) is estimated at $0.1 million/year for the period 2025-2034.

Figure 3-11: Forecasted Renewal Needs, Natural Assets



3.4 Municipal Administration

3.4.1 Overview

Municipal administration plays a crucial role in the effective functioning and development of a municipality. The term "municipal administration" refers to the organizational structure, processes, and activities involved in managing the affairs of a local government or municipality. The role of municipal administration is multifaceted and includes various responsibilities.

- Centralized Information Technology: The role of Corporate Information Technology (IT) at the City is critical for efficient operations, service delivery, and overall governance across the City. Corporate IT encompasses the use of technology to support various municipal functions, enhance communication, and streamline processes.
- Corporate facilities: The role of corporate facilities within the City encompasses the planning, management, and maintenance of physical spaces for employees to support the efficient and effective functioning of the business.
- Corporate furniture: The role of corporate furniture is to support all services.

3.4.2 State of Infrastructure

Assets that support Municipal Administration include information technology, fleet, facilities and furniture. Table 3-7 shows the estimated replacement value of $60.1 and includes a breakdown of the inventory by asset category. Major facilities such as the City Hall and Operations Centre East make up most of the portfolio.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-7. Assets that are passed their planned service lives can be found within the respective condition profiles as very poor condition.

Table 3-7: Inventory and Age Summary – Municipal Administration

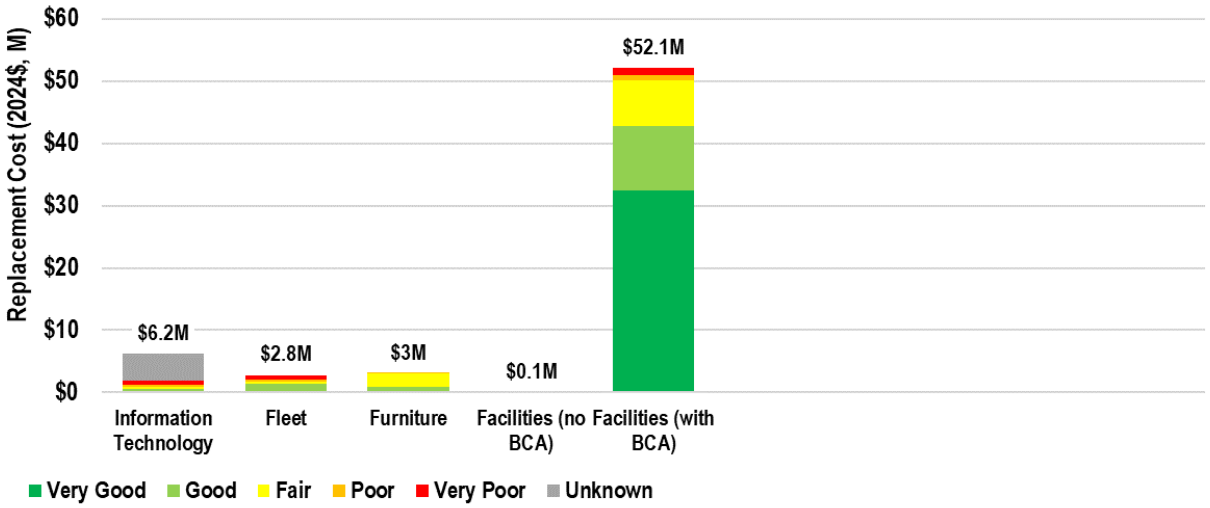
Service	Asset Category	Sub Asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Municipal Administration	Sub-Total		$61.1M		
	Information Technology	Hardware, Networking, Software	**$6.2M**	4	4-10
	Fleet		**$2.8M**	7	11
	Facilities		**$52.1M**	-	50
	Corporate Furniture	Desks, chairs, tables	**$3.0M**	-	-

The condition distribution for the City's Municipal Administration assets shown in Figure 3-12. Condition for these assets were predominantly based on asset age and remaining service life. Building condition assessments were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

- City Hall
- Intercity Bus Terminal
- Operations Centre East
- Wayne Thompson Building

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall, 93.8% of Municipal Administration assets are in fair or better condition. 3.5% are in poor condition and 2.7% are in very poor condition. Software makes up the unknown Information Technology assets.

Figure 3-12: Condition Distribution by Replacement Value, Municipal Administration



3.4.3 Levels of Service

Table 3-8 provides the technical LOS for the City's Municipal Administration infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-8 Technical LOS, Municipal Administration

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
City has sufficient capacity to meet expected application and data storage needs	Future metric. Data not currently available.	Future metric. Data not currently available.
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	4.5%
	% IT work orders completed on time	Future metric. Data not currently available.
	% Facilities work requests completed on time	Future metric. Data not currently available

Risk Management Strategy

The risk map shown as Figure 3-13 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. The $8.2 million shown as a High and Very High-risk exposure (yellow and red) consists of predominantly of facility and critical IT (i.e. servers) assets in poor or very poor condition (these assets have a CoF of 4 - major consequence).

Figure 3-13 Risk Exposure of the City's Municipal Administration Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.19	$0.74	$0.19	$1.45	$0.00
Likely	$0.02	$0.26	$0.24	$0.93	$0.00
Possible	$0.02	$0.52	$2.06	$5.39	$0.00
Unlikely	$0.43	$1.09	$1.83	$8.90	$0.00
Rare	$0.01	$0.17	$15.07	$17.30	$0.00

Consequence of Failure

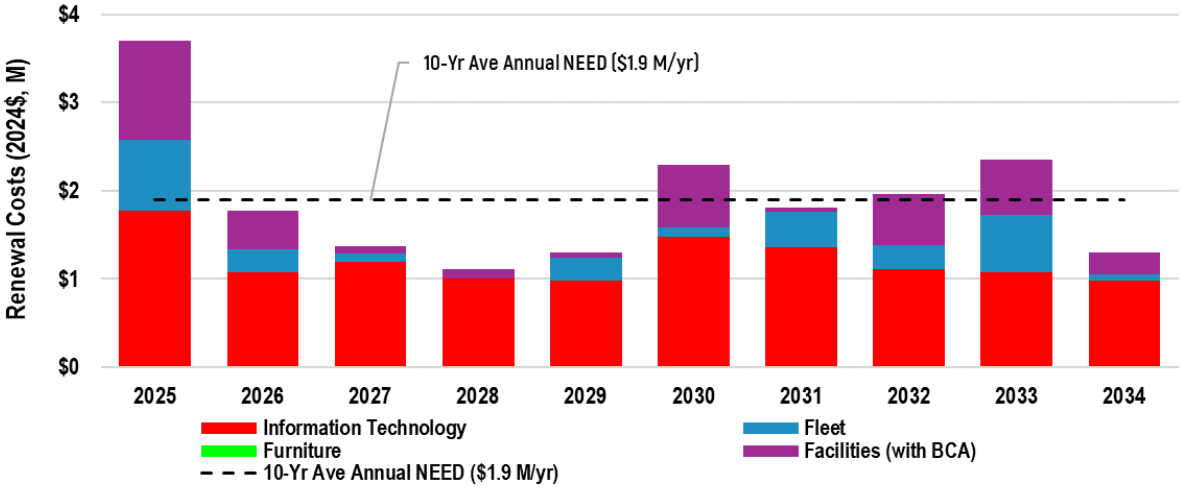
Risk Exposure Ratings

Very High	$1.5	2.4%
High	$6.7	11.0%
Moderate	$14.5	23.7%
Low	$33.5	54.8%
Very Low	$0.6	1.0%
Unknown	$4.3	7.0%
TOTAL	**$61.1**	**100.0%**

3.4.4 Lifecycle Management Strategy

Figure 3-14 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for the City's Municipal Administration assets. The average renewal need (dotted black line) is estimated at $1.9 million/year for the period 2025-2034. However, the renewal needs in 2025 is close to $4 million, representing an elevated backlog of needs.

Figure 3-14: Forecasted Renewal Needs, Municipal Administration



3.5 Recreation Services

3.5.1 Overview

Recreation infrastructure services in a municipality play a vital role in enhancing the quality of life for residents and contributing to the overall well-being of the community. These services focus on creating and maintaining facilities that support various recreational activities, promoting physical fitness and social interaction. Recreation spaces such as community centres, sports complexes, and fitness centres promote physical activity and support healthy lifestyles.

3.5.2 State of Infrastructure

Assets that support Recreation Services include fleet and facilities. Table 3-9 shows the estimated replacement value of $134.6M and includes a breakdown of the inventory by asset category. Major facilities such as the Gale Centre and the MacBain Community Centre make up most of the portfolio.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-9. Assets that are passed their planned service lives can be found within the respective condition profiles as very poor condition.

Table 3-9: Inventory and Age Summary – Recreation Services

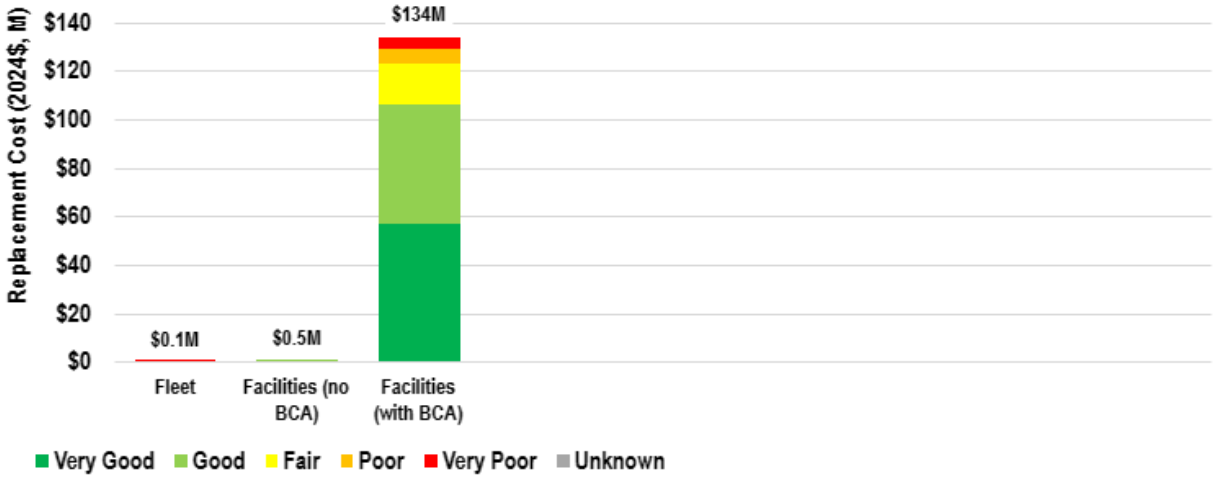
Service	Asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Recreation Services	**Sub-Total**	**$134.6M**		
	Fleet	**$0.08M**	-	9
	Facilities (Chippawa Memorial Arena, Gale Centre, MacBain Centre)	**$134.5M**	-	50

The condition distribution for the City's Recreation Services assets shown in Figure 3-15. Condition for these assets were predominantly based on asset age and remaining service life. Building condition assessments were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

- Chippawa Memorial Arena (0% service life remaining – to be demolished and re-built)
- Gale Centre
- MacBain Community Centre.

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall, 86.2% of Recreation Services assets are in fair or better condition, 10.6% are in poor condition and 3.2% are in very poor condition.

Figure 3-15: Condition Distribution by Replacement Value, Recreation Services



3.5.3 Levels of Service

Table 3-10 provides the technical LOS for the City's Recreation infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-10 Technical LOS, Recreation Services

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	3.9%
	% required playground inspections completed on time and documented	Future metric. Data not currently available in Cartegraph
	% maintenance work orders completed on time	Future metric. Data not currently available in Cartegraph
	Number of days of facility closures due to unplanned asset failures	Future metric. Data not currently available in Cartegraph

3.5.4 Risk Management Strategy

The risk map shown as Figure 3-16 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. No assets are shown as a High and Very High-risk exposure (yellow and red), meaning there is little to no risk exposure to the City for these assets based on current condition and criticality.

Figure 3-16 Risk Exposure of the City's Recreation Services Assets

Risk Exposure in Year 2024$, millions

Probability of Failure						
Certain	$0.00	$5.22	$0.00	$0.00	$0.00	
Likely	$0.03	$5.82	$0.00	$0.00	$0.00	
Possible	$0.00	$16.83	$0.00	$0.00	$0.00	
Unlikely	$0.03	$49.97	$0.00	$0.00	$0.00	
Rare	$0.00	$56.72	$0.00	$0.00	$0.00	

Risk Exposure Ratings

Very High	$0.0	0.0%
High	$0.0	0.0%
Moderate	$27.9	20.7%
Low	$50.0	37.1%
Very Low	$56.7	42.2%

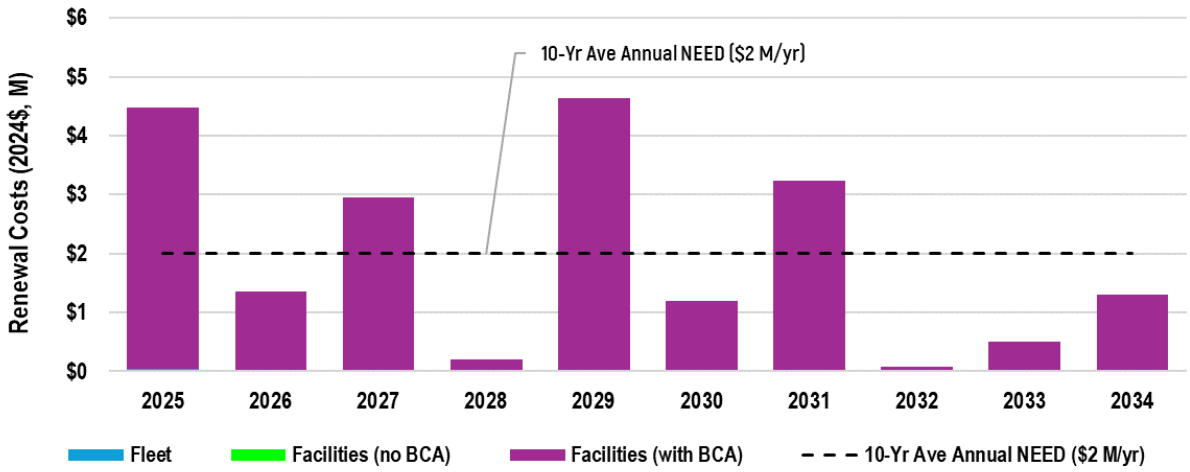
Insignificant	Minor	Moderate	Major	Catastrophic
Consequence of Failure				

Unknown	$0.0	0.0%
TOTAL	**$134.6**	**100.0%**

3.5.5 Lifecycle Management Strategy

Figure 3-17 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for the City's Recreation assets. The average renewal need (dotted black line) is estimated at $2.0 million/year for the period 2025-2034.

Figure 3-17: Forecasted Renewal Needs, Recreation Services



3.6 Cultural Services

3.6.1 Overview

Culture services within a municipality refer to the range of programs, facilities, and initiatives that support and promote cultural development, artistic expression, heritage preservation, and creative activities within the community. These services are designed to enhance the cultural vitality of the municipality, foster community engagement, and contribute to the overall well-being and identity of its residents.

3.6.2 State of Infrastructure

Assets that support Culture Services include program equipment and facilities. Table 3-11 shows the estimated replacement value of $31.5 and includes a breakdown of the inventory by asset category. Major facilities such as the Niagara Falls History Museum and the Niagara Falls Exchange make up most of the portfolio.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-11. Assets that are passed their planned service lives can be found within the respective condition profiles as very poor condition.

Table 3-11: Inventory and Age Summary – Culture Services

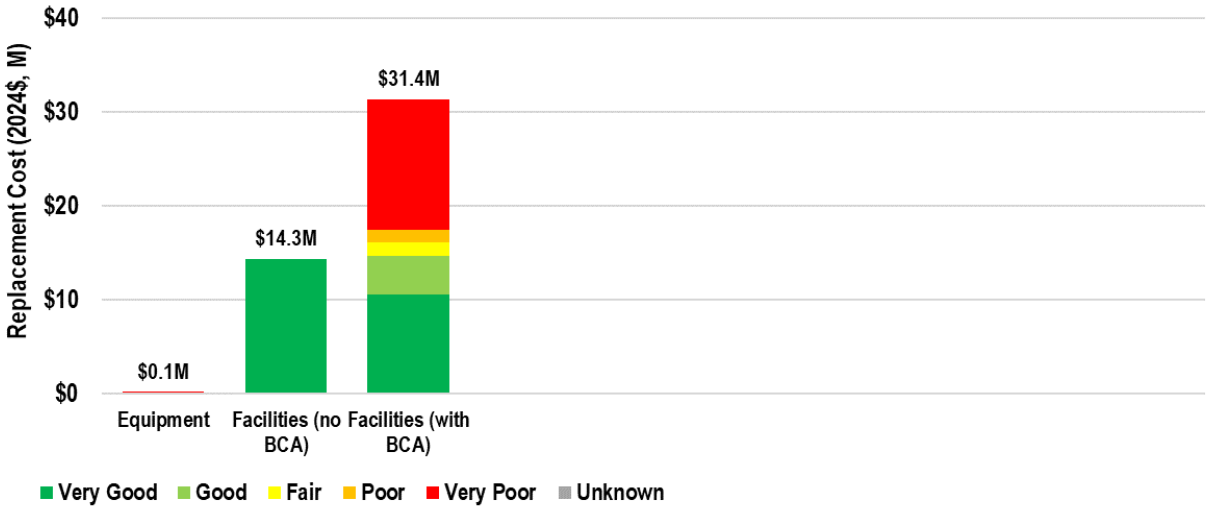
Service	Asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Culture Services	**Sub-Total**	**$45.8M**		
	Equipment	**$0.1M**	-	5-20
	Facilities	**$45.7.4M**	-	50

The condition distribution for the City's Culture Services assets is shown in Figure 3-18. Condition for these assets were predominantly based on asset age and remaining service life. Building condition assessment were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

- Battleground Hotel Museum
- Niagara Falls History Museum
- Fire Hall Theatre.

The Niagara Falls Exchange is a brand-new facility at the City, so it was assumed to be in 'Very Good' condition. The figure shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall, 66.7% of Culture Services assets are in fair or better condition, 2.9% are in poor condition and 33.4% are in very poor condition. The asset in very poor condition is the Fire Hall Theatre.

Figure 3-18: Condition Distribution by Replacement Value, Culture Services



3.6.3 Levels of Service

Table 3-12 provides the technical LOS for the City's Culture Service infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-12 Technical LOS, Culture Services

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
Culture contributes to complete and vibrant communities.	Public Art Policy established (RCP6-1)	Completed in Draft
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	30.4%
	% maintenance work orders completed on time for facilities?	Future metric. Data not currently available.

3.6.4 Risk Management Strategy

The risk map shown as Figure 3-19 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. $**16.3 million are shown as a High and Very High-risk exposure (yellow and red), meaning there are 35.5% of assets of these assets pose high or very high risk exposure to the City based on current condition and criticality. This is primarily due to the Fire Hall Theatre.**

Figure 3-19 Risk Exposure of the City's Culture Services Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.18	$0.18	$2.22	$9.75	$1.58
Likely	$0.00	$0.00	$0.00	$0.00	$1.33
Possible	$0.00	$0.00	$0.03	$0.00	$1.38
Unlikely	$0.00	$0.01	$0.79	$2.29	$1.07
Rare	$0.00	$14.44	$7.35	$3.12	$0.09

Consequence of Failure

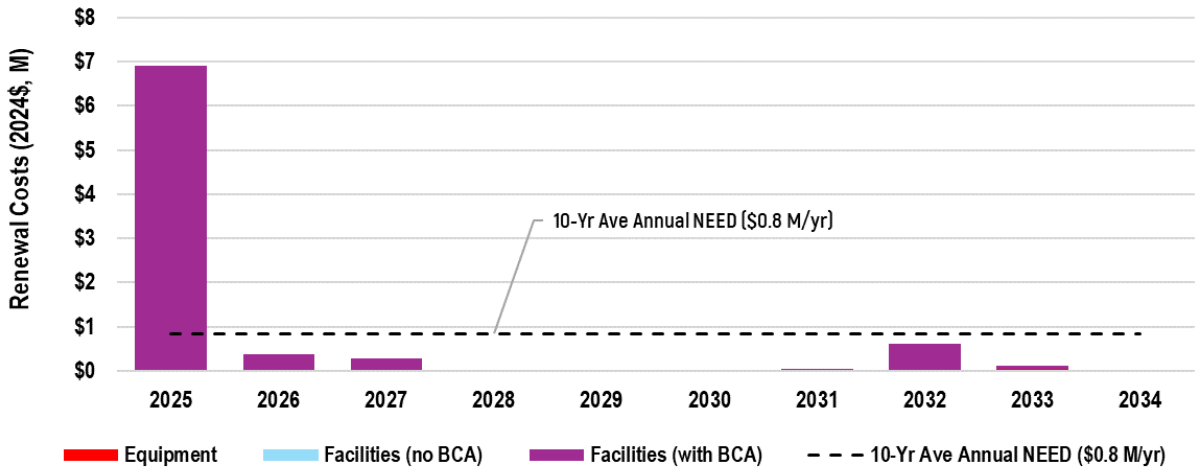
Risk Exposure Ratings

Very High	$12.7	27.6%
High	$3.6	7.9%
Moderate	$4.6	10.1%
Low	$10.5	22.9%
Very Low	$14.4	31.5%
Unknown	$0.0	0.0%
TOTAL	**$45.8**	**100.0%**

3.6.5 Lifecycle Management Strategy

Figure 3-20 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for the City's Culture Services assets. The average renewal need (dotted black line) is estimated at $0.8 million/year for the period 2025-2034. However, the renewal needs in 2025 is close to $7 million, representing an elevated backlog of needs. The backlog consists of the Fire Hall Theatre.

Figure 3-20: Forecasted Renewal Needs, Culture Services



3.7 Fire Services

3.7.1 Overview

The City of Niagara Falls' Fire Services department values its past, grasps present opportunities and embraces the challenges of the future. The Niagara Falls Fire Department is a composite department with 130 full-time firefighters responding in the urban area and 104 volunteer firefighters responding in the rural area. The mission of these dedicated professionals is to proudly provide world-class service to the citizens and visitors to the City and to protect them from fires and other emergencies.

The City's Fire Service's departments' mission statement encompasses the "Three Lines of Defence" which are:

- Public Fire and Life Safety Education;
- Fire Prevention and Fire Code Enforcement; and
- Fire and Emergency Response.

3.7.2 State of Infrastructure

Assets that support Fire Services include fleet, equipment, and facilities. Table 3-13 shows the estimated replacement value of $53.8M broken down by asset category.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-13. Assets that have passed their planned service lives can be found within the respective condition profiles as being in very poor condition.

Table 3-13: Inventory and Age Summary – Fire Services

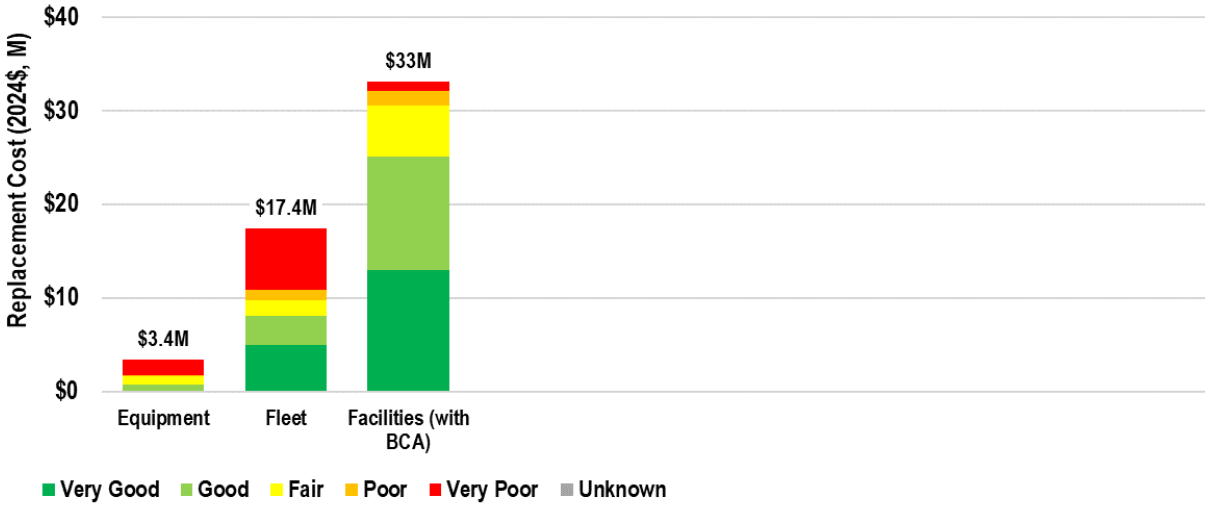
Service	Asset Category	Sub asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Fire	Sub-Total		$53.8M		
	Equipment	Safety Equipment, Marine Equipment, Cutting Equipment, Generators	**$3.4M**	9	8-25
	Fleet	Aerial, Pumper, Tanker, Rescue, Truck, Marine	**$22.4M**	9	15
	Facilities		**$33.0M**		

The condition distribution for the City's Fire Services assets is shown in Figure 3-21. Condition for these assets were predominantly based on asset age and remaining service life. Building condition assessment were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

1. Fire Administration
2. Fire Stations 1, 2, 3, 4, 6 and 7
   (Fire Station 5 is not owned by the City)

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall, 80.4% of Fire Services assets are in fair or better condition, 3.7% are in poor condition, meaning they are nearing their end of life, and **16.0% are in very poor condition**, meaning they are due or overdue for replacement.

Figure 3-21: Condition Distribution by Replacement Value, Fire Services



3.7.3 Levels of Service

Table 3-14 provides the technical LOS for the City's Fire Services infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-14 Technical LOS, Fire Services

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
Fire Department has sufficient stations and vehicles to meet the community's emergency needs.	Average Time from Dispatch to Time on Scene (standard calls) for: • Full-time Stations • Volunteer Stations	Future metric. Data not currently available.
Fire Department is fulfilling the community need for technical calls	Annual number of • Rope rescues • High angle rescues • Water rescues • Hazmat responses • Confined space rescues • Ice water rescues • Trench rescues	Future metric - pending
Fire Department maintains the desirable capacity and functionality	% asset-related recommendations from Fire Master Plan implemented*. Current Fire Master Plan is being updated to reflect updated growth projections	Future metric. Data not currently available.
Quality		
Fire Services Assets are Fit for Service	% assets not fit for service (at or passed planned service life)	17.1%

3.7.4 Risk Management Strategy

The risk map shown as Figure 3-22 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. $9.2 million of assets are shown as a Very High-risk exposure (red), which consist of critical assets such as frontline vehicles, specialized equipment, and fire facility assets (CoF = 5 – Catastrophic) which are in very poor condition.

Figure 3-22 Risk Exposure of the City's Fire Services Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.05	$1.07	$0.28	$1.41	$6.41
Likely	$0.00	$0.13	$0.14	$1.01	$1.39
Possible	$0.00	$0.60	$1.21	$3.10	$3.12
Unlikely	$0.00	$1.79	$2.88	$5.90	$5.34
Rare	$0.00	$0.29	$4.45	$5.38	$7.86

Consequence of Failure

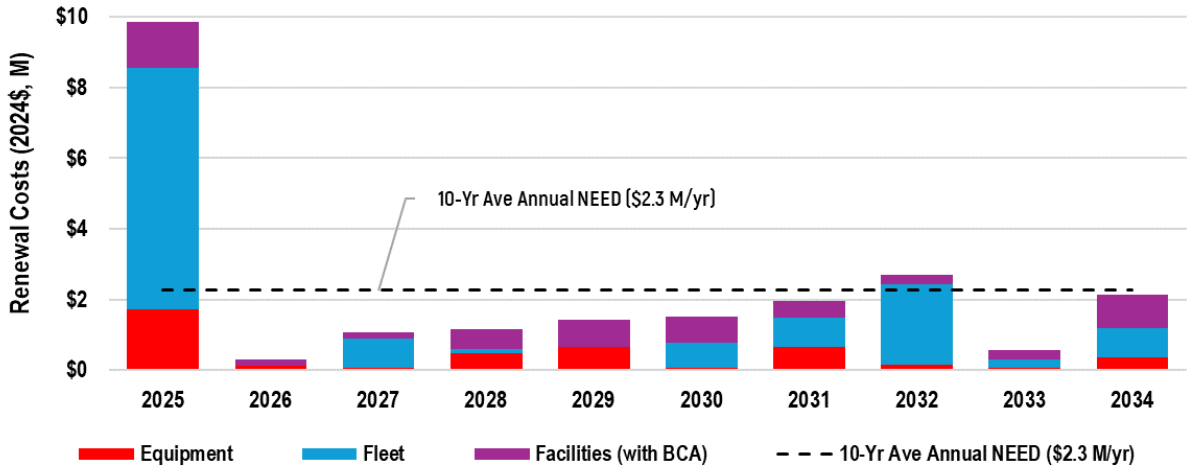
Risk Exposure Ratings

Very High	$9.2	17.1%
High	$7.7	14.2%
Moderate	$25.0	46.5%
Low	$11.6	21.6%
Very Low	$0.3	0.5%
Unknown	$0.0	0.0%
TOTAL	**$53.8**	**100.0%**

3.7.5 Lifecycle Management Strategy

Figure 3-23 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for the City's Fire Services assets. The average renewal need (dotted black line) is estimated at $2.2 million/year for the period 2025-2034. However, the renewal need in 2025 is close to $10 million, representing an elevated backlog of needs.

Figure 3-23: Forecasted Renewal Needs, Fire Services



3.8 Cemetery Services

3.8.1 Overview

Municipal cemeteries are burial grounds owned and operated by local government authorities. These cemeteries serve as final resting places for deceased individuals within a specific community or municipality.

The City currently has four main cemeteries within their portfolio:

- Fairview Cemetery
- Lundy's Lane Cemetery
- Stamford Green Columbarium

- Drummond Hill Cemetery.

Within each of these cemeteries, a variety of assets exist such as signage, fences and gates, pathways, columbarium etc.

Fairview and Lundy's Lane cemeteries are the largest and most active, while Drummond Hill has the most historical significance and remains semi-active. Several cemeteries currently maintained by the Cemetery Services were originally identified as abandoned pioneer farms and church yards.

3.8.2 State of Infrastructure

Assets that support Cemetery Services include fleet, equipment, and facilities. Table 3-15 shows the estimated replacement value of $7.4M and includes a breakdown of the inventory by asset category.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table 3-15. Assets that are passed their planned service lives can be found within the respective condition profiles as very poor condition.

Table 3-15: Inventory and Age Summary – Cemetery Services

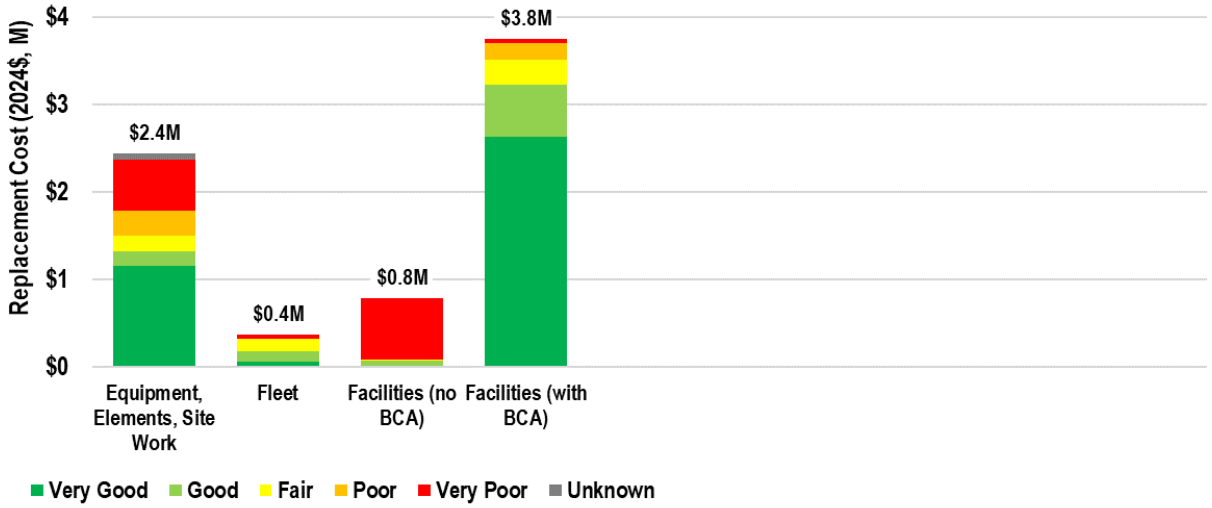
Service	Asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Cemeteries	Sub-Total	$7.4M		
	Equipment	**$2.4M**	1	3
	Fleet	**$0.4M**	9	14
	Facilities	**$4.6M**	-	50

The condition distribution for the City's Cemetery Services assets is shown in Figure 3-24. Condition for these assets were predominantly based on asset age and remaining service life. Building condition assessments were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

- Fairview Cemetery.

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. Overall, 72.7% of Cemetery Services assets are in fair or better condition, 8.8% are in poor condition and 18.5% are in very poor condition. Many equipment assets are in very poor condition due to their short service life (3 years). The City is constantly replacing these short-lived assets, resulting in the condition profiles changing frequently.

Figure 3-24: Condition Distribution by Replacement Value, Cemetery Services



3.8.3 Levels of Service

Table 3-16 provides the technical LOS for the City's Cemetery Services infrastructure. The City is working to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table 3-16 Technical LOS, Cemetery Services

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
Cemeteries accommodate community needs	Forecast time to deplete inventory of casket and cremation ground lots	Future metric. Data not currently available.
	Forecast time to deplete inventory of columbaria niches	Future metric. Data not currently available.
Cemeteries support environmental sustainability	Establish Green Burial areas (Cemetery Plan Recommendation 1: develop Green Burial area at to-be-acquired cemetery to complement Willows Rest)	Future metric. Data not currently available.
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	19.0%
	% maintenance work orders completed on time	Future metric. Data not currently available in Cartegraph

3.8.4 Risk Management Strategy

The risk map shown as Figure 3-25 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. $0.7 million assets are shown as a High and Very High-risk exposure (yellow and red), meaning there is risk exposure to the City for these assets based on current condition and criticality. These assets consist of various pieces of large equipment.

Figure 3-25 Risk Exposure of the City's Cemetery Services Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$0.74	$0.34	$0.00	$0.30	$0.00
Likely	$0.20	$0.01	$0.00	$0.27	$0.00
Possible	$0.31	$0.18	$0.00	$0.14	$0.00
Unlikely	$0.78	$0.17	$0.00	$0.00	$0.00
Rare	$2.77	$0.07	$1.00	$0.00	$0.00

Consequence of Failure

Risk Exposure Ratings

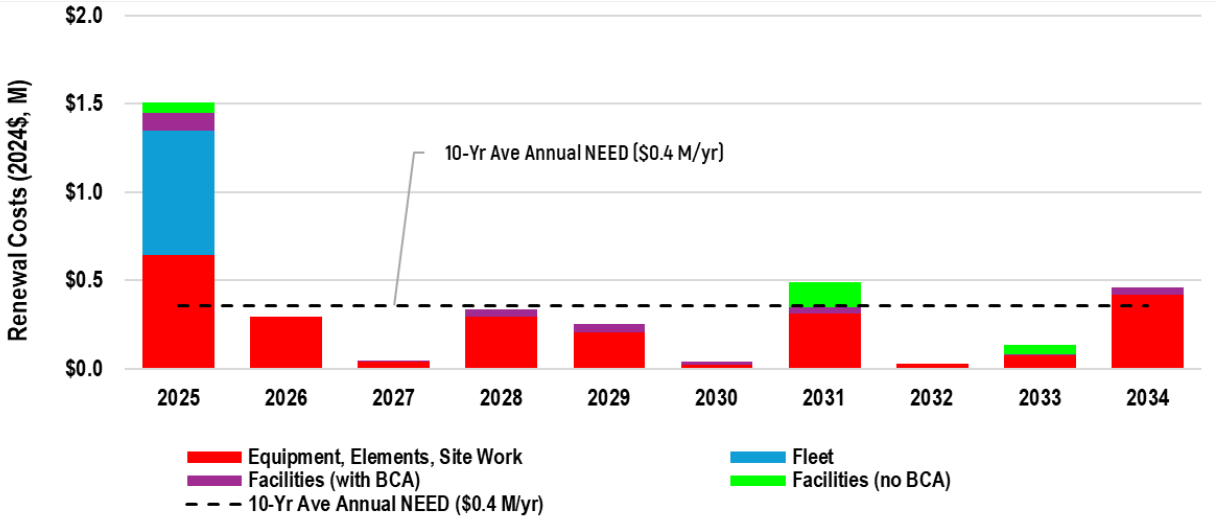
Very High	$0.3	4.1%
High	$0.4	5.6%
Moderate	$1.3	17.3%
Low	$1.7	22.7%
Very Low	$3.6	49.2%
Unknown	$0.1	1.0%
TOTAL	**$7.4**	**100.0%**

3.8.5 Lifecycle Management Strategy

Figure 3-26 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for some assets. The average renewal need (dotted black line) is estimated at $0.4 million/year for the period 2025-2034. However, the renewal needs

in 2025 is close to $1.5 million, representing an elevated backlog of needs and due predominantly to short-lived equipment age

Figure 3-26: Forecasted Renewal Needs, Cemetery Services



4 Improvement Opportunities

4.1 Plan Improvement Opportunities

Development of AM Plans is an iterative process that includes improving processes, data, and staff skills over time. This section provides an overview of the compliance of this AM Plan with Ontario Regulation 588/17 for current levels of service (year 2024 requirements) and identifies opportunities for improvements to the City's asset management practices, including those required to meet Ontario Regulation 588/17 for proposed levels of service prior to July 1, 2025.

Improvements recommended for the overall AM Planning process are as follows:

- Operationalize AM Plan frameworks by incorporating them into the City's capital planning process.
- Develop and formalize an Asset Management governance structure.
- Continue improving work order management system and processes to support improved Cartegraph
  - tracking of refurbishment and replacement intervals for assets
  - more accurate forecasting of maintenance and operating costs
- Invest in data quality assurance measures such as developing a centralized repository of asset data and continue collecting inventory and condition data.

Improvements recommended to support development of the 2025 AM Plan Update are as follows:

- Consider internal resource needs (operational impact) to deliver recommended AM Plan capital projects.
- Monitor current LOS and gather information on desired LOS to support development of Proposed LOS AM Plan for all assets (underway).
- Refine AM Plan growth projections based on updated Master Servicing Plans
- Complete Energy Conservation & Demand Management Plan Study and incorporate Greenhous Gas (GHG) metric into AM Plan LOS.

It is also recommended that the City consider establishing a stabilization reserve fund to pay for unexpected spikes in costs.

The following improvement opportunities were also identified for specific service areas:

- Transportation Services: Lundy's Lanes arch be inspected as part of the biennial culvert and bridge inspection. Useful life estimate will be refined based on the inspection output.
- Municipal Administration (IT): Inventory of devices to include assigned user Department, age and replacement frequency. Consider tracking assets using a QR code or bar code. In addition, consider separating capital accounts be created for replacement of IT assets and purchase of net new assets.
- Natural Assets: Consider establishing an operating budget separate from roadside maintenance to track operations and maintenance costs specific to woodlots and other natural areas. Also, define a condition scoring scheme for woodlots and other natural assets.
- Library Services: Continue collaboration with Library Services to ensure any changes of infrastructure needs are communicated across both entities.
- Vehicles: Track and record mileage. Incorporate mileage into vehicle condition scoring and renewal needs forecasting.

4.2 AM Plan Monitoring and Review

The AM Plan will be updated every five years to ensure it reports an updated snapshot of the City's asset portfolio and its associated value, age, and condition. It will ensure that the City has an updated 10-year outlook including service levels, costs of the associated lifecycle strategies and as assessment of any funding shortfalls.

As per O.Reg. 588/17, the City will conduct an annual review of its asset management progress in implementing this AM Plan and will discuss strategies to address any factors impeding its implementation.

4.3 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which the 1–5-year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

Appendix A – Niagara Falls Public Library

A.1 State of Infrastructure

The Niagara Falls Public Library system consists of four branches. The Victoria Avenue branch and Chippawa branch are owned outright by the Niagara Falls Public Library Board. The Community Centre branch is hosted by the MacBain Community Centre which is owned by the City. The Stamford Centre branch exists in a leased space. Each branch offers a wide range of services, including access to books, digital resources, public computers, meeting spaces, and educational programs for people of all ages. Additionally, the libraries host events such as author talks, workshops, and children's story times to foster a sense of community and lifelong learning.

The library systems play vital roles in promoting literacy, fostering learning opportunities, and facilitating community connections in the Niagara Falls area, making them invaluable assets to the local community.

A.2 State of Infrastructure

Assets that support Library Services include fleet, technology, equipment, and facilities. It is important to note that the facilities within the Library Services' portfolio are funded through the City's capital budget, and other various sources including the Library Board. Table A-1 shows the estimated replacement value of $22.1M and includes a breakdown of the inventory by asset category.

The average age and estimated life of these assets, weighted by replacement value, are also summarized in Table A-1. Assets that are passed their planned service lives can be found within the respective condition profiles as very poor condition.

Table A-1: Inventory and Age Summary – Library Services

Service	Asset Category	Replacement Value (2024$)	Ave Age	Ave Service Life
Library Services	**Sub-Total**	**$22.1M**		
	Materials	**$4M**	7	18
	Equipment	**$1.2M**	44	15
	Information Technology	**$0.6M**	7	16
	Fleet	**$0.3M**	4	8
	Facilities (with BCA) **	**$16.1M**	41	42

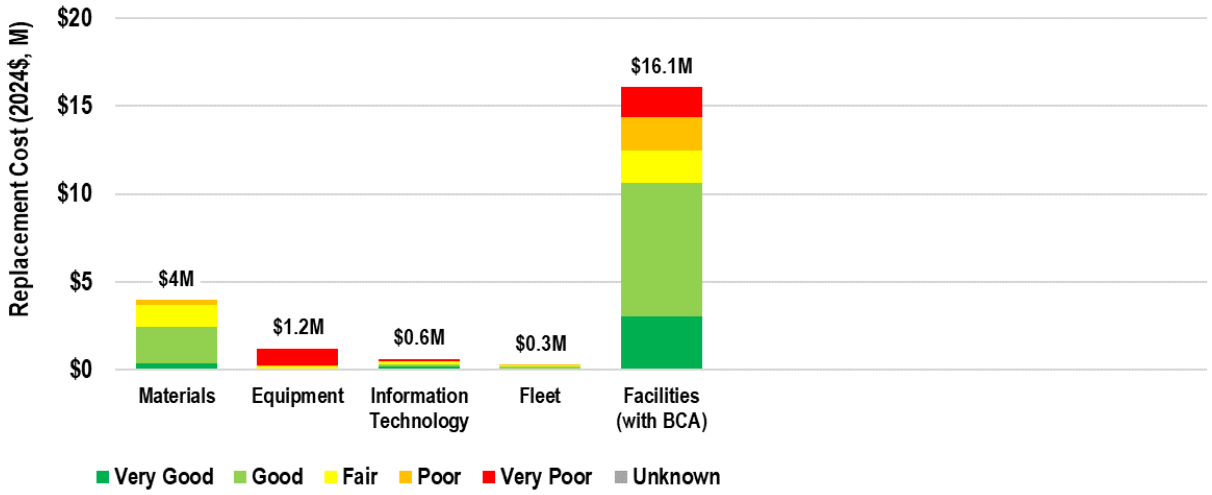
*** Funding for facility capital projects administered by the City, alongside the Library Board.*

The condition distribution for Library Services assets is shown in Figure A-1. Condition for these assets were predominantly based on asset age and remaining service life. Building condition assessments were completed for the following facilities, and resultant condition values were utilized for the AM Plan:

- Chippawa branch (assessment completed in 2019)
- Victoria Avenue branch (assessment completed in 2023)

The figure below shows the relative replacement value, by asset category, and the proportion of assets by condition grade. On average 68.9% of Library Services assets are in fair or better condition. 17.8% are in very poor condition. Many equipment, technology and library material assets are in very poor condition due to their short service lives.

Figure A-1: Condition Distribution by Replacement Value, Library Services



A.3 Levels of Service

Table A-2 provides the technical LOS for the City's Library Services infrastructure. The City is working alongside the Library to fill data gaps related to their current performance for their next iteration of the AM Plan.

Table A-2 Technical LOS, Library Services

Community Levels of Service	Technical Levels of Service	
	Description	Current Performance
Capacity, Use & Function		
Culture, public art and libraries contribute to complete and vibrant communities	Total space per capita (including leased libraries)	0.66 ft2/capita
	Maximum distance to closest branch in urban area	~3.2 km
	Collection size per capita	1.67 items/capita
Facilities are energy efficient	Energy utilization by building	Future metric
Facilities are accessible	Facilities meet accessibility requirements – Yes/No	No – Chippawa branch does not have an elevator
Quality		
Assets are fit for service	% assets not fit for service (at or passed planned service life)	13.0%
	Facility Condition Index (lower is better)	11% - Victoria Avenue branch 54% - Chippawa branch

A.4 Risk Management Strategy

The risk map shown as Figure 3-4 combines the Criticality (CoF) ratings with the Condition (PoF) ratings for infrastructure represented within the Service Area. $5.2 million dollars are shown as a High and Very High-risk exposure (yellow and red), which are predominantly from the Library facilities (which have a criticality rating of 4-major). These assets consist primarily of building components of the Chippawa branch, as well as exterior windows and walls at the main branch.

Figure A-2 Risk Exposure of the Library Services Assets

Risk Exposure in Year 2024$, millions

Probability of Failure	Insignificant	Minor	Moderate	Major	Catastrophic
Certain	$1.00	$0.26	$0.71	$0.68	$0.23
Likely	$0.04	$0.29	$0.02	$1.89	$0.01
Possible	$0.09	$1.44	$0.13	$0.55	$1.17
Unlikely	$0.05	$2.33	$1.12	$5.28	$1.27
Rare	$0.01	$0.54	$2.17	$0.83	$0.02

Consequence of Failure

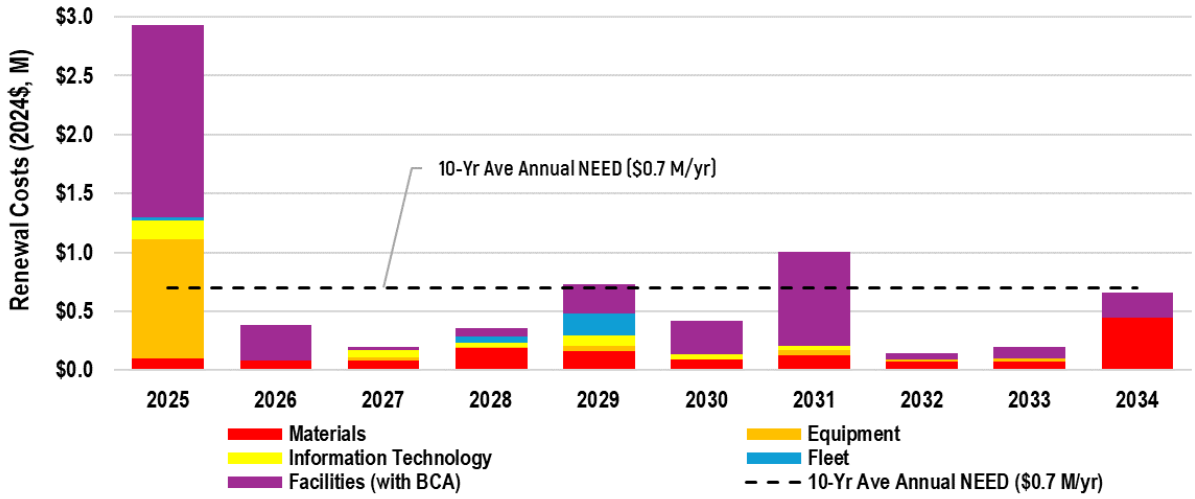
Risk Exposure Ratings

Very High	$0.9	4.2%
High	$4.3	19.6%
Moderate	$10.8	48.9%
Low	$5.5	24.7%
Very Low	$0.6	2.7%
Unknown	$0.0	0.0%
TOTAL	**$22.1**	**100.0%**

A.5 Lifecycle Management Strategy

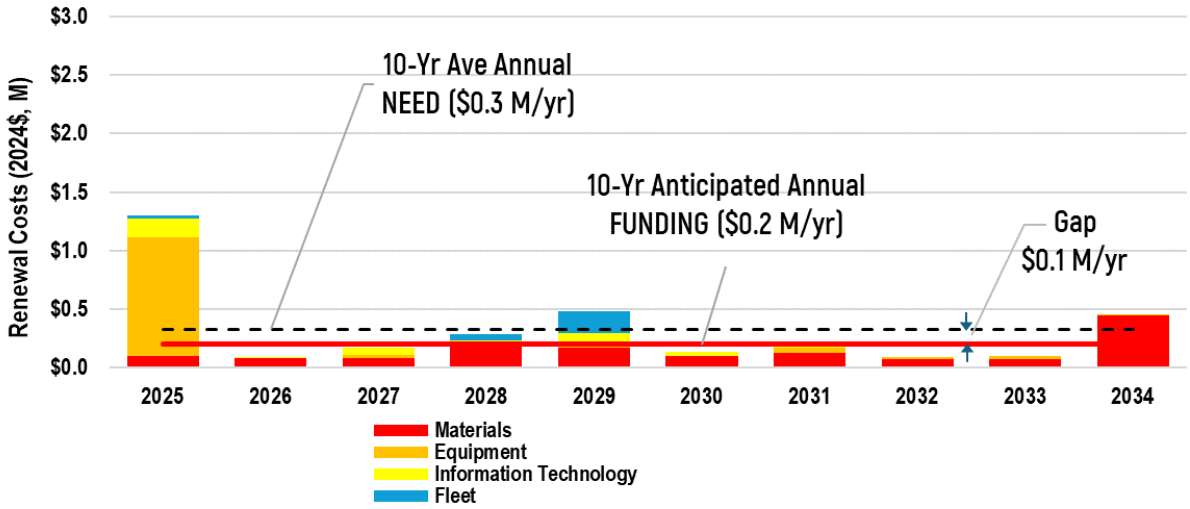
Figure A-3 shows the renewal needs over the next 10 years by service. Renewal needs were predominantly based on installation years and age; however, condition needs assessment data was utilized for both facilities. The average renewal need (dotted black line) is estimated at $0.7 million/year for the period 2025-2034. However, the renewal needs in 2025 is close to $3 million, representing an elevated backlog of needs.

Figure A-3: Forecasted Renewal Needs, Library Services



Library facilities and other Library assets are generally renewed by the Library through the City's capital funding, and various other sources as part of the Niagara Falls Public Library's overall budget. As such, the average annual renewal needs to be covered by NFPL's budget are estimated at $0.3 million/year. In comparison, the annual funding for renewals is $0.2 million/year, based on NFPL's 2024 transfer to reserve. This leaves a gap of $0.1 million/year.

Figure A-4: Forecasted Renewal Needs, Library Services – excluding Library Facilities



Appendix B – Niagara District Airport Asset Management Plan

NIAGARA | DISTRICT AIRPORT

gateway to the peninsula

Asset Management Plan

Current Levels of Service

May 6, 2024
Rev 2

advisory services

Prepared by SLBC Inc.

EXECUTIVE SUMMARY

The Purpose of the Plan

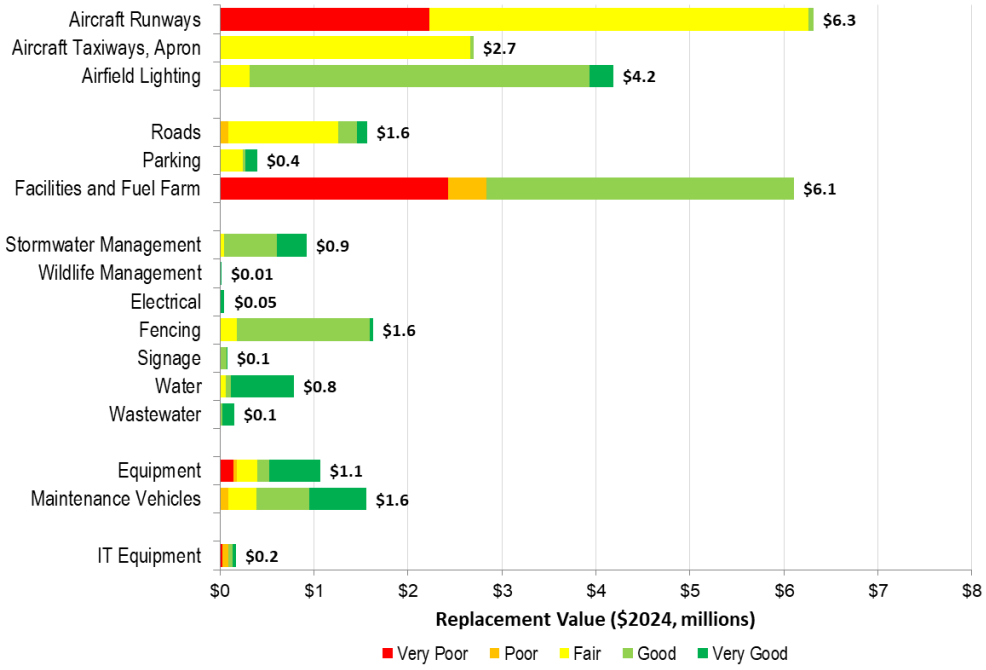
Asset management planning is a comprehensive process that ensures the delivery of infrastructure services in a financially sustainable manner. This Niagara District Airport (the Airport) Asset Management Plan (AM Plan) Current Levels of Service (LOS) provides information about infrastructure assets with actions required to provide an agreed level of service in a cost-effective manner while outlining associated risks. The AM Plan defines the services to be provided, how the services are provided and what funds are required to provide the services over the 10-year planning period. The AM Plan will link to a Long-Term Financial Plan which typically considers a 10-year planning period.

This AM Plan meets the July 2024 requirements of Ontario Regulation (O.Reg.) 588/17 "Asset Management Planning for Municipal Infrastructure" under the Infrastructure for Jobs and Prosperity Act, 2015. Specifically, by July 2024, O.Reg. 588/17 requires municipalities to adopt an AM Plan reporting current LOS for all assets, as well as lifecycle needs to maintain those LOS.

Asset Descriptions

This AM Plan covers the infrastructure assets that provide airside and groundside services, specifically runways, taxiways, aprons and lighting, groundside roads, parking, facilities and fuel farm, site servicing, vehicles and equipment and information technology equipment. The overall condition and replacement value of assets that support the service delivery included in this AM Plan are shown in Figure ES-1. The total estimated replacement value of the assets is **$27.7 million** expressed in current (2024) dollars.

Figure ES-1: Condition Distribution of Airport Assets



Eighty percent (80.1% or $22.2 million) of the Airport's assets are in Fair condition or better. Two and a half percent (2.5% or $0.7 million) are in Poor condition, which indicates that they are nearing the end of their service life. Seventeen and a half percent (17.5% or $4.8 million) are in Very Poor condition, which means they are due or overdue for replacement. Assets in Very Poor condition consist of Runway 11-29, Hangar 11, a front-end loader, a snowblower, handheld radios and various IT devices. Runway 11-29 has an estimated replacement value of $2.2 million and is currently closed. Hangar 11 has an estimated replacement value of $2.4 million and is nearing the end of its lease period to Genaire Limited.

Levels of Service

Service levels are categorized by the following service attributes:

- **Capacity:** Services have enough capacity and are accessible enough to everyone
- **Function:** Services meet customer needs while limiting health, safety, security, natural, and heritage impacts
- **Reliability and Quality:** Services are continuous, predictable, and responsive to customers
- **Affordability:** Services are affordable and provided at the lowest cost for both current and future customers

O.Reg. 588/17 Asset Management Planning for Municipal Infrastructure requires reporting of current levels of service.

The current performance related to capacity and function are not provided in this AM Plan as an 2024 Airside Redevelopment Study is currently under development that will define the demand for expanded services, as well as the required capacity and assets to support those services.

The reliability service attribute indicates whether assets are fit for service. The Technical LOS measures the percent of assets in renewal backlog, i.e. due or overdue for replacement. As shown in Table ES-1, 17% of the Airport's assets are in renewal backlog. These assets correspond to the assets identified as being in Very Poor condition, including Runway 11-29, Hangar 11, a front-end loader, a snowblower and some IT equipment.

Table ES-1: Current Performance – Reliability

Customer LOS Statement	Technical LOS Indicator	Current Performance	Comment
Assets are fit for service	% assets in renewal backlog, i.e. due or overdue for replacement	**17.5%**	Less is better

The O.Reg. requires the organization to forecast the cost of maintaining the current performance over the next 10 years, in othder words, to prevent the renewal backlog from growing.

The affordability service attribute will be addressed in the Financial Summary of the AM Plan.

Lifecycle Management Plan

The projected outlays necessary to maintain the current renewal LOS is $10 million over the next 10 years or approximately $1.0 million/year. The approximate timing of those needs is shown in Figure ES-2. The spike in needs in 2029 represents the need to renew Hangar 11. The spike in

2033 consists primarily of Runway 06-24, a plow truck and a loader, while the spike in 2034 consists primarily of Taxiway A, the terminal apron and the flying club apron.

Figure ES-2 Renewal Needs and Funding – Maintain Current LOS Scenario

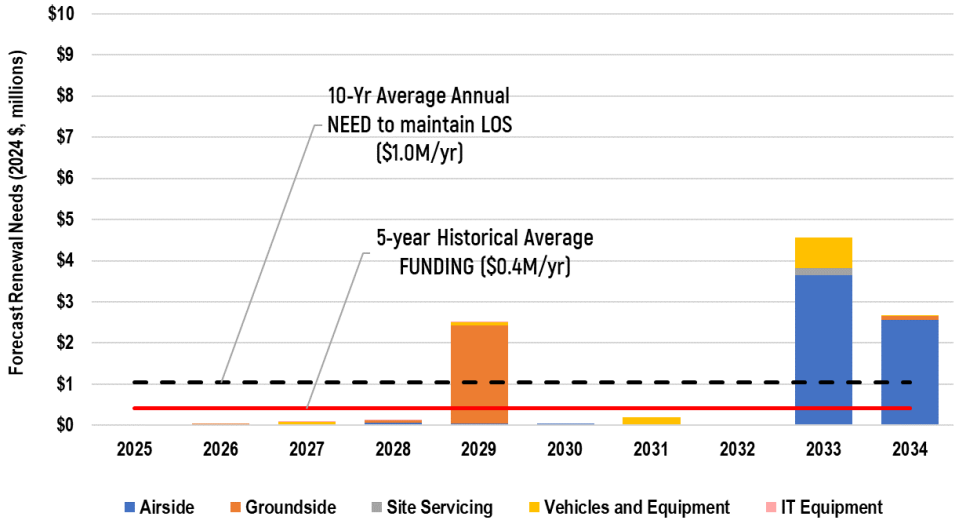
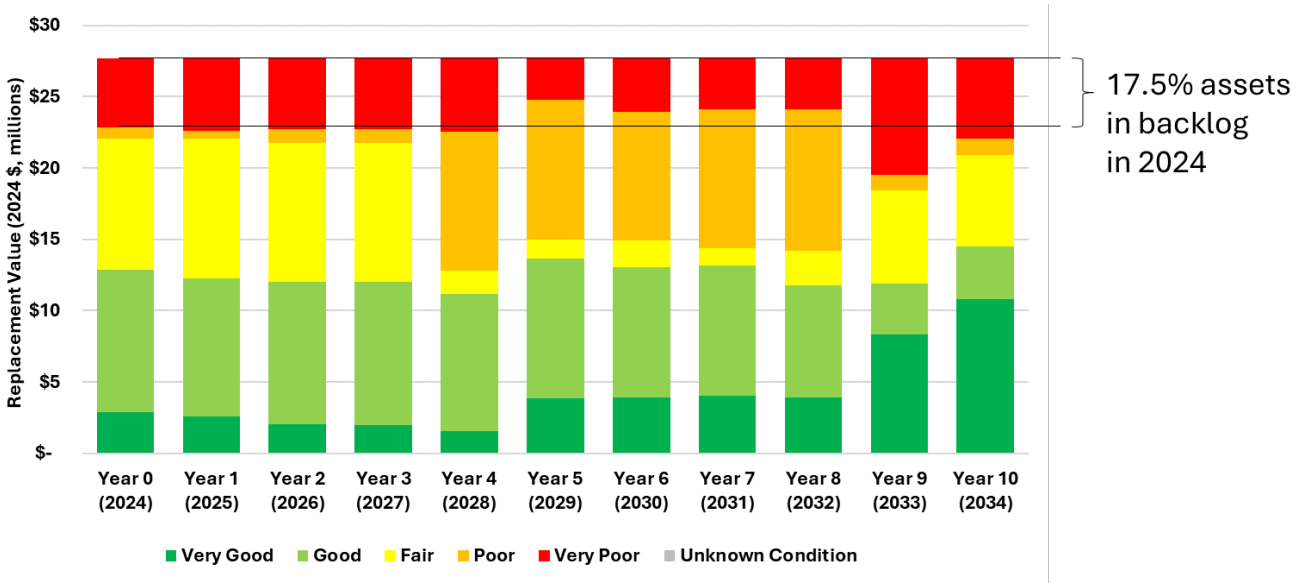


Figure ES-3 shows the forecast condition distribution associated with the funding scenario depicted in Figure ES-2. This scenario was designed to maintain the current LOS, i.e. the renewal backlog. In 2024 the renewal backlog was 17.5%. The backlog grows to 20.3% by 2034; however, through the period 2025-2034; the annual renewal backlog averages 17.3%.

Figure ES-3 Condition Forecast – Maintain Current LOS Scenario



For reference, Figure ES-2 shows that the average capital renewal funding over the past 5 years (2020-2024) was $0.4 million/year, which is $0.6 million/year less than the amount required to maintain the current LOS. As such, continuing to fund at an average of $0.4 million/year would

result growth of the renewal backlog, meaning that more and more assets would fall into Very Poor condition.

To eliminate the renewal backlog over the next 10 years, an estimated $1.6 million/year would be needed, which is $1.2 million/year more than the historical average renewal funding provided.

For operations and maintenance of the current asset portfolio, an estimated $0.6 million/year is needed. This amount focuses on costs associated with operations and maintenance of assets, and does not include the costs of other airport programs and services.

The Airport is currently exploring growth options in its 2024 Airside Redevelopment Study. The cost of the growth needs will be incorporated into the 2025 AM Plan

Financial Summary

Table ES-2 compares the historical funding with forecast needs for each lifecycle stage. The table shows that to maintain the current LOS there is a renewal gap of $0.6 million/year and historical funding levels would cover only 40% of the needs.

The Table also shows that average annual costs for operating and maintaining the airport assets is estimated at $697k/year, based on average annual expenditures over the past three years (2021-2023) inflated to 2024 $. The anticipated annual funding for operations and maintenance is $600k/year based on 2024 budget amounts, including only costs related to operations and maintenance of assets (not full operating budget). This represents funding that covers 86% of estimated needs, leaving a gap of about $97k/year.

Table ES-2 Comparison of Historical Funding and Forecast Needs

Lifecycle Stage	Anticipated Funding Amount (2024 $/year, millions)	Forecast Need 2025-2034 (2024 $/year, millions)	Gap (2024 $/year, millions)	% Funding / Needs
Growth & Upgrade	N/A	To be defined in 2024 Airside Redevelopment Study	N/A	N/A
Renewal (to maintain current LOS)	$0.4*	$1.0	$0.6	40%
Operations & Maintenance	$0.6**	$0.7***	$0.1	86%

* Average annual renewal funding 2020-2024

** Based on 2024 budget, including only costs related to operations and maintenance of assets, not full operating budget.

*** Based on average expenditures for asset operations and maintenance over years 2021-2023.

To close the funding gap, the Airport may either increase revenues or lower expenditures. Revenues may be increased through increases in user fees, contributions from municipalities or grants. Expenditures may be lowered by reducing service levels, eliminating assets or deferring

renewals, beginning with the lowest criticality assets. The Airport is not permitted to fund using debt or to hold reserves.

There are risks associated with providing the service and not being able to complete all identified asset lifecycle activities needed. We have identified major risks as:

- Deferral of renewal activities which results in reduced whole of life of the infrastrure, higher annual cost over the life of the asset, assets in worse overall condition and associated risk of sub-par performance, and less effective use of resources.

It is recommended that the Airport will endeavour to manage these risks within available funding by:

- Prioritizing needed activities by risk impact rating and lower cost renewal methods
- Continuing to identify and request funding and staffing incrementally over time to maintain the current levels of service.

Asset Management Practices

The data confidence is assessed as medium confidence level for data used in the preparation of this AM Plan.

To improve asset management practices, we will undertake the following next steps:

- Determine proposed (i.e., target) levels of service for reporting in the Proposed LOS AM Plan required by O.Reg. 588/17 for approval by July 1, 2025.
- Complete the 2024 Airside Redevelopment Study and associated business case and determine Growth and Upgrade Needs Forecasts, including the future use and lifecycle activities for Hangar 11.
- Improve the asset State of Infrastructure database by conducting cyclical industry standard condition assessments, giving priority to high consequence of failure (CoF) assets. In particular, conduct condition assessments on the Terminal and Maintenance Garage. Develop inventories of building systems and components as part of the condition assessment.
- Establish a master asset inventory to support AM activities. Align the TCA register with AM asset register, or consolidate the two inventories. Establish processes to update the asset register(s) when assets are acquired, replaced or eliminated.
- Explore options for implementing technologies for work order management and asset investment planning. Consider the possibility of using applications in place at one of the three owner municipalities.

Monitoring and Improvement Program

O.Reg. 588/17 requires that AM Plans be updated by July 1, 2025 to report proposed LOS for the subsequent 10 years, along with the cost of sustaining the proposed LOS. Thereafter, the O.Reg. requires that progress implementing the AM Plan be reported to municipal Councils annually by July 1. In addition, the O.Reg. requires AM Plans to be updated at least every 5 years.

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List of Abbreviations

Abbreviation	Definition
AM	Asset Management
BCA	Building Condition Assessments
CEO	Chief Executive Officer
CoF	Consequence of Failure
CPI	Consumer Price Index
CRV	Current Replacement Value
ISO 31000	International Organization for Standardization Risk Management Process
LOS	Levels of Service
NRBCPI	Non-Residential Building Construction Price Indices
O.Reg.	Ontario Regulation
TCA	Tangible Capital Asset

1 INTRODUCTION

1.1 Background

The Niagara District Airport (the Airport) is a municipal airport located within the Niagara-on-the-Lake boundaries and financially supported by its three surrounding municipalities – the cities of Niagara Falls and St. Catharines, and the town of Niagara-on-the-Lake.

The Niagara District Airport Commission manages the Airport on behalf of the three municipalities. The Commission is comprised of nine individuals – three elected councilors representing each of the three municipalities and six individuals nominated by the municipalities – all serving as commissioners for a four-year term.

The Airport encompasses an area of 130 hectares (321 acres) in which several areas have been designated for airside and groundside development. The Airport has a 5,000-foot runway, 24-hour Customs clearance, NAV CANADA on site, and Avgas and Jet Fuel refueling available. Approximately 75 aircraft are based on the Airport. On-site services include executive and personal charter, helicopter and fixed wing sightseeing, expert airport maintenance operations, and an active flight training school, and several interesting vintage aircraft.

This Asset Management Plan (AM Plan) communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and the required funding to maintain current levels of service over a planning period of 10 years.

1.2 Alignment with Regulatory Requirements

This 2024 Current Levels of Service (LOS) AM Plan meets the requirements of Ontario Regulation (O.Reg.) 588/17 “Asset Management Planning for Municipal Infrastructure” under the Infrastructure for Jobs and Prosperity Act, 2015. Specifically, by July 2024, O.Reg. 588/17 requires municipalities to adopt an AM Plan reporting current LOS for all assets, as well as lifecycle needs to maintain those LOS.

In accordance with the requirements of O.Reg. 588/17, this AM Plan is posted on the Airport’s website, along with related background documents, such as condition assessments.

1.3 Relationship with Other Documents

Asset management planning is a medium- to long-term planning activity that relies on input from strategic planning activities and informs shorter-term decision making. The AM Plan provides a framework to validate the Airport’s budgeting processes and assist in prioritizing work activities, including capital projects, based on risk. It also discusses LOS that support goals in the Airport’s strategic plan and lifecycle management strategies intended to reduce the overall cost of asset ownership.

The AM Plan is intended to be read with other Airport and supporting municipalities’ policies and planning documents, including the following:

- Corporate Asset Management Policies of the City of Niagara Falls, the City of St. Catharines and the Town of Niagara-on-the-Lake
- Tangible Capital Asset (TCA) Annual Financial Statements

- Feasibility Study and Business Case (2020): Examines potential business opportunities to position the Airport as a stronger economic asset to the region, and the necessary investments and developments to achieve those future business goals.
- Niagara District Airport Master Plan – Draft (2021): Developed by Niagara Region. It outlines the strategic goals related to future business objectives and short-term infrastructure improvements at the airport. It is still in draft form, and has not yet been formally adopted by the Airport's governing Commission.
- Niagara District Airport – 2023 Budget Presentation
- Niagara District Airport – 2023 Capital Budget
- Niagara District Airport – 2023 Operating Budget.

1.4 Key Stakeholders

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 1-1 below.

Table 1-1 Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Niagara District Airport Commission	The Commission is comprised of 9 members, 3 of which are elected Councillors from each of the 3 owner municipalities, and the other 6 being appointed members representing the municipalities. The Commission provides executive leadership and strategic direction for the Airport's operation, management, and future business development goals. It is responsible for communication and liaison between the Councils of the three owner municipalities and the Airport's administration staff. Overall owners of the Airport's assets. Approves asset management policies and asset funding allocation through the annual budget process. An overarching expectation of a standard of care is required by the Commisison to ensure commitment to effective asset management practices.
Elected Councils for the Cities of Niagara Falls and St. Catherines, and the Town of Niagara-on-the-Lake	These municipalities are joint owners of the Airport's assets. Councils approve funding allocation to be used by the Airport Governing Commission, proportional to their share of ownership of the Airport, through the annual corporate budget process.
Airport Chief Executive Officer (CEO)	Under the leadership of the Niagara District Airport Commission, the CEO Provides leadership, strategic direction and corporate oversight to ensure that the goals and directions of the asset management program remain consistent with the overall strategic plan. Provides information needed by the Commission for strategic business decisions, such as long-range forecasts of asset investment needs, services levels, risks, costs, and performance measures.
Airport Manager of Airside and Groundside Services	The Manager of Airside and Groundside Services supports the CEO in implementing the asset management decisions, inluding capital improvements, and operations and maintenance activities, as well as improvements to asset management pratices. The Manager also oversees the safe, compliant, and efficient operation of the airport.
Airport Manager of Finance and Administration	Provides historic Tangible Capital Asset (TCA) amounts, and historic and current capital and operating budgets. Further, provides coordination on input data and development of the AM Plan.

1.5 Goals and Objectives of Asset Ownership

The Airport exists to provide services. Some of these services are provided by infrastructure assets. The Airport has acquired infrastructure assets by purchase, by contract, construction by staff, and by donation of assets constructed by others to meet increased levels of service.

The Airport's goal in managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future customers.

The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance
- Managing the impact of growth through demand management and infrastructure investment
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service
- Identifying, assessing and appropriately controlling risks
- Linking to a long-term financial plan which identifies required, affordable expenditure and how it will be financed.

Key elements of the planning framework are:

- **Levels of service:** specifies the services and levels of service to be provided
- **Future demand:** how this will impact on future service delivery and how this is to be met
- **Lifecycle management:** how to manage existing and future assets to provide defined levels of service
- **Financial management:** what funds are required to provide the defined services
- **Asset management practices:** how to manage provision of the services
- **Monitoring and improvement plan:** how the AM Plan will be monitored to ensure objectives are met, including how to increase asset management practice maturity.

1.6 Organization of Document

The contents of this AM Plan follow the recommended elements of a detailed AM Plan:

- **Introduction:** Outlines scope, background information, relationship to other documents and plans, and applicable legislation
- **State of Infrastructure:** Summarizes the inventory, valuation, age and remaining life, and condition of the assets in the inventory by asset class
- **Levels of Service:** Defines levels of service through performance indicators and targets, and outlines current performance
- **Lifecycle Management Strategy:** Defines the framework for identifying critical assets and quantifying risk to enable prioritization of lifecycle activities, and summarizes the asset management strategies (i.e., planned actions) that will enable the assets to maintain the current levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost
- **Financial Management Strategy:** Summarizes the infrastructure gap based on the determined infrastructure needs and associated budget
- **AM Plan Improvement and Monitoring:** Summarizes the next steps including improving future iterations of the AM Plan and monitoring of AM Plan implementation progress.

2 STATE OF INFRASTRUCTURE

The State of Infrastructure section of the AM Plan describes the Airport's asset inventory, and provides a snapshot in time of the valuation, age and condition of the assets. Recommendations for the sustainment of data collection and reporting are provided in the AM Plan Improvement and Monitoring section.

2.1 Asset Hierarchy and Inventory

Understanding the assets owned by the Airport that are used to support each major service area is important to enable their effective and efficient management. In this AM Plan, the Airport's asset inventory has been organized around the major service groups and asset classes shown in Table 2-1 in the following sub-section.

Most infrastructure assets owned by the Airport are included. Land is not included in the current replacement costs of the asset inventory. As inputs into decision-making, data and information are important assets, but are not currently included in this AM Plan.

2.2 Asset Valuation

Financial accounting valuation uses historical costs and depreciation assumptions to determine the book value of capital assets in accordance with the Public Sector Accounting Board (PSAB). Policies and procedures relating to the development of net book values for accounting purposes have been developed by the Airport to comply with PSAB 3150 Tangible Capital Assets (TCA) reporting.

While financial accounting valuations are based on historical costs, managerial valuations are based on replacement costs. For most asset types, the replacement values were calculated using historical purchase costs indexed to December 31, 2023 using the Non-Residential Building Construction Price Indices (NRBCPI) or Consumer Price Index (CPI), as appropriate for the asset type. For some asset types, replacement values are based on current unit costs. The replacement cost valuation represents the estimated cost to replace assets today and is presented in current (2024) dollars and does not account for future technology improvements but does account for increased regulatory requirements and technology improvements to date.

The estimated current replacement value of Airport assets is **$27.7** million presented in current (2024) dollars, as outlined in the following table.

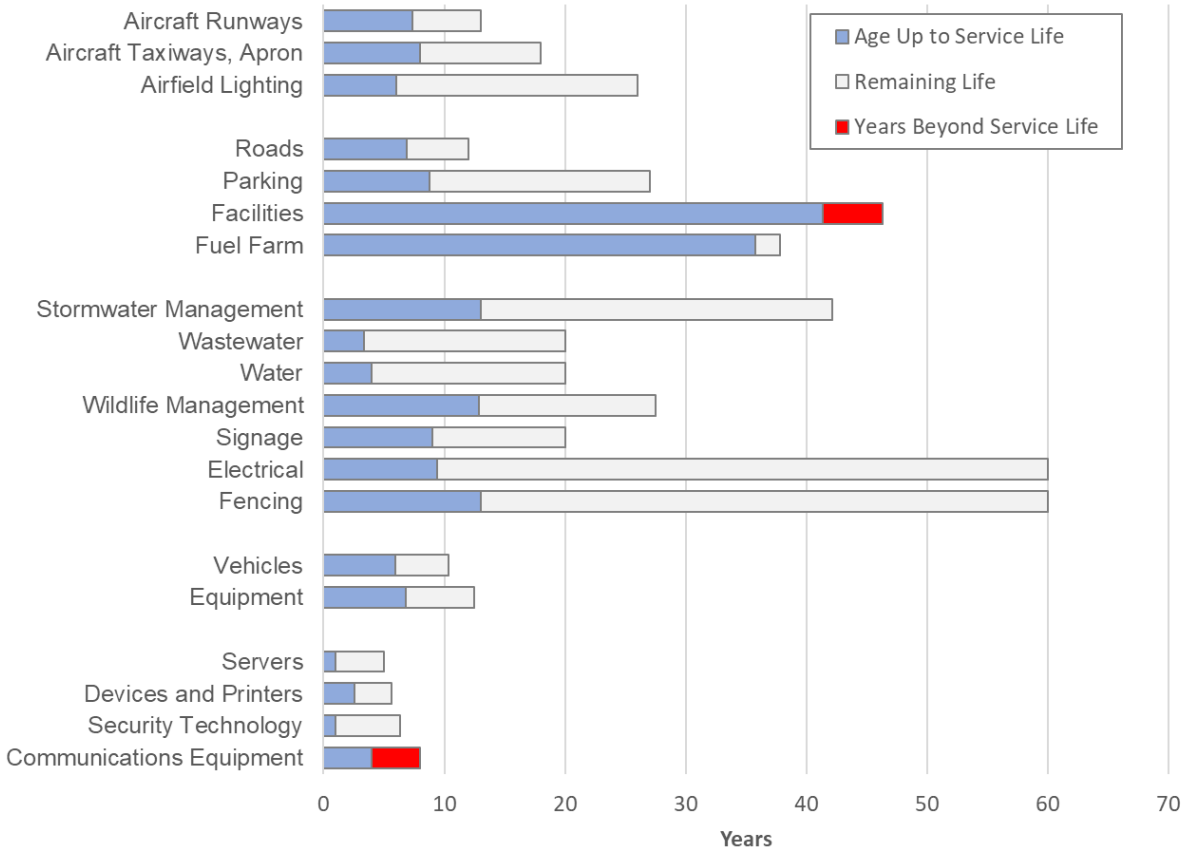
Table 2-1 Assets covered by this AM Plan

Asset Class	Asset Sub-Class	Replacement Value	
		2024$M	%
Airside	Aircraft Runways	$6.32	22.8%
	Aircraft Taxiways, Apron	$2.70	9.8%
	Airfield Lighting	$4.18	15.1%
Groundside	Roads	$1.56	5.6%
	Parking	$0.40	1.4%
	Facilities	$6.06	21.9%
	Fuel Farm	$0.04	0.2%
Site Servicing	Stormwater Management	$0.92	3.3%
	Water	$0.79	2.8%
	Wastewater	$0.15	0.5%
	Wildlife Management	$0.01	0.0%
	Signage	$0.08	0.3%
	Electrical	$0.05	0.2%
	Fencing	$1.63	5.9%
Vehicles and Equipment	Vehicles	$1.56	5.6%
	Equipment	$1.07	3.9%
IT Equipment	Servers	$0.03	0.1%
	Devices and Printers	$0.04	0.2%
	Security Technology	$0.03	0.1%
	Communication Equipment	$0.06	0.2%
TOTALS		**$27.69**	**100.0%**

2.3 Asset Age and Remaining Life

Understanding the estimated life of an asset and the proportion of life that remains provides an insight into potential risk of asset failure and potential renewal need. The following graph shows, for each asset sub-class, the average age of the assets against the average estimated useful life, in years. Averages are “weighted” by replacement cost to give more importance to asset types with more value. Although many of the Airport’s assets are relatively new, many others are reaching the middle to latter stages of their useful lives and will require rehabilitation or replacement in the upcoming years. The assets that are beyond service life are the Hangar 11 facility and some IT equipment assets (security software and handheld radios).

Figure 2-1 Asset Life Consumed Profile



2.4 Asset Condition

In this AM Plan, the term “condition” refers to the degree of physical deterioration of an asset. “Performance” is a more general term that typically describes an asset’s ability to achieve levels of service through measures such as capacity, function and operational quality.

Condition assessment programs evaluate current physical condition, determine rate of deterioration over time, enable forecasts of future condition, and inform the most beneficial type and timing of treatment. Condition assessment methods and rating systems have become relatively standard for some assets but vary depending on the type of asset. The Airport conducts inspections more frequently on more critical assets such as airside pavement and facilities, while condition assessments are undertaken for less critical assets such as groundside parking lots, signage and vehicles at an appropriate frequency for the asset group. Some Airport assets have no reported physical condition. These include assets which the Airport is in the process of collecting the data, assets where the renewal decision is not based on condition (e.g. age or mileage), and assets that are run-to-failure.

For those assets with no condition data, age-based condition is estimated as the percentage of age to useful life. Using age data as a surrogate for condition data is common but it can be misleading as age does not always directly reflect condition or remaining life. The Airport is working to increase the percentage of assets with industry standard condition assessment data

for facilities through building condition assessments (BCAs) and pavement condition assessments.

The Airport undertook a Airfield Pavement Structural Assessment in 2024 which included determination of whether the structural capacity of the airside pavement can accommodate the traffic anticipated over the next 20-year period. The assessment will provide an overall condition grade for the airside pavement, and types, severity and density of distresses, pavement structure layer thicknesses and material types, and asphalt moduli. The overall condition grade from the draft results of the Airfield Pavement Structural Assessment were used in this AM Plan.

To enable comparison of condition and condition trends over time between different asset types, a generic condition grading scale is often used to translate detailed engineering data about assets into information that can be compared across asset groups. For this purpose, the Airport uses a five-point condition grading system, summarized in the table below, which is consistent with the general condition grading system included in the International Infrastructure Management Manual (IIMM).

Table 2-2 Five-Point Condition Grading System

Grade	Description	Condition Criteria	Criteria Description
VG	Very Good	Fit for the future	Well maintained, good condition, new or recently rehabilitated
G	Good	Adequate for now	Acceptable, generally approaching mid-stage of expected service life
F	Fair	Requires attentions	Signs of deterioration, some elements exhibit deficiencies
P	Poor	Increasing potential of affecting service	Approaching end of service life, below standard, significant deterioration
VP	Very Poor	Unfit for sustained service	Near or past service life, advanced deterioration, assets may be unusable

Details relating to the condition of each asset are currently maintained in various databases and spreadsheets. The Airport converts industry standard condition rating systems and age-based assets to the above condition grading system as provided in the table below.

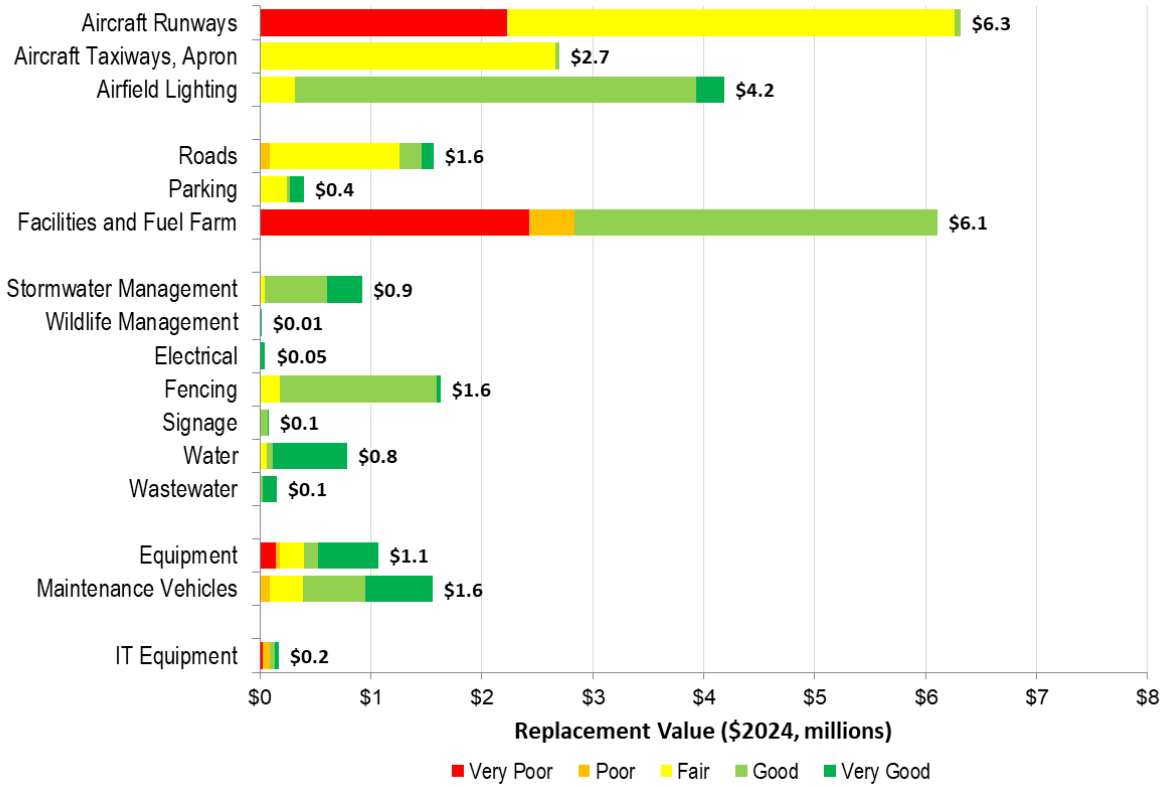
Table 2-3 Conversion of Industry Condition to Five-Point Condition Grade

Condition Grade	% Life Remaining for Age-Based "Condition"	Airside Pavement Condition Grade
Very Good (New)	75 to 100%	Very Good
Good	50 to 75%	Good
Fair	25 to 50%	Fair
Poor	0 to 25%	Poor
Very Poor (End-Of-Life)	<= 0%	Very Poor

The following graph depicts, by colour, the value of assets that fall within each of the condition grades (very good or new, good, fair, poor, very poor), organized by asset sub-class. The total

replacement value of assets within each asset sub-class is shown to the right of the condition grade bar.

Figure 2-2 Asset Condition Grade Profile



To adequately meet service levels and manage risk while minimizing lifecycle costs, most assets should generally be preserved in fair or better condition. The above figure shows that the majority of the Airport's assets – in fact **80.1%** – are in fair or better condition. A total of **2.5%** of assets are in poor condition and **17.5%** of assets are in very poor condition. Assets in poor or very poor condition require increased attention and renewal investment (i.e., funding and staff resources) to avoid increased maintenance costs and/or unexpected failure. The majority of assets that are currently in very poor condition are aircraft runway 11-29 which is closed to traffic and the Hangar 11 facility which is under review as it is in very poor condition and not functional as a hanger as it does not have airside access. Assets in poor and very poor condition would typically be included in 10-year capital renewal program and budget forecast.

2.5 Confidence of Data

The Airport has well-developed policies, procedures and guidelines for sustainability of Tangible Capital Asset (TCA) information. The information that supports this AM Plan is also continuously updated. The Airport intends to update this AM Plan every five years, as required by O.Reg. 588/17, Asset Management Planning for Municipal Infrastructure, or more frequently as needed.

The Airport's asset management program is always developing and implementing standards to improve the quality and consistency of information captured. Section 6 of this AM Plan provides a summary of the confidence in the data used to develop this AM Plan and an improvement and monitoring plan.

3 LEVELS OF SERVICE

3.1 Overview

One of the basic principles of sound asset management practice is to describe the levels of service the current and future community want and are prepared to pay for, and the associated lowest cost to deliver those levels of service. Performance management is the systematic and cyclical process of identifying objectives, collating information regarding the achievement of those objectives, reporting the information in a meaningful way, and using the information to improve delivery of services to the community.

Monitoring the Airport's performance against defined levels of service helps to improve the Airport's service delivery by focusing program activities and assets on priorities, and identifying under-performance so that it can be addressed. Performance measures or indicators are used for this purpose.

GOOD PERFORMANCE MANAGEMENT

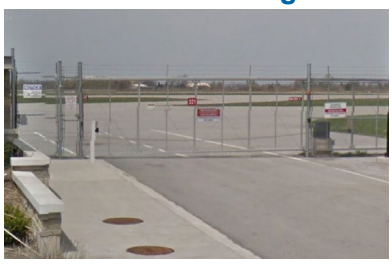
Helps the Airport to

- improve service delivery
- demonstrate affordability
- provide accountability to the community

3.2 Current Services and Programs

The Airport provides the following scope of services to the community that are included in the AM Plan:

Asset Class	Asset Types
Airside 	• **Airside assets** include the main runways, taxiways, aprons, and airfield lighting which are necessary for aircraft to complete safe departures and arrivals from the Airport.
Groundside 	• **Groundside assets** include the supporting infrastructure which ensure the airport remains easily accessible for staff and visitors, such as roads and parking lots. Groundside also includes the fuel farm and buildings/facilities such as the hangar and maintenance garage, which enable the safe and efficient operation and maintenance of aircraft.

Asset Class	Asset Types
Site Servicing 	• **Site servicing assets** provide essential services such as stormwater management, wildlife management, electrical service, fencing, signage, water service, and wastewater service. The objective of site servicing is to prevent flooding, provide security of the airfield, and provide other services.
Vehicles and Equipment 	• **Vehicles and equipment** owned by the Airport allow operations staff to perform necessary maintenance tasks to airside, groundside, and site servicing assets, and include: – **Vehicles** such as tractors, pick-up trucks, runway sweepers, and other vehicles – **Field equipment** such as snowblowers, line painters, decelerometers, and de-icing spreaders.
IT Equipment 	• IT equipment includes the Airport's servers, communications devices and equipment, security system such as cameras and security software, as well as laptops and printers.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of Airport services are outlined in **Table 3-1**.

Table 3-1 Legislative Requirements

Legislation	Requirement
Municipal Act, 2001	The main statute governing the creation, administration and government of municipalities in Ontario, other than the City of Toronto.
Ontario Regulation 588/17 The Infrastructure for Jobs and Prosperity Act, 2015	Sets out the principles for the provincial government to regulate asset management planning for municipalities.
Accessibility for Ontarians with Disabilities Act (AODA)	Develops, implements, and enforces accessibility standards to achieve accessibility for Ontarians with disabilities with respect to goods, services, facilities, accommodation, employment, buildings, structures, and premises on or before January 1, 2025.
Public Section Accounting Board Standard 3150	Standards on how to account for and report on tangible capital assets in government financial statements.
Canadian Aviation Regulations (CARs)	A compilation of regulatory requirements designed to enhance the safety and competitiveness of the Canadian aviation industry. They correspond to areas of aviation which Transport Canada, Civil Aviation is mandated to regulate (personnel licensing, airworthiness, commercial air services, etc.).
TP312 Aerodrome Standards and Recommended Practices	These standards complement subpart 302 of the Canadian Aviation Regulations (CARs). They set out requirements such as: physical characteristics; obstacle limitation surfaces; visual aids; and some technical services the aerodrome operator at a certified land aerodrome (airport) provides to support aircraft operations.
TP1247 Aviation - Land Use in the Vicinity of Aerodromes	Describes the operational characteristics of aerodromes and the different types of land uses outside the aerodrome property boundary and recommends, where applicable, guidelines for those land uses in the vicinity of aerodromes. Includes links to source documents to further explain the technical aeronautical requirements.
Airport Wildlife Management Bulletin - TP 8240 - No. 38	The airport bird-hazard risk analysis process complements the provisions of TP 1247 with Transport Canada's airport bird-hazard risk analysis process (ABRAP)
ICAO Annex 14 Aerodromes Design and Operations	Provides a series of design criteria for efficiently proportioned aerodromes. Prescribe the physical characteristics and obstacle limitation surfaces to be provided for at aerodromes, and certain facilities and technical services normally provided at an aerodrome.
Highway Traffic Act R.R.O. 1990 Reg. 615: Signs	Sets out the standard for the erection and maintenance of signs.
Highway Traffic Act R.R.O. 1990	Sets out fleet and equipment inspection requirements Reg. 174/22: Classes of Vehicles Requiring Annual and Semi-Annual Inspections Reg. 611: Safety Inspections Reg. 199/07: Commercial Motor Vehicle Inspections Reg. 587: Equipment
Technical Standards and Safety Act, 2000	Sets out the technical standards and safety regulations to enhance public safety by providing for the efficient and flexible administration of various industries or equipment.

Legislation	Requirement
Ontario Building Code Act, 1992	The legislative framework governing the construction, renovation and change-of-use of a building in Ontario. The Ontario Building Code, a regulation under the Act, establishes detailed technical and administrative requirements and minimum standards for building construction in public health and safety, fire protection, structual sufficienty, construction materials, plumbing and mechanical systems.

Legislated Community Levels of Service

Legislated requirements define the standards according to which the Airport is legally obligated to provide services to the community. The Airport delivers services in adherence to applicable legislative requirements, including required compliance monitoring and reporting. Many legislated levels of services relate to service and asset safety and reliability. Information on regulatory inspections is contained within various databases and maintained by Airport staff at the operational level to ensure legislative compliance. It is typical that details of compliance be held at the operational level, but that reporting that confirms that the Airport complies is reported at a higher level.

3.4 Corporate Vision, Mission and Values

The Niagara District Airport Commission's 2023-2026 Strategic Plan defines the organization's vision, mission and values as follows:

Vision

To become an indispensable aviation gateway.

Mission

To provide an elevated airport experience for customers and community.

Values

Safety. Efficiency. Integrity. Customer-Focused. Teamwork.

The Strategic Plan identifies the following Planning Goals for 2024 – 2026:

Secure Partners for Growth

- Obtain funding to engage in airside development
- Attract scheduled & charter passenger services

The Strategic Plan priorities are as follows:

Advocacy

- Secure Funding
- Develop Advocacy Strategy and Advance Business Case for Growth

Alignment

- Alignment with Municipal Partners
- Secure Stakeholder Support for the Business case
- Community Engagement

Analytics

- Capture Enhanced Demographic Data
- Publish a Comprehensive and Compelling Business Case

The Asset

- Create Conditions for Growth
- Explore Growth Opportunities within Current Capacity
- Evaluate Current Infrastructure Capabilities vs. Future Needs

3.5 Customer and Technical Levels of Service

Customer LOS measure how the customer receives the service and whether value to the customer is provided. Figure 3-1 shows that Corporate LOS commitments and the legislated LOS referenced by them drive the definition of more specific Customer (also known as Community) LOS, which can be categorized as relating to one of the following service attributes:

- **Capacity:** Statements that reflect whether the service and supporting assets are of sufficient capacity to meet user demand.
  - Does the Airport need more or less of these services and assets?
- **Function:** Statements that reflect the suitability of the services, operations and assets for the user or other stakeholder.
  - Do they meet the needs of the community?
  - Do they meet regulatory requirements including those for health and safety, environmental protection and barrier free access?
  - Do they support the Airport's strategic priorities?
- **Reliability & Quality:** Statements that reflect whether services and supporting assets are reliable, available when needed, and responsive to customers.
  - Are assets maintained and renewed to ensure a state of good repair (i.e., condition)?
  - Are services continuous?
  - Is the community involved in planning, treated respectfully and responded to promptly?
- **Affordable:** Statements that reflect whether services and supporting assets are adquately funded in both the short and long term.

Technical LOS measures support the customer LOS statements. They relate to the allocation of resources to service activities to best achieve the desired customer outcomes and demonstrate effective performance.

Customer LOS are translated into Technical LOS, where:

- **Capacity LOS** drive assessment of expansion needs
- **Function LOS** drive assessment of upgrade needs

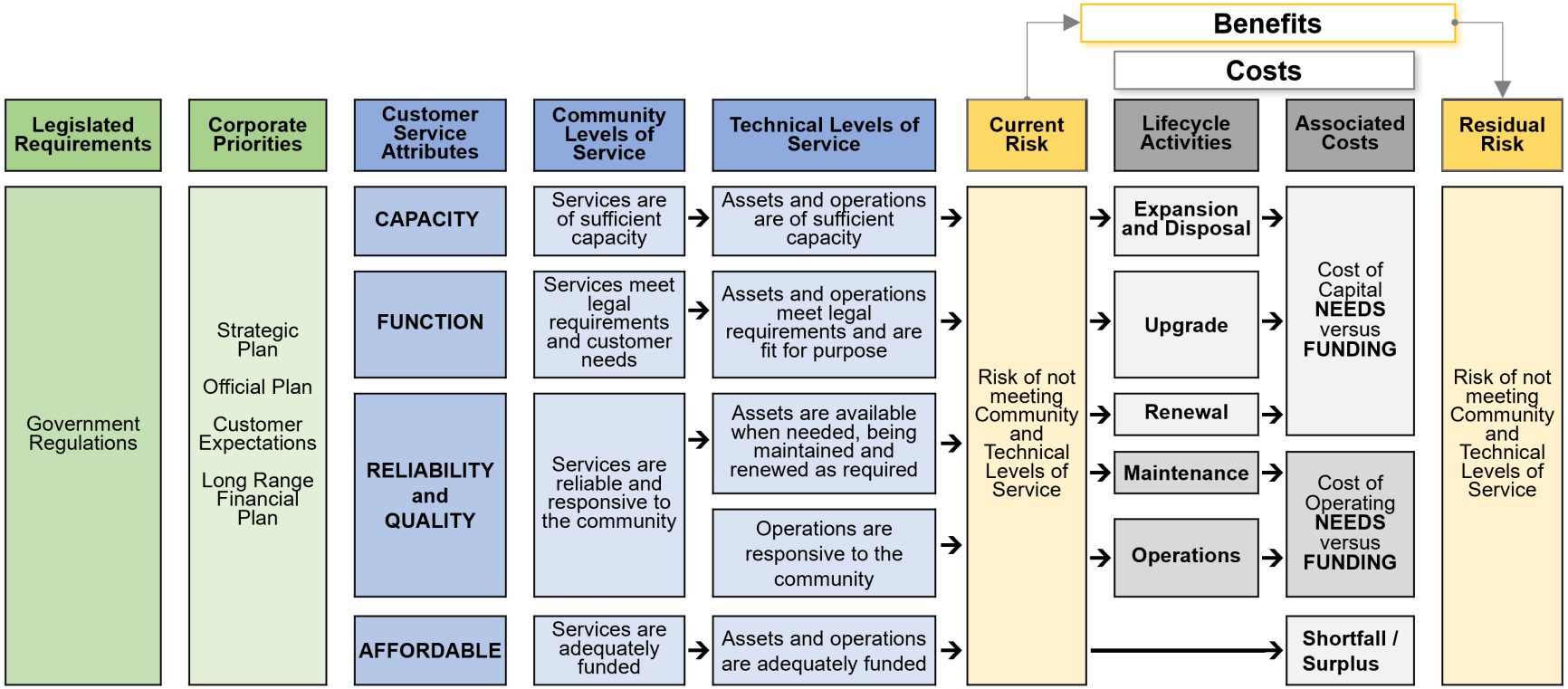
- **Reliability & Quality LOS** drive assessment of renewal, maintenance and operations (and programming) needs
- **Affordability LOS** drive assessment of financial sustainability needs.

The risks of failing to achieve Customer and Technical LOS commitments are assessed, and lifecycle activities are prioritized to address those risks. Lifecycle activities may include expansion, upgrade, renewal, maintenance or operational activities, depending on the category of LOS to be addressed. In some cases, lifecycle activities address several Customer and Technical LOS. For example, a project on a runway may simultaniously increase capacity, make upgrades to meet regulatory requirements, and renew existing pavement. The nature of the lifecycle activity determines whether it should be funded as capital or operating, as well as eligible funding sources. As shown in Figure 3-1, even after the lifecycle intervention, some residual risk may remain.

3.6 Customer Research and Expectations

Customer input will be sought as part of the Alignment and Analytics priorities identified in the 2023-2026 Strategic Plan. This includes public opinion, stakeholder group surveys and municipal partner input to collect information about user service patterns, behaviours and preferences today and potentially in the future. This customer research, along with demographic analysis, will provide insight into customer needs and perceptions related to demand and areas of improvement. This information will be used to inform the 2025 AM Plan's proposed LOS.

Figure 3-1 Levels of Service Framework



3.7 Current Performance

The current performance related to capacity and function are not provided in this AM Plan as an 2024 Airside Redevelopment Study is currently under development that will define the demand for expanded services, as well as the required capacity and assets to support those services.

The reliability service attribute indicates whether assets are fit for service. The Technical LOS measures the percent of assets in renewal backlog, i.e. due or overdue for replacement. As shown in Table ES-1, 17.5% of the Airport's assets are in renewal backlog. These assets correspond to the assets identified as being in Very Poor condition, including Runway 11-29, Hangar 11, a front-end loader, a snowblower and some IT equipment.

Table 3-2 Current Performance – Reliability

Customer LOS Statement	Technical LOS Indicator	Current Performance	Comment
Assets are fit for service	% assets in renewal backlog, i.e. due or overdue for replacement	**17.5%**	Less is better

The O.Reg. requires the organization to forecast the cost of maintaining the current performance over the next 10 years, in othder words, to prevent the renewal backlog from growing.

The affordability service attribute will be addressed in the Financial Summary of the AM Plan.

3.8 Factors Impacting Levels of Service Performance

External trends and issues affecting expected levels of services or the Airport's ability to meet the defined levels of services include the following.

- Population and employment changes (e.g., growth, demographics), which will impact infrastructure use.
- Changes in expectations for patterns of use from the public, which will impact infrastructure use and revenue for services.
- Potential changes in technology or methods, which may replace obsolete equipment, provide longer asset life, and/or achieve higher quality and greater efficiencies.
- Potential changes to the cost of input variables (e.g., cost of power, fuel), which will impact costs to deliver the services.
- Infrastructure failing prematurely due to environmental factors and/or construction practices requiring renewal much earlier than the expected life of the asset.
- Availability of external funding (e.g. federal and provincial infrastructure programs), which may affect the infrastructure improvement activities that can be undertaken.
- Unexpected downloading of services by more senior levels of government.
- Popularity of sustainability initiatives and "greening" trends (e.g. LEEDs).
- Climate change, including changing storm events and patterns (e.g., higher frequency storms occurring more regularly), which will impact the infrastructure.
- Potential changes in Federal or Provincial legislation.

4 ASSET MANAGEMENT STRATEGY

The Asset Management Strategy section of the AM Plan describes the framework that the Airport uses to identify critical assets and quantify risk to enable prioritization of lifecycle activities, and summarizes the asset management strategies (i.e., planned actions) that will enable the assets to maintain the current levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost.

4.1 Overview of AM Strategy Development

Monitoring the Airport's performance against defined levels of service helps to improve the Airport's service delivery by identifying under-performance so that it can be addressed. Assessing the risks associated with failing to achieve the defined Costomer and Technical LOS helps to priotize lifecycle activities and minimize residual risks.

To achieve its program objectives, the Airport builds new infrastructure assets to meet growth needs and manages existing assets to meet reliability needs – all with limited funds. Asset lifecycle management strategies are planned actions that enable assets to provide the defined levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost.

Asset lifecycle management strategies are typically organized into the following categories:

- **Non-asset solutions** – actions or policies that can lower costs or extend asset life (e.g., better integrated infrastructure planning and master planning, demand management, insurance, process optimization, managed failures).
- **Growth or expansion** – activities to provide a new asset that did not exist previously (e.g. a parking lot) or an expansion to an existing (e.g., widening a road, lengthening a runway).
- **Upgrade or enhancement** – activities to provide a higher level of service capability from an existing asset to achieve better fit for purpose (e.g., increasing the structural capacity of current airside pavement) or to meet regulatory or corporate requirements.
- **Renewal** – activities that return the original service capability of an asset (e.g. replacing the roof of a building or replacing an existing snow plow with a new one).
- **Maintenance** – activities to retain asset condition to enable it to provide service for its planned life (e.g. pavement patching, building and structure repairs), including regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.
- **Operations** – regular activities to provide services (e.g., using / running a piece of equipment, cleaning, provision of energy)
- **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.

The Airport assesses the costs of potential lifecycle activities to determine the lowest lifecycle cost strategy to manage each asset type. The sum of all asset lifecycle management strategies informs the minimum cost to sustain each asset type, for each service area. Failing to take care of assets can impact the total cost of ownership for that asset and can also have other impacts such as causing damage to other infrastructure or causing interruption to service delivery.

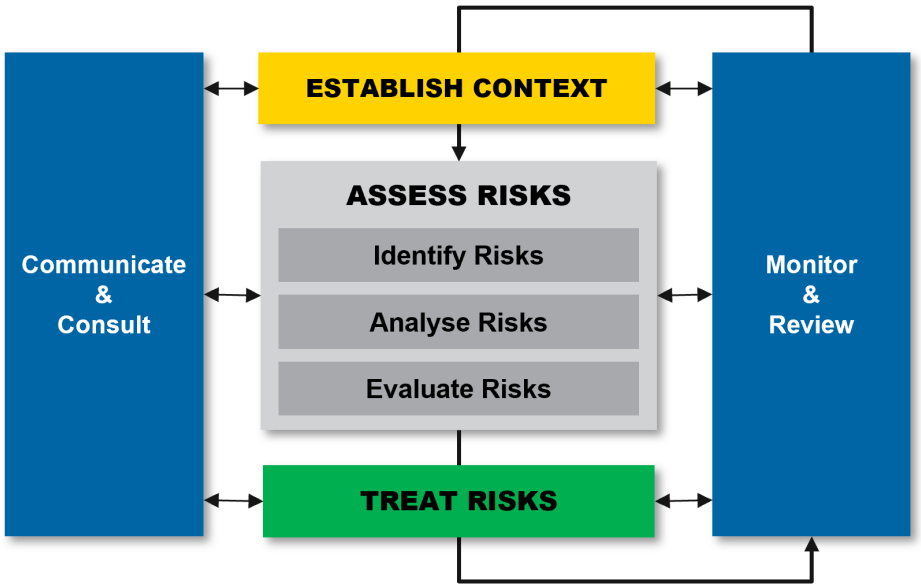
4.2 Risk Assessment

4.2.1 Risk Management Framework

Risk management refers to the management of uncertainty on business objectives. For this AM Plan, risk management was guided by the ISO 31000 Standard for Risk Management, which provides globally accepted principles and guidelines for risk assessment.

The ISO 31000 Risk Management Standard outlines the steps involved in Risk Management as shown in Figure 4-1.

Figure 4-1 ISO 31000 Risk Management Process



- **Establish Context** – the environment in which the Airport seeks to define and achieve its objectives
- **Identify Risks** – that could affect achievement of Airport's LOS
- **Analyze Risks** – estimate the level of a risk by approximating likelihood and consequence of occurrence
- **Evaluate Risks** – determine whether or not a specified level of risk is acceptable or tolerable
- **Treat Risks** – select and implement one or more treatment options
- **Monitor and Review** – determine the current status and whether or not required LOS are being achieved
- **Communicate and Consult** – an iterative two-way dialogue between the Airport and its stakeholders throughout the risk management process.

4.2.2 Risk Context

For this AM Plan, the Airport defines the risk as the failure to maintain current LOS.

4.2.3 Risk Assessment

Table 4-1, shown below, presents the **Risk Evaluation Matrix Framework** that depicts the risk exposure, based on the likelihood of occurrence and overall consequence rating for each risk.

Table 4-1 Risk Evaluation Matrix Framework

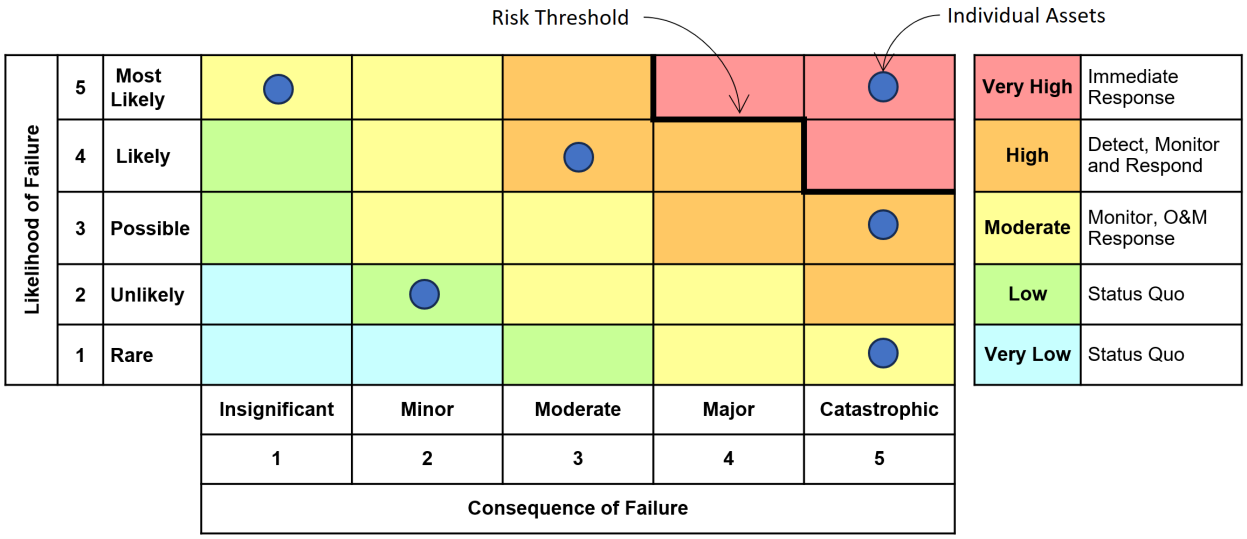


Table 4-2, on the following page, presents the **Consequence Rating Criteria** used to determine consequence ratings, which details the ratings for the severity of consequences of risks. For each risk, consequences for the following five consequence categories are considered: service delivery, economic, environmental, health and safety, and social. An overall consequence rating is calculated by taking the highest consequence rating from across the five consequence categories.

Table 4-3, two pages ahead, presents the **Probability (Likelihood) Rating Criteria** used to determine the likelihood of occurrence (i.e., the chance of a significant single event or ongoing/cumulative occurrence). The likelihood of occurrence can be defined for each of the three service attributes: capacity, function, reliability but is considered for reliability only in this AM Plan as a master plan is currently under development that will define the demand for and capacity of the services and supporting assets and the suitability of the services, operations and assets for stakeholders.

Table 4-2 Consequence Rating Criteria

CoF Score	Consequence (Impacts) of Failure				
	Service Delivery	Economic	Health and Safety	Environmental	Social
1	No impact to services or small number of customers experience disruption or impact to non-essential service.	Damages, losses, or fines of under $10,000	No obvious potential for injury or affects to health.	Asset degradation/failure has negligible impact on environment, emissions, and pollution. Impact fully reversible within 1 week.	Event only of interest to individuals. No community concern.
2	Localized service disruption or impact to non-essential services.	Damages, losses, or fines of $10,000-$200,000	Potential for minor injury or affects to health of an individual.	Asset degradation/failure has minor impact to the environment including potential for increased emissions or pollution. Prosecution possible. Impact fully reversible within 3 months.	Minor community interest. Local media report.
3	Significant localized disruption or impact to non-essential services and/or localized disruption to essential services.	Damages, losses, or fines of $200,000-$2,000,000	Potential for serious injury or affects to health of one or more individuals with a possibility of short term disability or hospitalization.	Asset degradation/failure has significant short-term impact to the environment including a likely increase of emissions or pollution. Prosecution probably. Impact fully reversible within 1 year.	There will likely be moderate local media exposure which may last several days. Public Community Discussion. Broad adverse media coverage.
4	Widespread short-term disruption or localized long-term disruption of essential services.	Damages, losses, or fines of $2,000,000-$10,000,000	Potential for serious injury or affects to health of one or more individuals with a possibility of loss of a life.	Asset degradation/failure poses risk of environmental contamination and/or has significant long-term impact. Likely a substantial increase to emissions or pollution. Prosecution expected. Impact fully reversible within 5 years.	There will likely be significant, negative, local or provincial media exposure which may last several days. Loss of confidence in the Commission. National publicity. Public agitation for action.
5	Airport-wide or long-term disruption of essential services.	Damages, losses, or fines of over $10,000,000	Potential for death or multiple deaths with probable permanent damage.	Asset degradation/failure poses significant risk to environment including a major long-term impact. Likely to result in contamination. May become of Provincial or Federal importance. Prosecution. Long term study. Impact not fully reversible.	There will likely be significant, negative, national or international media exposure lasting several days or weeks. Public investigation. International coverage. Management changes demanded.

Table 4-3 Probability (Likelihood) Rating Criteria

PoF Score	Probability (Likelihood) of Failure				
	Frequency	Probability	Capacity	Function	Reliability
1	Within 10 to 20 years	0% to 10%	Demand corresponds well with actual capacity and no operational problems experienced. Meets current and future capacity needs within planning horizon.	The infrastructure in the system or network meets all service delivery needs (i.e., health, safety, security, legislative, etc.) in a fully efficient and effective manner.	Asset is physically sound and is performing its function as originally intended. Asset is new or at the beginning of its service life. (< 25% Life Consumed)
2	Within 6 to 10 years	11% to 30%	Demand is within actual capacity and occasional operational problems experienced.	The infrastructure in the system or network meets service delivery needs (i.e., health, safety, security, legislative, etc.) in an acceptable manner.	Asset is physically sound and is performing its function as originally intended. Typically, asset has been used for some time but is within mid-stage of its expected life. (25% < Life Consumed <=50%)
3	Within 3 to 5 years	31% to 60%	Demand is approaching actual capacity and/or operational problems occur frequently. Meets current capacity needs but not future without modifications.	The infrastructure in the system or network meets service delivery needs (i.e., health, safety, security, legislative, etc.) with some inefficiencies and ineffectiveness present	Asset is showing signs of deterioration and is performing at a lower level than originally intended. (50% < Life Consumed <=75%)
4	Within 2 years	61% to 80%	Demand exceeds actual capacity and/or significant operational problems are evident.	The infrastructure in the system or network has a limited ability to meet service delivery needs (i.e., health, safety, security, legislative, etc.).	Asset is showing significant signs of deterioration and is performing to a much lower level than originally intended. (75% < Life Consumed <=100%)
5	Within 1 year	81% to 100%	Demand exceeds actual capacity and/or operational problems are serious and ongoing. Does not meet current capacity requirements.	The infrastructure in the system or network is seriously deficient and does not meet service delivery needs (i.e., health, safety, security, legislative, etc.) and is neither efficient nor effective.	Asset is physically unsound and/or not performing as originally intended. Asset has reached end of life and failure is imminent. (> 100% Life Consumed)

Table 4-4 shows the Consequence of Failure (CoF) rating and service life used to evaluate risks and subsequently determine asset renewal activity needs.

Table 4-4 Consequence Rating (CoF) and Service Life

Asset Class	Asset Sub-Class	Asset Type	Asset Sub-Type	CoF
Airside	Aircraft Runways	Pavement	RW Pavement	5
			Rarely Used Pavement	4
			Closed Pavement	1
		Signage	TA Pavement	5
		Pavement Paint	TA Tie-Down	5
	Aircraft Taxiways, Apron	Pavement	AS Signage	5
			Rarely Used Pavement	4
			Closed Pavement	1
		Aircraft Tie-Down Pad	AS Pavement Paint	5
		Pavement Paint	AFL-8	5
	Airfield Lighting	Field Electric Centre Structure	AFL-10	5
		Field Electric Centre & Controls	AFL-15	5
		Underground Cables & Conduits	AFL-20	5
		Lighting		5
Groundside	Roads	Pavement	GS Pavement	3
		Lighting	Road Lighting	3
		Pavement Paint	GS Pavement Paint	3
	Parking	Curb & Gutter	GS C&G	3
		Lighting	Parking Lot Lighting	3
	Facilities	Terminal	Building	5
			Furniture	3
			Flagpoles	3
			Monuments	3
			Flower Pots	2
			Outdoor Furniture	2
		Hangar 11	Building	2
		Maintenance Garage	Building	3
		Fuel Farm	Concrete Pads	4
			Fuel System	4
Site Servicing	Electrical	Underground Service Cable		5
	Fencing	Gate and Control System		5
		Barbed Wire Fencing		5
		Fencing		5
	Stormwater Mgmt	Storm sewers		4
		CBMH - catchbasins		4
		DIMH		4
		Culverts		4
		Ditches		4
		Inlets & Headwalls		4
		Oil-Grit Separator		4
	Signage	Rules and Regulation		4
		Bylaw Sign		3

Asset Class	Asset Sub-Class	Asset Type	Asset Sub-Type	CoF
Site Servicing		Information Sign		2
		Other		2
	Wildlife Mgmt	Culverts		4
	Wastewater	Sanitary mains		4
		MH		3
	Water	Watermains		4
		Hydrants		4
		Meter Chamber		3
Vehicles & Equip	Equipment	Loader Plow		4
		Mower		4
		De-icing Spreader		4
		Mower		4
		Plow Blade		4
		Decelerometer		3
		Line painter		3
		Loader		3
		Power Washer		3
		Range Finder		3
		Snowblower		3
	Maintenance Vehicles	Loader		4
		Plow Truck		4
		Tractor		4
		Pick-up Truck		3
		Sweeper		3
		Utility Vehicle		3
IT Equipment	Servers	Servers		4
	Devices and Printers	AP		3
		Lenovo Thinkpad Computers		3
		Miscellaneous Computer Equip		2
		Printer		2
	Security Technology	Access Keypad		5
		Security Software		5
		Cameras		4
	Communications Equip	AV System		4
		Radios		3
		Handheld Radios		3

Table 4-5 summarizes the Airport's Risk Evaluation Matrix, based on the likelihood of occurrence and overall consequence rating for each risk, for all Airport assets. Note that, although 17% of the Airport's assets are in Very Poor condition, only 0.3% are in the Very High risk exposure category. The Very High risk exposure assets consists of the ARCAL controller for the aircraft runway.

Table 4-5 Risk Evaluation Matrix ($M)

Likelihood of Failure						
	5	$2.2	$2.4	$0.2	--	**$0.006**
	4	--	$0.0	$0.6	$0.0	--
	3	--	$0.0	$1.5	$1.2	$6.6
	2	--	$0.1	$0.3	$1.3	$8.3
	1	--	$0.0	$2.1	$0.4	$0.3
		1	2	3	4	5
		Consequence of Failure				

Risk Exposure	CRV* ($M)	CRV* (%)
Very High	$0.006	0.02%
High	$8.6	31.2%
Moderate	$16.4	59.3%
Low	$2.6	9.4%
Very Low	$0.0	0.0%
Total	**$27.7**	**100.0%**

* CRV = Current Replacement Value

4.3 Asset Management Strategies

The Airport uses its understanding of current service delivery gaps and potential future gaps to inform the timing, location and amount of needed investments in infrastructure assets. The Airport aims to provide sufficient service capacity to meet demand and manages the condition and renewal of assets to sustain defined service levels, including meeting legislated and other corporate requirements.

4.3.1 Growth and Expansion Strategies

The Airport's approaches to accommodate growth and expansion needs will be identified in the 2024 Airside Redevelopment Study, which will define the demand for and capacity of the services and supporting assets.

4.3.2 Upgrade and Enhancement Strategies

Upgrade and enhancement activities provide a higher level of service capability from an existing asset to achieve a better fit for purpose (e.g., increasing the structural capacity of current airside pavement) or to meet regulatory or corporate requirements such as for health, safety, and environmental protection.

The 2024 Airside Redevelopment Study includes upgrade and enhancement strategies needed to support the proposed redevelopment. In addition, the Airport may produce functional needs plans that apply across the organization such as accessibility and energy conservation plans, which will provide upgrade and enhancement needs forecasts. As it is common for growth and upgrade strategies to be undertaken simultaneously, these lifecycle strategies are often reported together.

4.3.3 Renewal Strategies

All assets physically deteriorate at different rates to eventual failure and loss of ability to deliver the required levels of service. The Airport invests in condition assessments to gain the critical knowledge needed to understand where the assets are in their lifecycles and identify performance gaps.

For each identified renewal performance gap, technically feasible lifecycle options are assessed to determine the lowest cost solution to adequately address the gap. For each asset type, the Airport develops an asset renewal strategy that identifies the frequency and cost of activities that provide the defined level of service, at the lowest lifecycle cost. The renewal strategies are applied to the asset portfolio over time to determine the program of renewal activities and the amount that must be invested in the Airport's asset portfolio to sustain current service levels.

For some asset types, such as most fleet and information technology assets, the renewal strategy is very simple – replace the asset at the end of its useful life. For other asset types, such as a facility or pavement, the renewal strategy is much more complicated. For a facility, there are many thousands of components, some of which may be rehabilitated or replaced numerous times throughout the life of the facility. For pavement, there are numerous treatment types and they may each only be applied a limited number of times throughout the life of the pavement, and only under certain conditions.

Over time, as the Airport refines the asset management strategies through optimization analyses, the tracking of condition against targets and the application of renewal activities to meet defined levels of service becomes more routine.

4.3.4 Operations and Maintenance Strategies

The distinction between renewals (which are capital works) and maintenance (which is an operational expense) is set by accounting policies and standard operating procedures. Maintenance ensures the asset continues to deliver defined levels of services, while renewals can extend the asset's useful life. Renewals and maintenance are strongly linked; maintenance strategies can hasten or delay the need for renewals, and, if renewals are deferred, maintenance needs will often increase.

Asset operations and maintenance requirements and required resources are assessed and prioritized based on:

- Carrying out legislated operations and maintenance activities to ensure safety and environmental sustainability in accordance with appropriate regulations.
- Conducting routine and preventative maintenance activities to ensure preservation of existing assets.
- Analysis of current operations and maintenance contracts and known historical costs of delivering defined levels of services to forecast future operations and maintenance costs. For example, in some cases operations and maintenance costs increase at the rate of inflation, and in other cases such as energy and oil for pavement, costs have increased significantly more over time than the overall rate of inflation.
- Assessing consequential operations and maintenance requirements of significant new or upgraded infrastructure planned for the asset portfolio.

Any asset portfolio growth will place significant pressure on the capacity of existing operations and maintenance. Consequential operational expenditure is the operations and maintenance cost

associated with new and upgraded assets. For example, for a new facility, the costs of electricity, natural gas and routine maintenance all contribute to the consequential operational expenditure associated with that new asset. These costs will be incurred by the Airport into the future for as long as the facility is in use. For most assets, a good estimate of the consequential operational expenditure required to operate and maintain the new assets is simply the existing operations and maintenance cost multiplied by the growth factor.

5 FINANCING STRATEGY

5.1 Introduction

The purpose of a financial strategy is to provide a path to financial sustainability.

Financial sustainability involves managing service levels, infrastructure and financial assets in both the short and the long term. An organization is considered financially sustainable if:

- Its revenues are commensurate with its level of service aspirations
- It can adjust its capital plan, operating programs and service levels in response to changes in economic conditions or revenues
- It can keep its infrastructure in a state of good repair and replace it at the right time
- It can accommodate growth without unacceptable rate or debt increases.

Potential risks to achieving municipal financial sustainability include:

- A mismatch between level of service aspirations and fiscal capacity
- Uncertainty in the future cost of needed infrastructure investments
- Unforeseen shocks to revenue, such as an economic downturn or a reduction in revenue
- Demand that does not materialize as expected.

5.2 Capital Needs Forecast

Capital Needs Forecast to Service Growth and Upgrade

To meet the demand for expanded services, the Airport constructs new and expands the capacity of the asset portfolio, in addition to implementing non-asset strategies. To meet demand for functional improvements to services, the Airport upgrades the functionality of the asset portfolio. The needs to accommodate growth and upgrade are not known at this time but will be identified in the 2024 Airside Redevelopment Study.

Capital Needs Forecast to Service Renewal

To manage asset condition and address potential asset and associated service reliability gaps, the Airport continuously renews the asset portfolio. In accordance with O.Reg. 588/17 requirements, Figure 5-1 shows the capital renewal needs forecast to **maintain current LOS** (i.e., current % of assets in very poor condition), for each of the next 10 years (coloured bars) and on average for the next 10 years (dashed black line). These forecasts are based on a range of methods including industry standard physical condition assessments and needs forecasts, staff-report condition assessments and needs forecasts, install date and estimated useful life, and annuities (replacement cost divided by the estimated useful life). For reference, the solid red line shows the average funding available for the past 5 years (2020 to 2024) as $0.4 million/year.

Figure 5-1 Renewal Needs and Funding – Maintain Current LOS

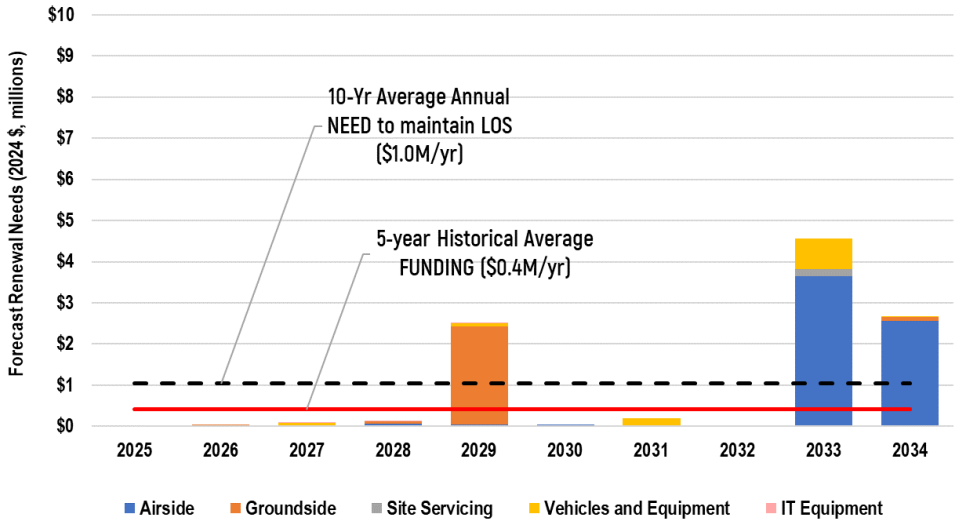


Figure 5-2 shows the forecast condition distribution associated with the funding scenario depicted in Figure 5-1. This scenario was designed to maintain the current LOS, i.e. the renewal backlog. In 2024 the renewal backlog was 17.5%. The backlog grows to 20.3% by 2034; however, through the period 2025-2034; the annual renewal backlog averages 17.3%.

Figure 5-2 Condition Forecast – Maintain Current LOS Scenario

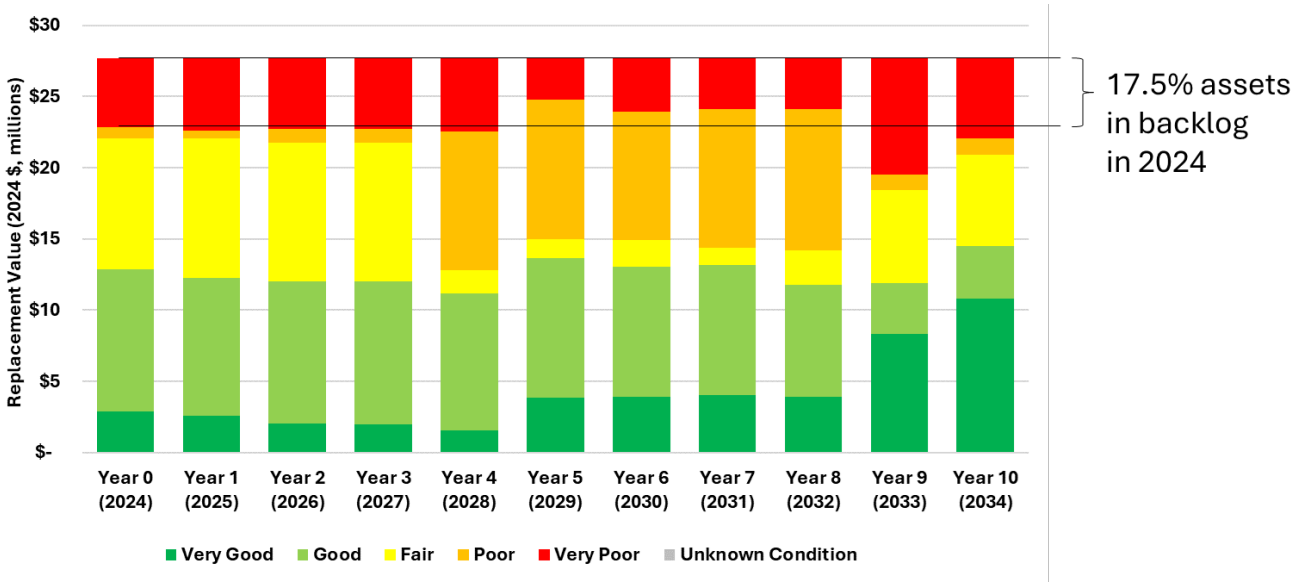


Figure 5-3 shows the capital renewal needs forecast to address all outstanding needs for each of the next 10 years (coloured bars), the average for the next 10 years (dashed black line), and the average historical renewal funding of $0.4 million/year (solid red line). The Figure shows that $1.6

million/year would be needed to address all outstanding needs. In figure 5-4, the condition forecast shows that this level of funding would eliminate the renewal backlog.

Figure 5-3 Renewal Needs and Funding – Eliminate Backlog

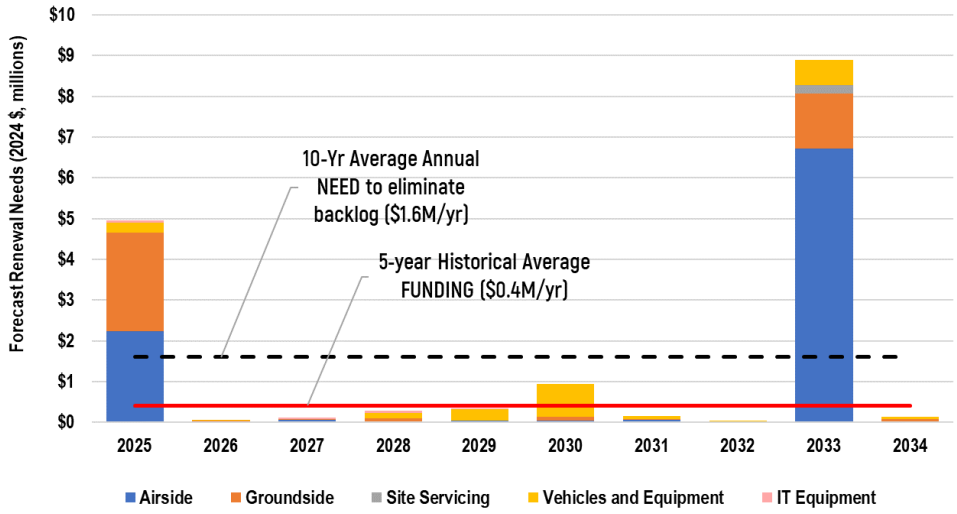
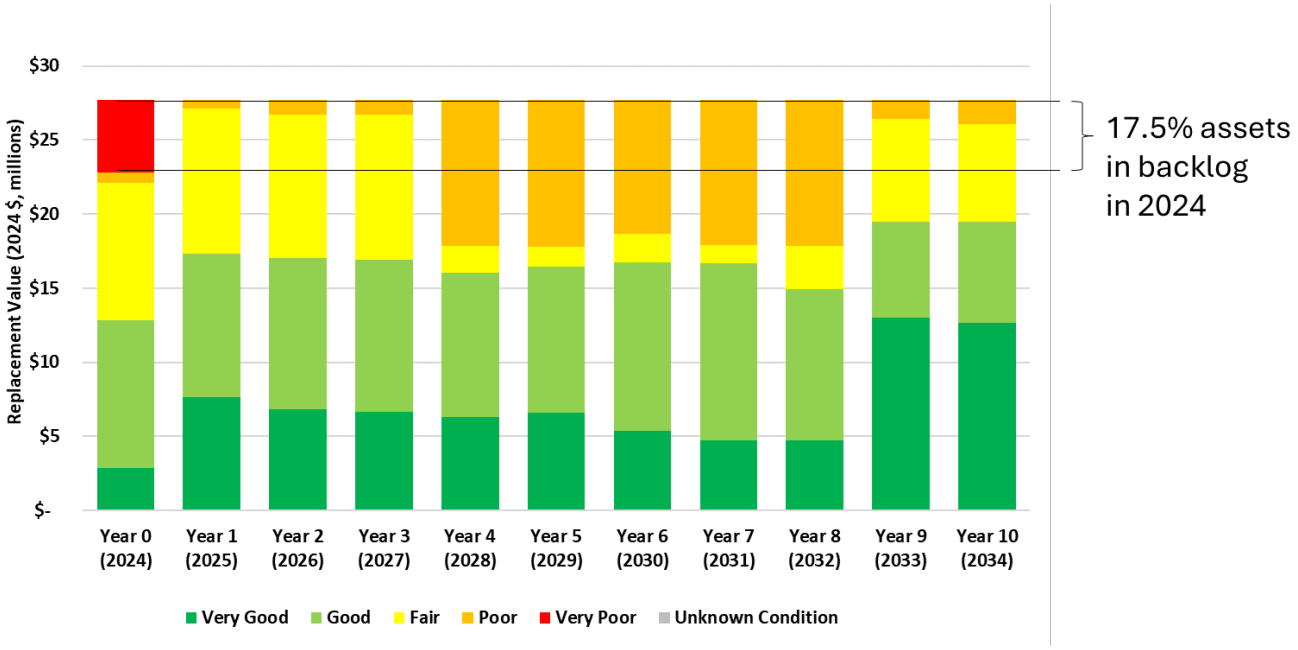


Figure 5-4 Condition Forecast – Eliminate Backlog Scenario

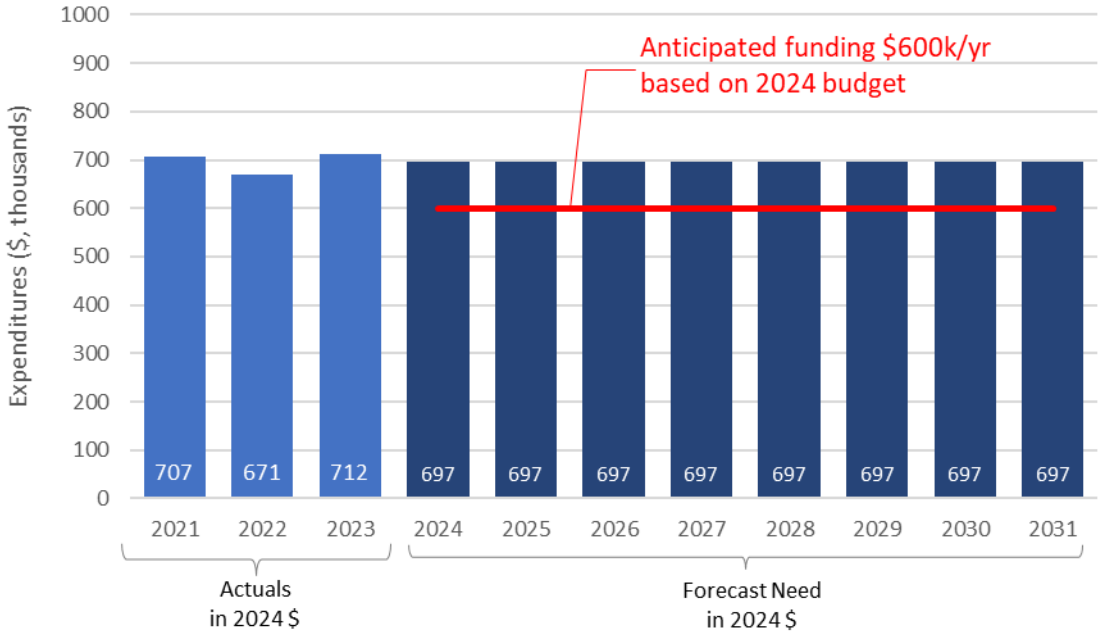


5.3 Operating Needs Forecast

To deliver the current LOS, the Airport undertakes regularly programmed activities, including operating and maintaining the assets and providing services. Any asset portfolio growth will place pressure on the capacity of existing operations and maintenance needs; however, growth and upgrade needs for the next 10 years are not defined at this time.

Figure 5-3 shows the actual expenditures for the years 2021-2023, inflated to 2024 $. The forecast needs for future years (2024-2025) is estimated at $697k/year, which is the average annual expenditure for the years 2021-2023. For comparison, the figure shows the 2024 budget of $600k/year. This

Figure 5-5 Annual Operating Needs Forecast*



** Amounts include only costs related to operations and maintenance of assets, not full operating budget.*

5.4 Funding Sources for Asset Lifecycle Strategies

The above sections provide a summary of the forecasted needs to renew, operate and maintain Airport service levels and assets. The Airport's ability to deliver on its AM Plan depends on its financial strategy. Financial sustainability requires long-term planning so that the necessary steps can be taken in the near-term to manage long-term financial risks.

A number of revenue sources are available to fund the capital and operating needs:

- User fees
- Financial support from the cities of Niagara Falls and St. Catharines, and the town of Niagara-on-the-Lake based on population
- Grants from the Federal Government (only with scheduled service).

Note that the Airport is not permitted to fund using debt or hold reserves.

The Airport is currently developing a strategy to determine how best to fund each of the asset lifecycle needs, across each of the asset classes. Alternative procurement and funding models are also being considered.

6 PLAN IMPROVEMENT AND MONITORING

6.1 Data Confidence

Data for asset management is created and collected through documented data specifications and protocols in phases that correspond to the general lifecycle of the assets:

- **Inventory Data** is collected during the asset acquisition / creation phase and provides identification, location and description data. Examples include asset ID, description, purchase year, installation year, in-service date, purchase cost, make, model, serial number, physical attributes (e.g. length, material, power rating), class, and parent asset.
- **AM Planning Data** is collected throughout the lifecycle of the assets and provides the base data for analysis of asset condition / maintenance, utilization / operations, and performance. Examples include updated demand / utilization / access restrictions data, updated condition data, updated criticality, risk and resilience data, physical works plans / achievements and related estimated / actual costs.
- **AM Analysis Data** is developed to report AM performance and make decisions to minimize impacts of failure to meet performance targets. For example to determine customer service performance, technical assets performance, and costs of asset ownership (lifecycle needs).

The quality of AM data can include its completeness and accuracy, and can be dictated by what it is based upon. The grades for evaluating data confidence are shown below.

Table 6-1 Data Confidence Grading

Grade	Quantity, Size, Install Year, Service Life	Condition	Replacement Value	Growth / Upgrade Needs Forecast	Renewal Needs Forecast
	% complete & accurate	Based upon	Based upon	Based upon	Based upon
Very High (VH)	90% to 100%	current industry standard condition assessment	current tender documents, quotes	historic budget actuals and current master plan forecast, with costs	current industry standard condition assessments & needs forecast, with costs
High (H)	80% to 90%	2+ year old industry standard condition assessment	2+ year old tender documents, quotes	historic budget actuals and 2+ year old master plan forecast, with costs	2+ year old industry standard condition assessments & needs forecast, with costs
Moderate (M)	70% to 80%	staff-reported condition	staff-reported costs	historic budget actuals and master plan forecast, with staff forecast costs	staff-reported condition assessment and needs forcast, with costs
Low (L)	50% to 70%	install date and useful life	inflated historical costs	population growth forecast	Needs forecast from install date & useful life
Very Low (VL)	0% to 50%	Unknown	Unknown	Unknown	Unknown

In compiling this AM Plan, a review of the asset registries is was performed. The review looked at the completeness and accuracy of the asset registries. The following table provides the assessment of the data used for meaningful asset management planning.

Table 6-2 AM Plan Data Confidence Grades

Asset Class	Asset Sub-Class	State of Infrastructure					Needs Forecast	
		Quantity & Size	Install Year	Service Life	Condition	Replacement Costs	Growth & Upgrade	Renewal
Airside	Aircraft Runways	VH	M	H	H	M	N/A	H
	Aircraft Taxiways, Apron	VH	M	H	H	M	N/A	H
	Airfield Lighting	H	H	H	M	M	N/A	M
Groundside	Roads	H	M	H	M	M	N/A	M
	Parking	H	M	H	M	M	N/A	M
	Facilities*	M	M	M	M	M	N/A	L
	Fuel Farm	H	H	H	M	M	N/A	M
Site Servicing	Stormwater Management	M	M	H	M	M	N/A	M
	Water	M	M	H	L	M	N/A	M
	Wastewater	M	M	H	L	M	N/A	M
	Wildlife Management	H	H	H	H	M	N/A	M
	Signage	H	M	H	L	H	N/A	M
	Electrical	M	M	H	L	M	N/A	M
	Fencing	M	M	H	L	M	N/A	M
Vehicles and Equipment	Vehicles	VH	H	H	H	H	N/A	H
	Equipment	VH	H	H	H	M	N/A	H
IT Equipment	Servers	VH	H	H	M	M	N/A	M
	Devices and Printers	VH	H	H	M	M	N/A	M
	Security Technology	VH	H	H	M	M	N/A	M
	Communication Equip	H	H	H	M	M	N/A	M

* Facility inventories were generally available only at the building level. Information on building systems and components would enable better needs forecasting.

6.2 Improvement Plan

The next steps resulting from this AM Plan to improve asset management practices are:

- Determine proposed levels of service for reporting in the Proposed LOS AM Plan required by O.Reg. 588/17 for approval by July 1, 2025.
- Complete the 2024 Airside Redevelopment Study and associated business case and determine Growth and Upgrade Needs Forecasts. This is an important step as it may influence the criticality of assets within the asset portfolio and the timing of renewal activities.
- Establish the future use and lifecycle activities for Hangar 11.

- Improve the asset State of Infrastructure database by conducting cyclical industry standard condition assessments, giving priority to high consequence of failure (CoF) assets. In particular, conduct condition assessments on the Terminal and Maintenance Garage. Develop inventories of building systems and components as part of the condition assessment.
- Improve the Renewal Needs Forecast in conjunction with the condition assessments.
- Establish a master asset inventory to support AM activities. Align the TCA register with AM asset register, or consolidate the two inventories. Establish processes to update the asset register(s) when assets are acquired, replaced or eliminated.
- Explore options for implementing technologies for work order management and asset investment planning. Consider the possibility of using applications in place at one of the three owner municipalities.

6.3 AM Plan Monitoring and Update

O.Reg. 588/17 requires that AM Plans be updated by July 1, 2025 to report proposed LOS for the subsequent 10 years, along with the cost of sustaining the proposed LOS. Thereafter, the O.Reg. requires that progress implementing the AM Plan be reported to municipal Councils annually by July 1. In addition, the O.Reg. requires AM Plans to be updated at least every 5 years.

Appendix C – Niagara Falls Convention Centre

FINAL

Building Condition Assessment and Reserve Fund Study

6815 Stanley Avenue,
Niagara Falls, ON

Prepared for:

The Niagara Falls Convention Centre

6815 Stanley Avenue
Niagara Falls, Ontario L2G 3Y9

Attention: John Randazzo

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1.0 INTRODUCTION

1.1 Terms of Reference

At the request of Niagara Falls Convention Centre (Client), Pinchin Ltd. (Pinchin) submitted a proposal for the preparation of a Building Condition Assessment (BCA) and Reserve Fund Study (RFS) of the property located at 6815 Stanley Avenue, Niagara Falls, Ontario (Site).

The Site is located on the west side of Stanley Avenue, approximately 250 meters (m) south of the intersection of Stanley Avenue and Dunn Street, in Niagara Falls, Ontario. The Site is developed with a two-storey convention centre building complete with a basement level beneath the footprint of the building (Site Building) which was originally constructed between 2010 and 2011, opening in April 2011 with a gross floor area of approximately 288,000 Square Feet (SF).

The following report summarizes the findings and recommendations of the BCA and RFS for Niagara Falls Convention Centre, and annual contributions for the 2023 fiscal year beginning September 15, 2023.

1.2 Scope of Work – BCA and RFS

The objectives of the BCA and RFS are as follows:

- To provide a physical analysis of the building's common elements by:
  - Compiling a component inventory of the corporation's common elements; and
  - Documenting and assessing the present condition of the building and its components, along with anticipated life expectancy and estimated replacement costs.
- To provide a financial analysis, including a description of the present status of the reserve fund and a recommended funding plan projected over a period of 15 years.
- The objective of a RFS is to determine whether the amount of money in the reserve fund and if the amount of contributions collected by the building management, are adequate to provide for the expected costs of major repairs and replacement of the common elements and assets of the building management.

The scope of work carried out by Pinchin is briefly summarized as follows:

1. Review the available construction, maintenance documents and architectural drawings provided by Niagara Falls Convention Centre to become familiar with the individual building systems and prepare an inventory of common elements, including a quantity take-off for each element.

2. Conduct a visual examination of the building's common element components in order to evaluate the present condition, and estimate the remaining life expectancy, of these components. The review of common elements is to involve (but not necessarily be limited to) a visual sampling from ground level.
3. Prepare estimates of current (i.e., year 2023) repair and/or replacement costs for each common element component, based on observations and experience.
4. Provide a copy of the report on the foregoing. The report is to include a list of Reserve Fund components, their estimated lifespans, estimated current repair/replacement costs, and a suggested cash flow chart indicating the annual contributions required and annual Reserve Fund balances over a fifteen-year period.

The BCA and RFS site visit will cover the following building elements where applicable:

- Building enclosure, including the roof (where safe access is provided by the Client representative), exterior walls, balconies, doors and windows;
- Building structure;
- Interior finishes;
- Exterior pavements, amenities and landscaping;
- Fire protection and fire safety systems;
- Common element mechanical and electrical systems;
- Site utilities where open to view, or information is provided;
- The elevator systems; and
- Security systems.

1.3 Building Complex Information

Pinchin understands that the Site Building consists of a two-storey convention centre building complete with a basement level beneath the footprint of the building which was originally constructed in between 2010 and 2011 opening in April 2011.

The substructure of Site Building is constructed with a cast-in-place concrete slab and cast-in-place concrete foundation walls (i.e., basement level). The superstructure of the Site Building is comprised of a combination of steel frame support structure (i.e., columns, beams and Open Web Steel Joists (OWSJs)) and a reinforced cast-in-place concrete support structure (i.e., columns) supporting the second floor cast-in-place concrete floor slabs and steel roof decking.

The building is clad with a combination of brick veneer masonry, prefinished metal wall panels, windows, doors, flashings and sealants. The roof consists of a multi-level Thermoplastic Olefin (TPO) membrane system. Drainage for the roof areas is provided by internal roof drains and surface deflection, as well as scupper drains.

The building possesses a single-level basement beneath the footprint of the building. Access to the building is gained via a private roadway from Stanley Avenue on the east perimeter of the Site and a private roadway from Dunn Street on the northwest portion of the Site.

The Site features include on-grade asphalt parking lot areas and drive lanes, concrete curbs, cast-in-place concrete sidewalks and soft landscaping.

Based on our visual assessment, the Site Building appears to have been constructed in general accordance with standard building practices in place at the time of construction.

The assessment did not reveal any visual evidence of major structural failures, soil erosion or differential settlement.

1.4 General Information

Items that are not included in the BCA and RFS have been assumed to be part of the operating (repair and maintenance) budget or assumed to last the lifetime of the Site Building.

2.0 RESERVE FUND STUDY – GENERAL

2.1 Introduction

The following sections briefly describe Pinchin's approach to evaluating the major common elements examined with respect to their normal life expectancy, assessing the remaining life expectancy (that accounts for the present age and/or condition of the element), and estimating the current (i.e., year 2023), anticipated repair and/or replacement costs. Pinchin's evaluation of these factors is summarized in Table 1 at the end of Section 4.0 of this report. This table should be reviewed in conjunction with the following sections.

2.2 Remaining Life

The normal life expectancy of any one component has been determined on the basis of site visits, past experience with buildings, construction of a similar nature, and documented resources from industry or manufactures. For the purposes of this study, the present age of all original elements has been twelve (12) years as the complex began occupancy in April 2011. Pinchin has estimated the remaining life expectancy for the common elements as observed during our review of the building.

Pinchin's judgment of normal and remaining life expectancy assumes that a reasonable amount of timely and proper maintenance is provided during the life span of the components. It should be noted that the life expectancy depends on the use and maintenance of the building components. It is important that the Site Building be inspected regularly to determine whether all components are performing as anticipated and to take appropriate corrective measures in the event that they are not. It is possible that components may be replaced before the end of their useful life to serve needs other than maintaining their functionality. Such conditions (i.e., building improvements) are not taken into account in this study. Pinchin has assumed that guidelines for maintenance, along with manufacturer's maintenance requirement are followed.

Under normal circumstances, "Remaining Life" is the arithmetical difference between "Normal Life" and "Present Age". However, in some instances, due to either advanced deterioration or superior performance and durability, the "Remaining Life" of an element may be modified to account for its present condition.

The assessments made herein are based upon visual examination only. No form of testing has been conducted. Accordingly, the projections are subjective in nature and represent only Pinchin's professional opinion.

For some elements, concrete foundation walls as an example, the normal life expectancy equals or exceeds the design life of the buildings. In these instances, Pinchin recommends that an allowance for partial repair of the total element be allowed for on a regular basis.

No allowance has been made for costs associated with disruption of use of facility, costs due to non-availability of a current system or material (obsolescence), or costs related to changes in legislation (i.e., safety code changes, disposal costs, etc.).

3.0 BUILDING CONDITION REVIEW

Pinchin conducted an on-Site review of the Site Building components to identify deficiencies or outstanding variances from normal performance. Pinchin's review was carried out from grade level and roof level for the exterior of the Site Building, as well as interior areas of the Site Building. The following sections summarize the Site review.

3.1 Thermoplastic Polyolefin Membrane Roof

The roof area of Site Building consists of a multi-level Thermoplastic Olefin (TPO) membrane roof system atop steel roof decking. The main roof system is located atop the second level of the Site Building and consists of a "near-flat" roof system. The upper roof system is located on the central portion of the Site Building and serves the exhibition halls and consists of a sloped roof system.

The lower roof system is located on the west portion of the Site Building and serves the ground level shipping/receiving areas. In addition, the main roof has four sloped skylights along the north portion.

According to the provided details and drawings, the building roof assembly consists of a combination of mechanically attached and fully-adhered TPO membrane roof systems. The roof assemblies consist of TPO membrane, vapour retarder, insulation, metal roof edging and copings, flashings, cover boards, roof pavers and structural steel decks. It should be noted that precast concrete paver walkways were observed atop the main roof area.

In addition to the roof drains, penetrations through the roof systems consist of plumbing and exhaust vents, roof anchors, roof drains, pitch pockets serving conduits, and HVAC curbs.

Based on discussions with the Site Representative, on-going leaks have been reported since the construction of the Site Building which are reportedly repaired on an as-needed basis. Areas of wrinkling in the TPO membrane, previous patches/repairs, water ponding, debris accumulation and moss growth were noted at various locations. Regular cleaning of roof drains is recommended to be completed as part of building regular maintenance to maintain the integrity of the roof and to ensure that its Expected Useful Life (EUL) is achieved or surpassed.

It has been Pinchin's experience that the EUL of a TPO membrane roof system typically ranges between 17 and 20 years, depending on the quality of the materials used, the quality of workmanship during installation and the level to which the roof system has been maintained. Based on age, allowances for the future phased replacements have been included in the Reserve Fund Table.

Partial view of the main roof system.

Partial view of the upper roof system.

Partial view of the lower roof system.

General view of a typical sloped skylight on the roof.

Typical view of a roof drain.

View of wrinkling and water ponding on the TPO membrane.

View of wrinkling in the TPO membrane.

View of previous repairs/patches on the TPO membrane.

View of water ponding atop the roof system.

View of the organic debris accumulation atop the roof system.

3.2 Roof System – Skylights

Four sloped skylights were noted atop the north portion of the main roof system. The skylights are original to the construction of Site Building in 2010/2011 (i.e., ~ 12 years old). The skylights were in satisfactory condition with no issues reported at the time of the Site review.

The EUL of a skylight is typically in range of 35 to 40 years, depending on the quality of installation work and considering required maintenance has been completed. An allowance for future repair/replacement of the skylights located atop of the main roof level has been included in the Reserve Fund Table.

View of a typical skylight noted atop the north portion of the main roof system.

View of a typical skylight noted atop the north portion of the main roof system.

3.3 Roof System – Metal Flashing

Prefinished metal cap flashings were noted at the roof parapets of Site Building. The metal flashings are original to the construction of Site Building in 2010/2011 (i.e., ~ 12 years old) and appear to be in satisfactory condition.

The EUL of metal flashings is typically in the range of 35 to 40 years, depending on the quality of installation work and considering required maintenance has been completed. An allowance for the replacement of the metal flashings at the time of first roof replacement has been included in the Reserve Fund Table. It is recommended to replace the metal cap flashing at the time of the main roof replacement.

View of metal cap flashings at the roof parapet of the Site Building.

3.4 Entryway Canopies

Six canopies consisting of TPO membrane roof systems are located atop the entrance and exit doors of the Site Building on the north, east and south elevations of the Site Building. The canopies are original to the construction of Site Building in 2010/2011 (i.e., ~ 12 years old) and appear to be in satisfactory condition.

Allowances for future rehabilitation/repainting of the soffits have been included as indicated in the Reserve Fund Table.

General view of the canopy located on the south elevation of the Site Building.

General view of the canopy located on the north elevation of the Site Building.

General view of the canopy located on the north elevation of the Site Building.

General view of the canopy located on the north elevation of the Site Building.

General view of the canopy located on the west elevation of the Site Building.

3.5 Brick Veneer Masonry

The exterior walls of Site Building are partially clad with brick veneer masonry on the south and west elevations. The brick units are original to the construction of Site Building in 2010/2011 (i.e., ~ 12 years old) and appear to be in satisfactory condition.

Brick veneer masonry is assumed to last the life of a building. However, localized repairs such as re-pointing of mortar joints and rehabilitation of deteriorated units will be required over time.

Consequently, Pinchin has provided allowances for as-required localized repairs and re-pointing of deteriorated masonry as indicated in the Reserve Fund Table.

View of the brick veneer masonry on the south elevation of Site Building.

View of the brick veneer masonry on the west elevation of Site Building.

Close-up view of the brick veneer masonry on the south elevation of Site Building.

3.6 Metal Wall Panels

The exterior walls of Site Building are partially clad with metal wall panels on all elevations. The panels appeared to be generally in good condition, with no major signs of damage or deterioration.

The EUL of metal wall panels is in the order of 45 to 50 years, as long as regular maintenance is carried out and recoating of the panels is completed. An allowance for periodic recoating of metal wall panels has been included in the Reserve Fund Table.

View of the metal wall panels noted on the west elevation of Site Building.

View of the metal wall panels noted on the east elevation of Site Building.

View of the metal wall panels noted on the north elevation of Site Building.

3.7 to 3.8 Windows

The windows of the Site Building consist of aluminum framed windows with fixed and operable (i.e., horizontally-sliding) Insulated Glass (IG) units set into punched openings on the south and west elevations and strip configurations on the north elevation atop the main roof system. Glass and aluminum curtain wall systems were noted on all elevations. The majority of the window systems are original to the construction of the Site Building. The windows appeared to be generally in good condition.

Curtain walls and windows of this type will typically have a service life in the order of 35 years or more, provided that regular as-required maintenance such as ensuring the mechanisms and weatherstripping is maintained. Based on this, Pinchin has included allowances for the maintenance and localized replacement of the window and curtain wall systems as indicated in the Reserve Fund Table.

View of a typical punched window noted on the west elevation of Site Building.

View of a typical punched window noted on the south elevation of Site Building.

View of the strip window configuration noted on the north elevation of Site Building atop the main roof system.

Typical view of the curtain wall systems noted on the north elevation of Site Building.

Typical view of the curtain wall systems noted on the east elevation of Site Building.

Typical view of the curtain wall systems noted on the east elevation of Site Building.

3.9 to 3.11 Exterior Doors

The main entrance and exit doors of the Site Building consists of IG double swing doors complete with IG sidelites and transoms, within prefinished aluminum frames on all elevations. Hollow core metal entrance doors within metal frames were noted on the west elevation of Site Building. Eight overhead metal roll-up doors serve the shipping and receiving area on the west elevation of Site Building.

Doors of these types typically have a life expectancy in the order of 30 to 35 years, provided that regular maintenance is conducted, such as ensuring that the weatherstripping is intact and the door hardware is functioning as intended. Based on this, Pinchin has included allowances for the maintenance and localized replacement of the exterior door systems as indicated in the Reserve Fund Table.

General view of the main entrance doors on the south elevation of the Site Building.

General view of the main entrance doors on the north elevation of the Site Building.

General view of the metal entrance doors on the west elevation of the Site Building.

General view of the metal overhead rollup doors noted on the west elevation of Site Building.

3.12 Exterior Sealants

The exterior perimeters of the doors, windows and service penetrations, as well as exterior wall cladding interfaces, have been sealed with an exterior grade sealant. The exterior sealants at the perimeters of windows, doors and interfaces of cladding materials appeared to be generally in satisfactory condition.

The normal life expectancy of exterior sealants of this type is typically in the order of 10 to 15 years provided that proper material selection and application techniques are carried out. Based on this, Pinchin has included an allowance for the replacement of the sealants as indicated in the Reserve Fund Table.

Typical view of exterior sealant at the brick veneer masonry joint.

View of window glazing seals.

3.13 Structural Elements

A visual assessment of the condition of the structural elements was carried out on the components that were visible at the time of the review.

The substructure of Site Building is constructed with a cast-in-place concrete slab and cast-in-place concrete foundation walls (i.e., basement level). The superstructure of the Site Building is comprised of a combination of steel frame support structure (i.e., columns, beams and Open Web Steel Joists (OWSJs)) and a reinforced cast-in-place concrete support structure (i.e., columns) supporting the second floor cast-in-place concrete floor slabs and steel roof decking.

No structural issues were observed or reported by the Site Representative in relation to the superstructure of the building.

Assessment of the original or existing building design, compliance with prior or current Building Code, or detection or comment upon concealed structural deficiencies, are outside the scope of work. Similarly, the identification and assessment of any Post-Tension reinforcing is not included in the scope of work (should Post-Tension reinforcing exist at the Site Building).

Accordingly, the findings are limited to the extent that the assessment has been made based on a walkthrough visual review of accessible areas of the structures.

The building structure is assumed to last the life of a building.

Allowances for periodic repairs of the concrete foundation walls, including concrete patching, crack sealing, and re-parging at regular intervals, have been included in the Reserve Fund Table.

3.14 Interior Doors

Interior doors consist of a combination of hollow metal doors within hollow metal frames, some of which possess glazing inserts, solid wood doors within painted hollow metal frames, frameless SG swing doors, and melamine veneer finished doors within metal frames.

The interior doors are original to the construction of the Site Building and appeared to be generally in good condition at the time of the Site review. Allowances for maintenance of the interior doors, as needed, have been included in the Reserve Fund Table.

View of typical interior frameless doors within the Site Building.

View of typical interior metal doors within the Site Building.

View of typical melamine veneer finished doors within the Site Building.

View of typical interior doors within the building.

3.15 to 3.19 Flooring Finishes

The flooring finishes within the offices, corridors and meeting rooms consist primarily of carpet while vinyl sheet flooring was noted within the within kitchen areas. Ceramic tiles were noted in the common areas, including lobbies, hallways, kitchens/lunchrooms and washrooms. Epoxy coated concrete was noted within mechanical rooms. The flooring finishes within the storage areas and service rooms consist with exposed and finished concrete slabs within the basement and exhibition halls. The flooring finishes appeared to be generally in satisfactory condition.

Pinchin recommends that flooring finishes continue to be replaced/refinished as needed throughout the term of the analysis. Allowances for the replacement/refinishing of flooring have been included in the Reserve Fund Table.

View of typical carpet within a corridor.

View of typical vinyl flooring within the kitchen area.

View of typical ceramic tile flooring in the washrooms.

View of typical epoxy coated concrete noted within a mechanical room.

View of exposed concrete flooring noted within an exhibition hall.

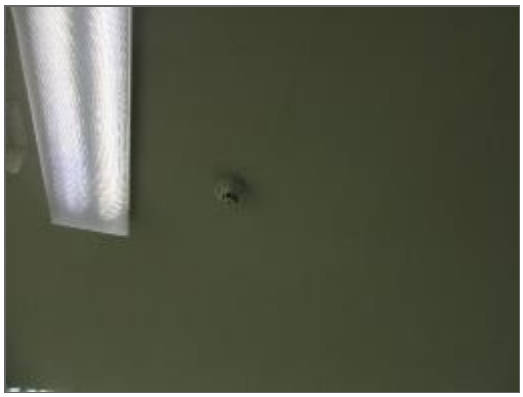
3.20 to 3.21 Ceiling Finishes

The ceiling finishes throughout the common areas and offices of the Site Building consist of suspended acoustic ceiling tiles, and exposed concrete within the service rooms within the basement of the Site Building. Painted gypsum board ceilings were noted within various hallways and washrooms. The ceiling finishes appeared to be generally in good condition. Localized areas of moisture staining, reportedly from previous leaks, were noted at some of the ceiling tiles within the Site Building.

Replacement of damaged and stained ceiling tiles is recommended to be carried out on an as-required basis and as part of building maintenance. Allowances for repainting of ceiling finishes in the common areas, and replacement of the suspended ceiling tiles in the office areas as required, have been included in the Reserve Fund Table.

View of exposed concrete within service rooms.

View of ceiling finishes in the corridors.



View of ceiling finishes in the corridors.

View of moisture-stained ceiling tiles in the office area of the Site Building.

3.22 Wall Finishes

The wall finishes within the offices and common areas of the building consist of painted gypsum board with areas of melamine veneer and consist of ceramic tiles within the washrooms and kitchen area. The walls within the service rooms consist of painted concrete block and unfinished cast-in-place concrete.

The wall finishes within the offices and common areas of the building appeared to be generally in good condition.

Allowances for periodic repainting of interior wall finishes in the common areas and within the offices, and as required have been included in the Reserve Fund Table.

View of the typical wall finishes within the corridors of the Site Building.

View of the typical wall finishes within the corridors of the Site Building.

General view of the ceramic tile wall finishes within the kitchen.

View of the typical painted concrete block within a service area.

View of typical wall finishes within the basement of the building.

3.23 to 3.24 Interior Stairwells and Handrails; Interior Stairwell Finishes

The Site Building is equipped with total of nine (9) interior concrete stairwells finished with gypsum wall board. All stairs are equipped with painted metal handrails. The treads of the stairwells consist of unfinished concrete and ceramic tile. In general, the finishes on the stair treads and handrails were observed to be in good condition. An allowance has been provided in the Reserve Fund Table to refinish the stairwells as required, including repainting stairs and handrails, and isolated replacement of rubber treads.

General view of interior stairwell and handrails of Site Building.

General view of interior stairwell and handrails of Site Building.

3.25 Millwork

Cabinets are present within the washrooms and café areas of the Site Building. The millwork appeared to be generally in satisfactory condition.

It is recommended to conduct minor repairs as required as part of regular maintenance. Allowances for re-facing of millwork in the washrooms and café areas as required, have been included in the Reserve Fund Table.

View of millwork within a washroom.

Typical view of millwork within a café.

3.26 to 3.27 Site Concrete Elements; Concrete Curbs and Walkways

Concrete curbs are present at the surfaced parking and driveway areas on the north, west and southwest portions of the Site. The concrete curbs appeared to be generally in satisfactory condition.

Cast-in-place concrete walkways are present at the north, west and southwest portions of the Site. Concrete paver walkways are present adjacent to the north elevation of the Site Building. A concrete pad is provided for the garbage storage adjacent to the west elevation of the Site Building. Concrete stairs are provided for the secondary access door on the west elevation of the Site Building. Concrete retaining walls and a concrete ramp are located adjacent to the west elevation of the Site Building. The concrete walkways, stairs, ramp, retaining walls and pad appeared to be in satisfactory condition.

Localized areas of cracking and deterioration in the concrete curbs and walkways were noted at various locations of the Site.

Concrete elements such as these typically have a life expectancy in the order of 40 years or more, provided that regular maintenance, such as repairing spalled and cracked sections, is carried out. Concrete elements are generally replaced/rehabilitated as required or during the cycle of asphalt repaving. Pinchin has included an allowance for the repairs and select replacement of the Site concrete elements. In addition, Pinchin has included an allowance for future localized repairs/replacements to the concrete walkways as indicated in the Reserve Fund Table.

View of the concrete pad at the garbage area adjacent to the west elevation of the building.

View of the concrete ramp and retaining walls adjacent to the west elevation of the building.

View of the concrete walkway adjacent to the south elevation of the Site Building.

View of the concrete walkway adjacent to the west elevation of the Site Building.

View of the concrete paver walkway adjacent to the north elevation of the Site Building.

View of typical minor cracking noted in the concrete walkways.

View of typical minor cracking noted in the concrete walkways.

Typical view of concrete curbs within the Site.

View of typical deterioration noted in the concrete curbs.

View of the concrete stairs adjacent to the west elevation of the Site Building.

3.28 Asphalt Roadways and Parking Areas

The asphalt-paved surfaced parking area, with provisions for 834 parking spots, is located at the north and west portions of the Site. The asphalt paving appeared to be generally in fair condition, with areas of cracking and potholes observed. Localized areas of patching and repairs were reported; however, no major asphalt resurfacing or repairs have been reported by the Site Representative.

The normal life expectancy of asphalt pavements of this type is in the order of 17 to 20 years, depending on the quality of pavement and installation procedures.

As well, regular maintenance repairs, such as routing and sealing of cracks with pothole patching, should be conducted when required. Based on the condition of the asphalt pavements, Pinchin has included allowances for future phased localized repairs of the asphalt pavements as indicated in the Reserve Fund Table.

General view of asphalt-paved parking area at the southwest portion of the Site.

General view of asphalt-paved parking area at the west portion of the Site.

General view of asphalt-paved parking area at the north portion of the Site.

Typical view of alligator cracking at the north asphalt-paved parking area.

Typical view of deterioration and a pothole at the west asphalt-paved parking area.

Typical view of alligator cracking at the west asphalt-paved parking area.

Typical view of alligator cracking at the west asphalt-paved parking area.

3.29 Landscaping

The Site soft landscaping consists of sodded areas, trees, shrubs and flower beds, present on all elevations of the Site Building. At the time of review, the landscaping was appeared to be generally in good condition.

The upgrading/rehabilitation of landscaping is typically driven by Niagara Falls Convention Centre to enhance curb appeal of the complex. Based on discussions with the Site Representative, landscaping is included as part of the maintenance expenses and as such, no costs have been carried in the Reserve Fund Table.

Typical view of landscaping adjacent to the north elevation.

3.30 Metal Guardrails and Fencing

Metal guardrails are provided for the retaining walls and stairs adjacent to the west elevation of the Site Building and the walkway adjacent to the south elevation of the Site Building. Chain-link and wood fencing was noted adjacent to the west elevation of Site Building and along the west border of the parking areas. The ages of the fence and metal guardrails are unoriginal to the building construction. The metal guardrails and fence appeared to be generally in satisfactory condition, with localized areas of corrosion at base of the posts of guardrail at patio area.

Metal guardrails and fencing typically have a service life in the 30 to 40 year range, provided that regular cleaning, painting and as-required repairs are carried out. Based on discussions with the Site Representative, the metal guardrails and fencing are included as part of the maintenance expenses and as such, no costs have been carried in the Reserve Fund Table.

View of typical metal guardrails noted adjacent to the west elevation of the Site Building.

View of typical wood fencing noted adjacent to the west elevation of the Site Building.

View of typical metal guardrails noted adjacent to the south elevation of the Site Building.

3.31 Site Services

No problems were reported by the Site Representative and the Site underground services were thus assumed to be generally in good condition at the time of the review.

The replacement of these services is generally carried out in conjunction with major site rehabilitation, such as asphalt roadway replacement or landscaping rehabilitation. No major expenditures are anticipated during the term of analysis.

3.32 to 3.33 Elevator and Escalator Systems

There are five (5) elevators and two (2) escalators serving the Site Building. The following is a brief description of the elevator and escalator systems present at the Site Building:

	Elevators #1, 2 & 5	Elevators #3 & 4
Manufacturer:	Schindler	Schindler
Drive System:	Hydraulic	Hydraulic
Floors Served	B – 2	B – 2
Date Installed:	~ 2010/2011	~ 2010/2011
Capacity:	1,591 kg or 21 persons	2,273 kg or 31 persons
Function:	Passenger	Passenger
Alarm:	Yes	Yes
Emergency Stop:	No	No
Emergency Phone:	Yes	Yes
Emergency Power:	Yes	Yes

Escalator Systems:

Quantity:	2 Escalators
Location:	Main lobby
Manufacturer:	Schindler
Drive System:	Traction
Floors Served	G – 2
Date installed:	~ 2010/2011
Capacity:	9,000 persons per hour
Function:	Passenger
Alarm:	No
Emergency Stop:	Yes
Emergency Phone:	No
Emergency Power:	No

The elevator and escalator systems are covered under the terms of a full maintenance contract with “TK Elevator”.

The typical elevator “full maintenance” contract covers the replacement of major components in addition to the labour and materials necessary for ongoing repairs, adjustments and preventive maintenance work. Entrances and cab finishes are normally excluded. As long as “full maintenance” contract is purchased, the only additional costs to the Owner, during the first 15 to 25 years of use, should be for malicious damage and repairs to the elevator cabs and entrances. It is assumed that repairs required due to “Acts of God” (i.e., flood, fires, etc.) are covered by insurance.

Over time elevators will require modernization as certain elevator components may be unavailable due to obsolescence. Additionally, as newer equipment designs become more predominant, the parts and service personnel capable of performing necessary adjustments will become increasingly difficult to find. Thus, in order to remain competitive and ensure reliable elevator service over the long term, Pinchin recommends a detailed review/survey of the elevator and escalator systems be completed within the latter portion of the term of analysis by a qualified elevator and escalator consultant to determine and better understand the condition of the elevator and escalator systems and identify/confirm the need, cost and timing for modernization/upgrading of the elevator and escalator systems. The hydraulic elevators in this building have motor and pump systems with logic that controls the valve. Parts for the pumps and motors are still available from the manufacturer or after-market, while some parts for the valves and controls are obsolete.

As the elevators were installed in 2010/2011, an allowance for a detailed review/survey of the elevator and escalator systems has been included in the Reserve Fund Table, within the latter portion of the term of the analysis.

General view of a typical elevator cab.

View of a typical elevator control panel.

View of a typical hydraulic reservoir serving the elevators.

View of the escalators.

3.34 to 3.37 Mechanical - Heating, Ventilation and Air Conditioning (HVAC)

Heating, ventilation and cooling within the Site Building are provided by HVAC equipment described as follows:

- 25 natural gas-fired heating and electrically-powered cooling rooftop packaged HVAC units serve the Site Building. Based on review of data plates, the details of the rooftop HVAC units are summarized in the following table:

Manufacturer	Manufacture Date	Heating Capacity in British Thermal Units per Hour (BTUH)	Cooling Capacity (nominal tons)
Carrier	2010 (~ 13 years old)	Unknown*	25
Carrier	2010 (~ 13 years old)	Unknown*	25
Carrier	2010 (~ 13 years old)	Unknown*	25
Trane	2010 (~ 13 years old)	Unknown*	120
Trane	2010 (~ 13 years old)	Unknown*	120
Trane	2010 (~ 13 years old)	Unknown*	120
Trane	2009 (~ 14 years old)	Unknown*	30
Trane	2009 (~ 14 years old)	Unknown*	60
Trane	2010 (~ 13 years old)	Unknown*	40
Trane	2010 (~ 13 years old)	Unknown*	90
Trane	2010 (~ 13 years old)	Unknown*	40
Trane	2009 (~ 14 years old)	Unknown*	30
Trane	2009 (~ 14 years old)	Unknown*	30
Trane	2010 (~ 13 years old)	Unknown*	50
Trane	2010 (~ 13 years old)	Unknown*	50
Trane	2010 (~ 13 years old)	Unknown*	40
Trane	2010 (~ 13 years old)	150,000	12.5
Trane	2010 (~ 13 years old)	200,000	Unknown*
Trane	2010 (~ 13 years old)	200,000	Unknown*
Trane	2010 (~ 13 years old)	250,000	12.5
Trane	2010 (~ 13 years old)	250,000	12.5
Trane	2010 (~ 13 years old)	350,000	15
Trane	2010 (~ 13 years old)	350,000	17.5
Trane	2010 (~ 13 years old)	350,000	15
Trane	2017 (~ 6 years old)	600,000	35

***Illegible data plate**

- Additional heating within the Site Building is provided by a hydronic closed circuit heating loop complete generated by a central boiler plant. The central boiler plant consists of two natural gas-fired hydronic heating boilers located in the basement mechanical room. Based on review of the manufacturer's data plates, each hydronic heating boiler possesses a maximum input heating capacity of 1,442,000 BTUH and were manufactured by “De Dietrich” 2010 (i.e., approximately 13 years old).

The boiler plant supplies hot water to Variable Air Volume (VAV) boxes complete with heating coils are located throughout the Site Building. Hot water supplied by the boilers is circulated throughout the Site Building by two boiler circulation pumps rated at 61.5 US Gallons Per Minute (USGPM) and 0.5 Horsepower (Hp) each and two heating water supply pumps rated at 82.5 USGPM and 5.0 Hp each;

- A steam humidification boiler is located in the second floor mechanical room. Based on discussions with the Site Representative, the steam humidification boiler is no longer used as it is not required for the building operation;
- Six natural gas-fired suspended unit heaters serve the shipping and receiving area of the Site Building. Based on the mechanical drawings, the suspended unit heaters possess a maximum input heating capacity of 300,000 BTUH, each. The suspended unit heaters are reportedly original to the construction of the Site Building in 2010/2011 (i.e., ~ 12 years old);
- 31 air cooled split condensing units serve various service rooms (i.e., elevator machine, electrical, communications, etc.). Based on the mechanical drawings, the air cooled split condensing units possess cooling capacities ranging between 0 and 250.5 MBH; and
- Supplementary heating within the Site Building is provided by hydronic wall and ceiling-mounted forced-air heaters.

Exhaust within the Site Building is provided by rooftop-mounted centrifugal fans and inline cabinet fans. The fans were observed to be in satisfactory condition with no reported problems. It is expected that exhaust fans can be maintained or replaced on an as-required basis under the building operating budget.

It has been Pinchin's experience that the EUL of heating boilers, suspended unit heaters and circulation pumps typically ranges from 25 to 30 years, the EUL of HVAC units typically ranges from 20 to 25 years while the EUL of split condensing units typically ranges from 15 to 20 years, depending on the quality of the unit and the level to which the unit has been maintained.

Galvanized ductwork and prefinished grilles and dampers are used throughout Site Building. Exterior ductwork for HVAC units at roof level is insulated with fiberglass insulation. Allowances for maintenance and cleaning of the ductwork are included in the Reserve Fund Table.

Based on the age and observed conditions, allowances for overhauling/replacement of the mechanical units are included in the Reserve Fund Table. Based on discussions with the Client, it was determined that a full replacement of the rooftop packaged HVAC units was not feasible during the term of analysis and therefore allowances have been carried for overhauling of the rooftop packaged HVAC units in order to extend the EUL, with full replacement anticipated after the term of analysis.

In accordance with the proposed scope of work, no physical or destructive testing, or design calculations, were conducted on any of the major components of the building. Similarly, the review of the interior of rooftop units, pressure vessels, equipment, ductwork or associated mechanical components was not included in the scope of work.

Accordingly, the findings are limited to the extent that the assessment was made visually from the exterior of the systems.

View of the heating boilers serving the Site Building.

General view the circulation pumps serving the Site Building.

View of a typical rooftop HVAC unit serving the Site Building.

View of a typical suspended unit heater serving the Site Building.

View of a typical air-cooled split condensing unit serving the Site Building.

3.37 to 3.38 Domestic Hot Water (DHW)

Domestic Hot Water (DHW) within the building is provided by seven natural gas-fired self-contained DHW heaters located in the second floor and basement mechanical rooms. Based on a review of the data plates, the DHW heaters were manufactured by “Rheem” in 2008, 2009 and 2016 (i.e., approximately 7, 14 and 15 years old) and possesses maximum input heating capacities ranging between 130,000 199,000 BUTH and storage capacities of 303 or 451 Litres (L) each. The DHW heaters are complete with three storage tanks with capacities of 119 or 200 gallons each.

It has been Pinchin’s experience that the EUL of a storage tank typically ranges from 20 to 25 years, while the EUL of a DHW heater typically ranges from 15 to 20 years depending on the quality of the unit and the level to which the units have been maintained. Based on discussions with the Site Representative, three of the DHW heaters have been scheduled to be replaced in December 2023.

Based on the age, allowances for the replacement of the older storage tanks and the remaining four DHW heaters are included in the Reserve Fund Table.

View of a typical DHW heater.

View of a typical DHW storage tank.

View of typical DHW heaters

3.39 Plumbing

Drainage and circulation piping within the building consists of a combination of PVC, cast iron and copper where open to view. Due to the concealed nature of the plumbing systems, the condition of the risers could not be verified. The visible sections of piping appeared to be generally in good condition. The plumbing system was in satisfactory condition at the time of our site review with no issues reported.

The main water line for Site Building is located in the fire sprinkler room within the basement level of the Site Building. A 6" backflow preventer manufactured by "Watts" was noted to be installed on the main water line and was noted to possess an up-to-date annual inspection tag (i.e., January 2023 by "Sure-Fix Service Group Inc.")

Pinchin has included a contingency allowance for plumbing repairs throughout the term of analysis, as indicated in the Reserve Fund Table.

View of the main water line within the fire sprinkler room of the Site Building.

View of the backflow prevention device installed onto the main water line.

3.40 Storm and Sanitary Waste Removal System

The sanitary waste removal system consists of sanitary pipes from the Site Building to the main line and to the municipal system. No issues were reported regarding the sanitary system at the time of our Site visit.

Drainage of the Site pavements is provided by on-Site catch basins which reportedly drain the water to a sand-oil water interceptor. Since the inspection was limited to visible areas no examination of the catch basins was performed and no review of the initial compliance with code was performed. The inspection of underground or concealed components is outside the scope of work. Based on discussions with the Site Representative, no known problems or concerns with the drainage systems/catch basins and their ability to drain the Site were reported to Pinchin at the time of the Site visit.

Regular maintenance and inspection of the system is recommended to increase its life expectancy. Allowances for periodic flush and CCTV scope of storm and sanitary mains have been included in the Reserve Fund Table. Any as-required repairs of the storm and sanitary waste removal system are not determinable at this time until such time as the CCTV flush and scope has been completed and the findings have been reviewed.

3.41 Sump Pumps

Site Building is equipped with one (1) sanitary sump pump located within the basement level of the building.

The age of the sump pump could not be confirmed at the time of the Site visit but can be estimated as building original construction date in 2010/2011. Allowances for as-required replacement of the sump pump has been included in the Reserve Fund Table.

General view of the sump pump within the basement level of Site Building.

3.42 to 3.43 Electrical Systems

The electrical power for the Site is supplied from two concrete pad-mounted transformers located within the basement transformer vault. The main electrical disconnect switch and electrical panels are in the electrical room located within the basement level of Site Building. The main electrical service for the Site consists of a main switchgear unit rated at 4,000 Ampere, 347/600 Volt, 3 Phase, and 4 Wire service. The main switchgear unit and circuit breaker panels are original to the building construction and installed in 2010/2011. Allowances for circuit breakers maintenance/replacement are included in the Reserve Fund Table.

It is noted that various electrical panels and secondary switches and step-down transformers are located throughout the building located at the service rooms in basement and electrical closets on each floor.

View of the concrete pad-mounted transformers serving the Site Building.

View of the main electrical switchgear unit serving the Site Building.

3.44 Exterior Lighting

Exterior lighting at the Site Building is provided by wall mounted and steel pole lamp light fixtures. The ages of the exterior light fixtures were original the building construction in 2010/2011. Exterior lighting of these types will typically have a service life of 20 to 25 years.

Based on discussions with the Site Representative, the exterior lighting was upgraded in 2018. Based on discussions with the Site Representative, the exterior lighting is included as part of the maintenance expenses and as such, no costs have been carried in the Reserve Fund Table.

Typical view of exterior lighting at the Site Building.

Typical view of exterior lighting at the Site.

3.45 Interior Lighting

The common area interior lighting is provided by a combination of ceiling-mounted troffer type fluorescent lights, recessed pot lights and suspended pendent fixtures. As reported by the Site Representative, the majority of the lighting within the Site Building has been upgraded to LED.

Interior lighting of this type will typically have a service life of 20 to 25 years. Based on discussions with the Site Representative, the interior lighting is included as part of the maintenance expenses and as such, no costs have been carried in the Reserve Fund Table.

View of typical interior light fixtures within the building.

Typical view of interior light fixtures within the corridor of the building.

View of lighting within an exhibition hall of the building.

3.46 to 3.48 Emergency Electrical Power

Emergency power within Site Building is provided by a natural gas-fired emergency generator located atop the main roof system of the Site Building. No data plate was available for Pinchin's review. The generator was manufactured by "Paramount Power Systems". Based on information provided by the Site Representative, the generator is original to the construction of the Site Building in 2010/2011. Repairs and maintenance of the generator can be completed as part of operations and maintenance. The emergency generator reportedly provides power to the air conditioning in limited areas, life safety equipment, freezers, coolers and two elevators. Illuminated exit signs and emergency lighting are provided by ceiling and wall-mounted battery-powered units and emergency floodlights which were noted at various locations within the vicinity of the exits of the Site Building. In addition, select emergency light fixtures provide emergency lighting which is reportedly powered by the emergency generator.

View of emergency generator of the Site Building.

3.49 UPS System

The Site Building is equipped with an Uninterruptible Power Supply (UPS) system. Based on discussions with the Site Representative, the batteries of the UPS system have been replaced; however, the UPS system is not working and is not currently used. As reported by the Site Representative, replacement of the UPS system is anticipated in 2037.

An allowance for any as-required repairs/replacements of the UPS system has been included in the Reserve Fund Table.

View of UPS system of the Site Building.

3.50 Fire Protection System

Fire protection within the building is provided by a wet fire sprinkler system. A dry fire sprinkler system serves the shipping, receiving and IT areas. The main fire sprinkler shut-off valves and risers are located within the basement level fire sprinkler room. The fire sprinkler system was noted to possess up-to-date annual inspection tags (i.e., March 2023 by “Niagara Regional Fire Protection”). The fire department connections serving the sprinkler system are located on the north elevation of Site Building.

Fire extinguishers were observed in the corridors of each floor, common spaces, and within the mechanical rooms of the facility. Inspection and servicing of the fire extinguishers and suppression systems are reportedly performed by “Niagara Fire Alarms”, an independent contractor, and were last inspected in August 2023. The fire extinguishers appeared to be charged to sufficient levels.

There are various commercial cooking equipment “wet” chemical fire suppression systems located within the kitchen areas of the Site Building. The fire suppression systems for the commercial cooking equipment are activated manually by pull stations and automatically by fusible links and appear to possess up-to-date inspection tags. The inspection gauges on the examined commercial cooking equipment fire suppression systems were noted to be charged to sufficient levels.

An allowance for any as-required repairs/replacements of the fire extinguishers, has been included in the Reserve Fund Table.

View of the fire sprinkler risers and shut off valves serving the Site Building.

View of a typical fire extinguisher.

3.51 Fire Alarm and Life Safety

The fire alarm system serving the Site Building consists of a multi-zone system complete with an “EST 3” fire alarm control panel. Additionally, an annunciator panel was noted adjacent to the main entrance vestibule on the ground floor of Site Building.

The fire alarm main control panel is reportedly original to the construction of the Site Building (i.e., ~ 12 years old). The fire alarm systems monitor flow control switches/sensors within the sprinkler and pre-action fire suppression systems, as well as heat and smoke detectors and manual pull stations. Fire alarm notification appliances (i.e., electronic fire bells and strobe lights) are present at various locations within the Site Building. The fire alarm system is reportedly monitored by an off-Site monitoring company. Inspections and servicing of the fire alarm system and associated systems within the Site Building are reportedly performed by an independent contractor and were last inspected in 2023.

The fire and life safety systems were noted to be in satisfactory condition with no major deficiencies.

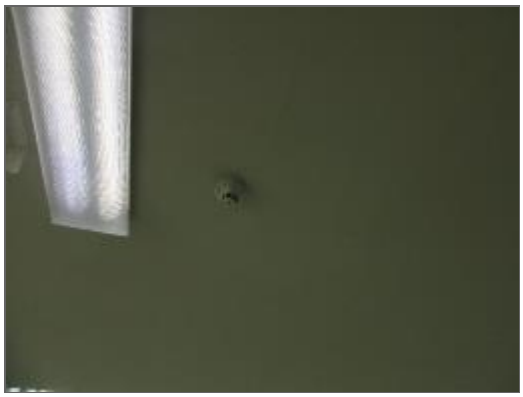
As previously mentioned, the fire alarm panel is reportedly original to the construction of the Site Building (i.e., ~ 12 years old). Fire alarm panels generally have a lifespan of 20 to 25 years. Consequently,

Pinchin has included an allowance for future as-required replacement of the fire alarm panel as indicated in the Reserve Fund Table. Additionally, an allowance for any as-required repairs/replacements of fire alarm system components has also been included in the Reserve Fund Table.

General view of the main fire alarm panel in the main service room.

General view of the fire alarm annunciator panel at the main entrance.

View of a typical illuminated exit sign.



View of a typical heat detector.

3.52 Security Surveillance

Camera surveillance is provided for the facility. An allowance for anticipated repairs of the security system has been included in the Reserve Fund Table.

3.53 Comprehensive Reserve Fund Study

Based on discussions with the Site Representative, the current fiscal year Comprehensive Reserve Fund Study is covered under the operating budget and should be included in the miscellaneous contingency budget. As such, no costs have been carried in the Reserve Fund Table.

3.54 to 3.55 Reserve Fund Studies

Based on discussions with the Site Representative, future reserve fund studies are covered under the operating budget and should be included in the miscellaneous contingency budget. As such, no costs have been carried in the Reserve Fund Table.

3.56 Miscellaneous

This item is intended to cover items that are not mentioned above as well as unexpected expenditures that require maintenance or replacement before the forecast time as listed in the attached tables.

4.0 RESERVE FUND FORECAST

4.1 Overview

Pinchin has conducted a Reserve Fund Study of the future repair and replacement requirements for the common element components.

It is required to maintain a separate fund to accommodate major capital expenditures required to repair and/or replace the common elements. This requires prediction of future events.

In Table 1, at the end of this report, Pinchin has summarized the pertinent information to be used in forecasting future capital expenditures for all of the major maintainable common element components of the Site Building. Table 1 provides a list of items included in the study, a brief description of these elements, their estimated normal and remaining lives, and their estimated replacement costs.

Tables 2 through 4 present projections for annual expenditures, interest income, required contributions (for the building owner as a whole), and reserve fund balance forecast over a fifteen-year period. The following sections explain the methodology used and assumptions made in constructing the fifteen-year repair/replacement forecast.

Based upon visual review, Pinchin has evaluated the present condition, and estimated remaining life expectancy, of the common elements. Pinchin has also, based upon estimates of historical replacement costs and experience with similar properties, prepared estimates of current repair and/or replacement costs for each of the common elements. An idealized fifteen-year repair/replacement forecast has been prepared that presents our recommendation for annual Reserve Fund contributions. Pinchin has allowed for the value of the present Reserve Fund and have attempted to account for the influences of inflation and rates of return on investments.

4.2 Fifteen-Year Repair/Replacement Forecast

Table 2 is an idealized fifteen-year cash flow plan for the Reserve Fund for the common elements, as they presently exist.

Based upon the projections of remaining life for each common element component, a repair or replacement cost for that item is entered into the appropriate column of Table 2 as an expenditure. The cost inserted into any particular column is the future value of the element's current replacement cost that is listed in Table 1. Pinchin has used a constant annual inflation rate of 2.5% (displayed at the top of Table 2) and standard annuity formulas to determine the future value of remedial work. The expenditures are then summed for each year to arrive at a figure for “Total Expenditures”. For elements with large repair/replacement costs, Pinchin has elected to phase the remedial work over several years instead of one, where possible. This results in a saving on annual contributions, especially for mature buildings, and also reflects a more probable repair strategy. The effect of the Harmonized Sales Tax (HST) is shown separately.

“Interest Income” is generated from two components: from Reserve Fund monies already on deposit and from the corporation's annual contributions. For the purpose of this study a rate of return value of 3.00% on investments has been used and is displayed at the top of Table 2. It is further assumed that expenditures for any one year are incurred at the end of the first quarter of that year, whereupon the Reserve Fund deposits on which interest is generated are reduced. Pinchin’s analysis presupposes that the “Annual Contribution” is deposited in twelve equal payments at the end of each month.

Pinchin recommends that all interest be reinvested in the reserve fund to offset increases in annual contributions.

The end-of-year “Reserve Fund Balance” is calculated as the sum of the previous year's “Reserve Fund Balance” (or “Present Reserve Fund” in the case of year one), “Total Expenditures”, “Harmonized Sales Tax”, “Interest Income”, “Corporation's Annual Contribution”, and any “Special Assessment”.

It is Pinchin’s opinion that the actual Reserve Fund contributions should be determined by the owners of 6815 Stanley Avenue (using Pinchin’s recommendations as a guide), in concert with their property management firm and accountant, to properly reflect the perceived needs and planning objectives set out by the owners. In the reserve fund model Pinchin has presented, Pinchin has made recommendations for funding levels that should ensure that adequate reserve funds are accumulated to pay for major capital expenditures over the next fifteen years. To start a reserve fund, In the model (Table 2), the “Annual Contribution” been set at $450,000.00 for fiscal year end 2023. The annual contribution is then recommended to be increased 5% (2.5% plus 2.5% to account for inflation) for the next three (3) years. After this period, no annual contribution increase is recommended for the remainder of the 15-year projection of the study. Pinchin has determined the “Annual Contribution” requirement on the basis that the “Reserve Fund Balance” for each of the remaining 15 years must never result in a deficit or zero balance. Pinchin does not recommend that reserves be maintained at or near a “zero” balance in case some unforeseen incident occurs that requires emergency expenditures. This is based on a starting reserve balance of $1,910,344.00 as of September 15, 2023, and a recommended contribution of $450,000 for fiscal year ending 2023.

Please note that this study must not be relied upon on its own, without updating, to determine reserve fund contributions over the next fifteen years.

4.3 Assumptions and Limitations

It must be emphasized that, in preparing a Reserve Fund Forecast, many predictions of future events are required. The rationale behind projecting life expectancy and current repair/replacement costs has already been explained in Section 2.0.

In order to predict the future repair/replacement costs, Pinchin firmly believes it is necessary to account for the influence of inflation on construction costs. Pinchin has reviewed the overall escalation of residential construction costs, as reflected in certain statistical indicators, as well as fluctuations in interest rates in Canada over the past years. Pinchin has assumed that an average construction cost rate of inflation will be in effect over the remaining life of the condominium complex. The value of 2.5% has been used as an annual inflation figure.

Similarly, to properly account for the interest a Reserve Fund will earn on deposits, a rate of return value of 3.00% on investments has been used. It is Pinchin's opinion that this represents a conservative figure and will likely not result in under-funding of reserves.

Because of changing economic conditions as well as the many assumptions and limited visual sampling of common elements involved in developing a fifteen-year repair/replacement forecast, a Reserve Fund Forecast cannot be expected to be one hundred percent accurate. It is recommended to review and update this study every three (3) years to ensure cost data and repair/replacement records are kept current and relevant.

In deriving the reserve fund table, it was assumed that proper maintenance will be carried out in order to keep the common elements serviceable for their estimated life expectancies.

The Client may choose to phase more of the common element work over longer periods, this may result in savings on contributions by delaying a portion of the remedial work. There may be instances where items included in this reserve fund may be handled as part of the operating budget. There may also be instances where an item may be upgraded by the condominium and its cost recovered through special assessments. All of these actions will reduce the reserve fund contributions required.

4.4 Investment Planning

Pinchin recommends that Client review the repair/replacement forecast with their accountant and financial manager in order to maximize returns on the reserve fund. Interest earned by operating (repair/maintenance budget) and reserve funds is presently not subject to taxation, provided the interest is used to reduce the contributions required to these funds and provided the funds are not maintained at unreasonably high levels. Pinchin has assumed a single interest rate that, in our opinion, is on the conservative side. By varying deposits between investment vehicles, it may be possible to obtain higher market rates and thus increase interest income and slightly reduce required contributions. However, this approach must take into account that high-risk investments must be avoided.

It is recommended that the Client review the contents of this report in consort with their property manager and accountant to:

- Ensure that there is no duplication between Reserve Fund and Operating (Repair and Maintenance) Budget.
- Determine the most appropriate low-risk investment vehicles to maximize return and still meet the cash flow requirements.
- Establish the required Reserve Fund contributions to properly reflect the perceived needs and planning objectives of the Property Owner.

5.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

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TABLE 1

Replacement Cost Summary

Table 1 - Replacement Cost Summary
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

#	Element	Comments & Recommendations	Estimated Year of Acquisition	Normal Life (yrs.)	Present Age (yrs.)	Remaining Life (yrs.)	Percentage of Total Replacement	2023 Cost of Replacement
	Building Elements							
3.1	Roof System - TPO Membrane Roof	Complete removal and phased replacement of the TPO membrane roof.	2011	20	12	8	100%	$3,114,496
3.2	Roof System - Skylights	An allowance for the future repair/replacement of the skylights located atop of the main roof level	2011	23	12	11	100%	$50,000
3.3	Roof System - Metal Flashings	An allowance for the future replacement of the metal flashing elements at the main roof.	2011	20	12	8	100%	$7,500
3.4	Soffits - Entrance Canopies	An allowance for the future rehabilitation of the canopies.	2011	25	12	13	100%	$18,000
3.5	Brick Veneer Masonry	Full replacement not likely required during life of the building. Allowances for localized repairs to deteriorated areas of the brick veneer masonry have been carried every 7 years.	2011	7	0	7	100%	$60,000
3.6	Prefinished Metal Wall Panels	Allowance for periodic coating/ repairs of the panels.	2011	20	12	8		$15,000
3.7	Windows	An allowance for maintenance and localized replacement of the windows at the building.	2011	20	12	8	30%	$50,000
3.8	Curtain Wall	An allowance for maintenance and localized replacement of the curtain wall at the building.	2011	20	12	8	10%	$468,000
3.9	Main Entrance Doors	Main entrance and vestibule doors, double swing aluminum door, double glazed. Allowance for the maintenance and localized replacement of the exterior door systems.	2011	25	12	13	20%	$50,000
3.10	Entrance and Exit Doors	Hollow metal entrance doors in metal frames were noted at the west elevation of the Site Building. An allowance for repairs/repainting of the exterior doors and repairs.	2011	25	12	13		$18,000
3.11	Service Doors	Metal overhead roll-up doors noted at the west elevation of the Site Building. Allowance for the maintenance and localized replacement of the exterior door systems.	2011	25	12	13	100%	$24,000
3.12	Exterior Sealants	Complete removal and replacement of all exterior joint sealant around windows, door frames, other penetrations, etc.	2011	15	12	3	100%	$125,000
3.13	Structural Elements	Allowances for periodic repairs of the concrete foundation walls, including concrete patching, crack sealing.	2011	10	0	10		$10,000

Table 1 - Replacement Cost Summary
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

#	Element	Comments & Recommendations	Estimated Year of Acquisition	Normal Life (yrs.)	Present Age (yrs.)	Remaining Life (yrs.)	Percentage of Total Replacement	2023 Cost of Replacement
	Interior Finishes							
3.14	Interior Doors - Repairs	An allowance for rmaintenance of the interior doors.	2011	15	12	3		$15,000
3.15	Interior Finishes - Flooring - Vinyl	An allowance for the future replacement of flooring finishes within the building.	2011	15	12	3	20%	$50,000
3.16	Interior Finishes - Flooring - Carpet	An allowance for the future replacement of flooring finishes within the building.	2011	15	12	3	30%	$140,000
3.17	Interior Finishes - Flooring - Ceramic Tiles	An allowance for the future replacement/refinishing of flooring finishes within main kitchen and washrooms.	2011	15	12	3	20%	$80,000
3.18	Interior Finishes - Flooring - Epoxy	An allowance for the future replacement of flooring finishes within the building.	2011	15	12	3	75%	$10,000
3.19	Interior Finishes - Flooring - Concrete	An allowance for the future replacement of flooring finishes within the building.	2011	15	12	3	20%	$10,000
3.20	Interior Finishes - Ceiling - Ceiling Tiles	An allowance for the future replacement of ceiling tiles.	2011	15	12	3	5%	$80,000
3.21	Interior Finishes - Ceiling - Painted Gypsum Board	An allowance for the future repainting of ceiling finishes within common areas.	2011	15	12	3	25%	$60,000
3.22	Interior Finishes - Walls - Painted Gypsum Board	An allowance for the future repainting of walls finishes.	2011	15	12	3	20%	$80,000
3.23	Interior Stairwells and Handrails	An allowance for repainting of stairwell and handrails.	2011	15	12	3		$45,000
3.24	Interior Stairwells - Finishes	An allowance for rubber stair treads.	2011	25	12	13		$30,000
3.25	Millwork	An allowance for re-facing of cafe and washroom cabinets.	2011	25	12	13		$35,000
	Exterior Site Elements							
3.26	Site Concrete Elements (curbs, concrete stairs, etc.)	An allowance for localized repairs/replacements of the Site concrete elements.	2011	15	12	3		$25,000
3.27	Concrete Walkways	An allowance for replacement/rehabilitation of the walkways.	2011	20	12	8	50%	$175,000
3.28	Asphalt Roadways and Parking Areas - Repairs	Allowances for phased localized repairs of asphalt paved areas.	2011	17	12	5	25%	$840,000
3.29	Landscaping - General	Included as part of the maintenance expenses.	2011	15	12	3		
3.30	Metal Guardrails and Fencing	Included as part of the maintenance expenses.	2011	15	12	3		
3.31	Site Services	An allowance for the repair/replacement of underground site services.	2011	50	12	38		

Table 1 - Replacement Cost Summary
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

#	Element	Comments & Recommendations	Estimated Year of Acquisition	Normal Life (yrs.)	Present Age (yrs.)	Remaining Life (yrs.)	Percentage of Total Replacement	2023 Cost of Replacement
	Elevators							
3.32	Elevator Systems - Survey	An allowance for a detailed review/survey of the elevator systems	2011	25	12	13		$5,000
3.33	Escalator Systems - Survey	An allowance for a detailed review/survey of the escalator systems	2011	25	12	13		$5,000
	Mechanical							
3.34	Rooftop HVAC units	Allowances for the phased retrofit of the rooftop HVAC units	2011	23	12	11		$1,000,000
3.35	Natural-gas fired suspended unit heaters	Allowances for the replacement of the six (6) natural gas-fired suspended unit heaters	2011	25	12	13		$30,000
3.36	Split AC units and Condensing Units	An allowance for the end of EUL replacement.	2011	20	12	8		$155,000
3.37	DHW Heaters - Replace- Site Building	Allowances for the replacement of the four (4) older natural gas-fired DHW heaters	2011	15	12	3		$70,000
3.38	DHW Storage Tank- Site Building	An allowance for the end of EUL replacement.	2011	25	12	13		$15,000
3.39	Plumbing - Site Building	An allowance for periodic repair and replacement plumbing replacement of the risers, valves and water distribution system in the building.	2011	25	12	13		$40,000
3.40	Storm and Sanitary System - Scope	An allowance for scope and flushing.	2011	15	12	3		$12,000
3.41	Sump Pump	An allowance for replacement of one (1) sump pump.	2011	15	12	3		$5,000

Table 1 - Replacement Cost Summary
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

#	Element	Comments & Recommendations	Estimated Year of Acquisition	Normal Life (yrs.)	Present Age (yrs.)	Remaining Life (yrs.)	Percentage of Total Replacement	2023 Cost of Replacement
	Electrical							
3.42	Electrical Panels - Site Building	An allowance for any as required repairs/replacements of electrical panels and disconnects	2011	20	12	8		$20,000
3.43	Transformer - Site Building	An allowance for any as required repairs/replacements of the transformers.	2011	20	12	8		$20,000
3.44	Exterior Lighting	Included as part of the maintenance expenses.	2011	25	12	13		
3.45	Interior Lighting	Included as part of the maintenance expenses.	2011	25	12	13		
3.46	Exit Signage	Included as part of the maintenance expenses.	2011	25	12	13		
3.47	Battery Packed Emergency Lighting	Included as part of the maintenance expenses.	2011	25	12	13		
3.48	Emergency Generator		2011	35	12	23		
3.49	UPS System	An allowance for replacement of the UPS system.	2011	26	12	14		$140,000
3.50	Fire Protection System - Repairs/Replacements- Fire Extinguishers	An allowance for repairs/replacements of the fire extinguishers.	2011	18	12	6		$5,000
3.51	Fire Alarm Panel - Repairs/Replacement	An allowance for major repairs/replacement of the fire alarm panel.	2011	20	12	8		$75,000
3.52	Security System	An allowance for repair services of the security system is included.	2011	25	12	13		$60,000
	Contingencies							
3.53	Comprehensive RFS	Included as part of the operating budget.		3	3	0		
3.54	Reserve Fund Studies - Updates	Included as part of the operating budget.		6	3	6		
3.55	Reserve Fund Studies - Updates	Included as part of the operating budget.		6	3	3		
3.56	Miscellaneous	A contingency allowance for items not listed above and for unexpected expenditures.		1		1		$20,000

Notes: 1. The values presented in the above table are based on the assumption that a reasonable amount of proper and timely maintenance is provided over the life span of the components. The cost for regular maintenance should be provided for in the operating budget.

TABLE 2

15 Year Repair/Replacement Forecast

Table 2 - 15 Year Repair/Replacement Forecast
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

Assumed Interest Rate = 3.00% | **Assumed Inflation Rate = 2.50%** | **Present Reserve Fund = $1,910,344** As Of September 15, 2023

#	Element	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Building Elements										
3.1	Roof System - TPO Membrane Roof									758,942	777,916
3.2	Roof System - Skylights										
3.3	Roof System - Metal Flashings									9,138	
3.4	Soffits - Entrance Canopies										
3.5	Brick Veneer Masonry								71,321		
3.6	Prefinished Metal Wall Panels									18,276	
3.7	Windows									60,920	
3.8	Curtain Wall									570,213	
3.9	Main Entrance Doors										
3.10	Entrance and Exit Doors										
3.11	Service Doors										
3.12	Exterior Sealants				134,611						
3.13	Structural Elements										
	Interior Finishes										
3.14	Interior Doors - Repairs				16,153						
3.15	Interior Finishes - Flooring - Vinyl				53,845						
3.16	Interior Finishes - Flooring - Carpet				150,765						
3.17	Interior Finishes - Flooring - Ceramic Tiles				86,151						
3.18	Interior Finishes - Flooring - Epoxy				10,769						
3.19	Interior Finishes - Flooring - Concrete				10,769						
3.20	Interior Finishes - Ceiling - Ceiling Tiles				28,717						
3.21	Interior Finishes - Ceiling - Painted Gypsum Board				64,613						
3.22	Interior Finishes - Walls - Painted Gypsum Board				86,151						
3.23	Interior Stairwells and Handrails				48,460						
3.24	Interior Stairwells - Finishes										
3.25	Millwork										
	Exterior Site Elements										
3.26	Site Concrete Elements (curbs, concrete stairs, etc.)				26,922						
3.27	Concrete Walkways									213,221	
3.28	Asphalt Roadways and Parking Areas - Repairs						316,794				349,682
3.29	Landscaping - General										
3.30	Metal Guardrails and Fencing										
3.31	Site Services										
	Elevators										
3.32	Elevator Systems - Survey										
3.33	Escalator Systems - Survey										
	Mechanical										
3.34	Rooftop HVAC units										
3.35	Natural-gas fired suspended unit heaters										
3.36	Split AC units and Condensing Units									188,852	
3.37	DHW Heaters - Replace- Site Building				75,382						
3.38	DHW Storage Tank- Site Building										
3.39	Plumbing - Site Building										
3.40	Storm and Sanitary System - Scope				12,923						
3.41	Sump Pump				5,384						
	Electrical										
3.42	Electrical Panels - Site Building									24,368	
3.43	Transformer - Site Building									24,368	
3.44	Exterior Lighting										
3.45	Interior Lighting										
3.46	Exit Signage										
3.47	Battery Packed Emergency Lighting										
3.48	Emergency Generator										
3.49	UPS System										
3.50	Fire Protection System - Repairs/Replacements- Fire Extinguishers							5,798			
3.51	Fire Alarm Panel - Repairs/Replacement									91,380	
3.52	Security System										
	Contingencies										
3.53	Comprehensive RFS										
3.54	Reserve Fund Studies - Updates										
3.55	Reserve Fund Studies - Updates										
3.56	Miscellaneous		20,500	21,013	21,538	22,076	22,628	23,194	23,774	24,368	24,977
Total Expenditures		**0**	**-20,500**	**-21,013**	**-833,154**	**-22,076**	**-339,422**	**-28,992**	**-95,095**	**-1,984,046**	**-1,152,575**
Harmonized Sales Tax		**0**	**-2,665**	**-2,732**	**-108,310**	**-2,870**	**-44,125**	**-3,769**	**-12,362**	**-257,926**	**-149,835**
Annual Contribution		**450,000**	**472,500**	**496,125**	**520,931**	**520,931**	**520,931**	**520,931**	**520,931**	**520,931**	**520,931**
Special Assessment											
Interest Income		**64,344**	**79,774**	**96,182**	**92,963**	**103,828**	**113,923**	**129,539**	**146,629**	**115,156**	**87,664**
Annual Reserve Fund Balances ($)		**$2,424,688**	**$2,953,797**	**$3,522,360**	**$3,194,790**	**$3,794,603**	**$4,045,910**	**$4,663,618**	**$5,223,721**	**$3,617,836**	**$2,924,022**
Annual Contribution Increase (%)		**N/A**	**5%**	**5%**	**5%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

Table 2 - 15 Year Repair/Replacement Forecast
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

Assumed Interest Rate = 3.00% **Assumed Inflation Rate = 2.50%**

#	Element	2033	2034	2035	2036	2037
	Building Elements					
3.1	Roof System - TPO Membrane Roof	797,364	817,298	837,730		
3.2	Roof System - Skylights		65,604			
3.3	Roof System - Metal Flashings					
3.4	Soffits - Entrance Canopies				24,813	
3.5	Brick Veneer Masonry					84,778
3.6	Prefinished Metal Wall Panels					
3.7	Windows					
3.8	Curtain Wall					
3.9	Main Entrance Doors				68,926	
3.10	Entrance and Exit Doors				24,813	
3.11	Service Doors				33,084	
3.12	Exterior Sealants					
3.13	Structural Elements	12,801				
	Interior Finishes					
3.14	Interior Doors - Repairs					
3.15	Interior Finishes - Flooring - Vinyl					
3.16	Interior Finishes - Flooring - Carpet					
3.17	Interior Finishes - Flooring - Ceramic Tiles					
3.18	Interior Finishes - Flooring - Epoxy					
3.19	Interior Finishes - Flooring - Concrete					
3.20	Interior Finishes - Ceiling - Ceiling Tiles					
3.21	Interior Finishes - Ceiling - Painted Gypsum Board					
3.22	Interior Finishes - Walls - Painted Gypsum Board					
3.23	Interior Stairwells and Handrails					
3.24	Interior Stairwells - Finishes				41,355	
3.25	Millwork			47,071		
	Exterior Site Elements					
3.26	Site Concrete Elements (curbs, concrete stairs, etc.)					
3.27	Concrete Walkways					
3.28	Asphalt Roadways and Parking Areas - Repairs				385,983	
3.29	Landscaping - General					
3.30	Metal Guardrails and Fencing					
3.31	Site Services					
	Elevators					
3.32	Elevator Systems - Survey				6,893	
3.33	Escalator Systems - Survey				6,893	
	Mechanical					
3.34	Rooftop HVAC units		328,022	336,222	344,628	353,243
3.35	Natural-gas fired suspended unit heaters				41,355	
3.36	Split AC units and Condensing Units					
3.37	DHW Heaters - Replace- Site Building					
3.38	DHW Storage Tank- Site Building				20,678	
3.39	Plumbing - Site Building				55,140	
3.40	Storm and Sanitary System - Scope					
3.41	Sump Pump					
	Electrical					
3.42	Electrical Panels - Site Building					
3.43	Transformer - Site Building					
3.44	Exterior Lighting					
3.45	Interior Lighting					
3.46	Exit Signage					
3.47	Battery Packed Emergency Lighting					
3.48	Emergency Generator					
3.49	UPS System					197,816
3.50	Fire Protection System - Repairs/Replacements- Fire Extinguishers					
4	Fire Alarm Panel - Repairs/Replacement					
3.52	Security System				82,711	
	Contingencies					
3.53	Comprehensive RFS					
3.54	Reserve Fund Studies - Updates					
3.55	Reserve Fund Studies - Updates					
3.56	Miscellaneous	25,602	26,242	26,898	27,570	28,259
Total Expenditures		**-810,164**	**-1,210,924**	**-1,221,023**	**-1,054,561**	**-635,838**
Harmonized Sales Tax		**-105,321**	**-157,420**	**-158,733**	**-137,093**	**-82,659**
Annual Contribution		**520,931**	**520,931**	**520,931**	**520,931**	**520,931**
Special Assessment						
Interest Income		**75,354**	**55,354**	**31,003**	**14,628**	**9,695**
Annual Reserve Fund Balances ($)		**$2,604,821**	**$1,812,762**	**$984,940**	**$328,845**	**$140,975**
Annual Contribution Increase (%)		**0%**	**0%**	**0%**	**0%**	**0%**

TABLE 3

Cash Flow Table

Table 3 - Cash Flow Table
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

Opening Balance of the Reserve Fund	**$1,910,344**
Minimum Reserve Fund Balance (as indicated in this table)	**$140,975**
Assumed Annual Inflation Rate for Reserve Fund Expenditures	**2.50%**
Assumed Annual Interest Rate for interest earned on the Reserve Fund	**3.00%**

Year	Opening Balance	Recommended Annual Contribution	Estimated Inflation Adjusted Expenditures	Estimated Interest Earned	Percentage Increase in Recommended Annual Contribution	Closing Balance
2023	$1,910,344	$450,000	$0	$64,344	N/A	$2,424,688
2024	$2,424,688	$472,500	-$23,165	$79,774	5%	$2,953,797
2025	$2,953,797	$496,125	-$23,744	$96,182	5%	$3,522,360
2026	$3,522,360	$520,931	-$941,464	$92,963	5%	$3,194,790
2027	$3,194,790	$520,931	-$24,946	$103,828	0%	$3,794,603
2028	$3,794,603	$520,931	-$383,547	$113,923	0%	$4,045,910
2029	$4,045,910	$520,931	-$32,761	$129,539	0%	$4,663,618
2030	$4,663,618	$520,931	-$107,457	$146,629	0%	$5,223,721
2031	$5,223,721	$520,931	-$2,241,972	$115,156	0%	$3,617,836
2032	$3,617,836	$520,931	-$1,302,409	$87,664	0%	$2,924,022
2033	$2,924,022	$520,931	-$915,486	$75,354	0%	$2,604,821
2034	$2,604,821	$520,931	-$1,368,344	$55,354	0%	$1,812,762
2035	$1,812,762	$520,931	-$1,379,757	$31,003	0%	$984,940
2036	$984,940	$520,931	-$1,191,654	$14,628	0%	$328,845
2037	$328,845	$520,931	-$718,497	$9,695	0%	$140,975

TABLE 4

Contribution Table

Table 4 - Contribution Table
6815 Stanley Avenue, Niagara Falls, ON

September - 2023

Year	A Recommended Annual Contribution	Percentage Increase Over Previous Year	B Other Contributions (e.g. special assessment, loan)	A + B Total Contribution Each Year to Reserve Fund
2023	$450,000	N/A	$0	$450,000
2024	$472,500	5%	$0	$472,500
2025	$496,125	5%	$0	$496,125
2026	$520,931	5%	$0	$520,931
2027	$520,931	0%	$0	$520,931
2028	$520,931	0%	$0	$520,931
2029	$520,931	0%	$0	$520,931
2030	$520,931	0%	$0	$520,931
2031	$520,931	0%	$0	$520,931
2032	$520,931	0%	$0	$520,931
2033	$520,931	0%	$0	$520,931
2034	$520,931	0%	$0	$520,931
2035	$520,931	0%	$0	$520,931
2036	$520,931	0%	$0	$520,931
2037	$520,931	0%	$0	$520,931

Appendix D – Non-Core Inventory Asset Hierarchies

This Appendix presents the asset hierarchies for:

- Transportation Services
  - Road Operations
  - Parking Operations
  - Traffic Services
- Parks and Trails
  - Parks
  - Trail Network
- Natural Assets
- Municipal Administration
  - Information Services
  - Furniture and Related
- Recreation Services
- Cultural Services
- Fire Services
- Cemetery Services
- Building hierarchy based on Uniformat II
- Library Services
- Niagara District Airport

Figure D-1: Asset Hierarchy – Transportation Services

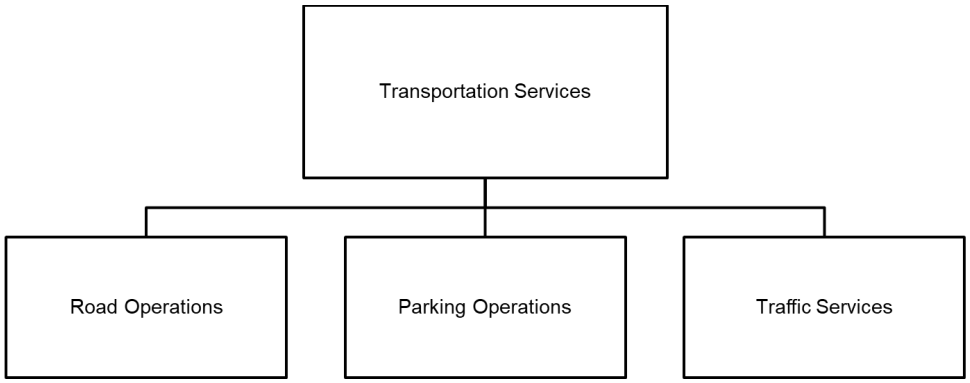
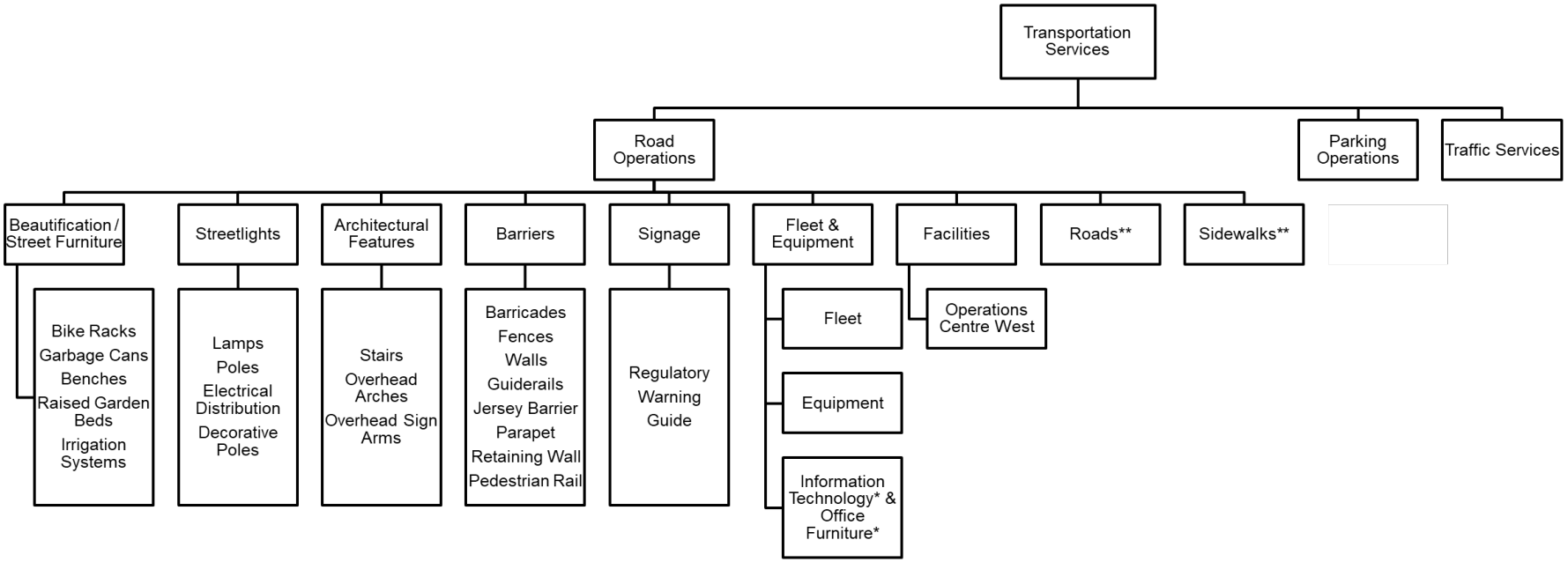


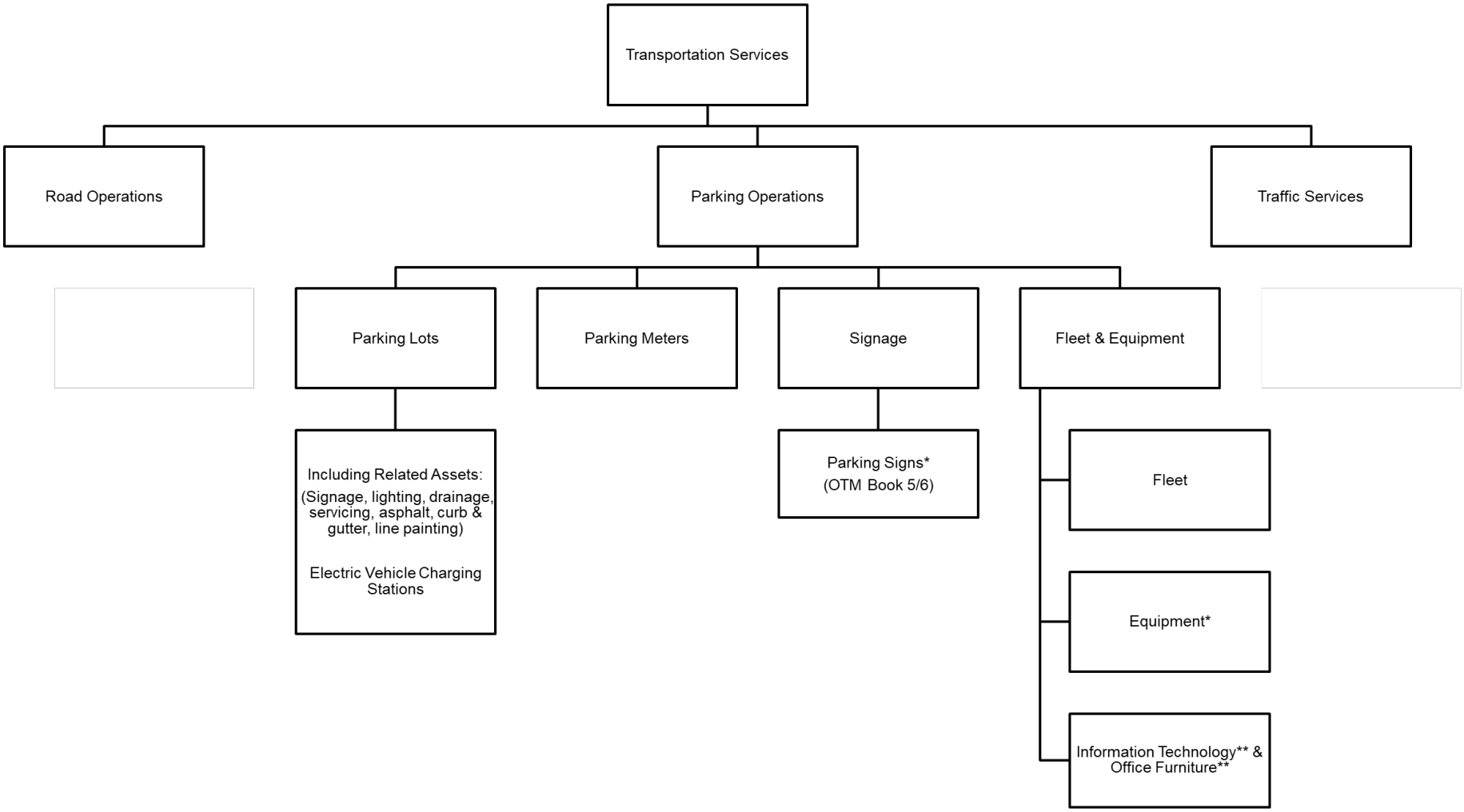
Figure D-2: Asset Hierarchy – Transportation Services, Road Operations



* These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

** These were reported in the 2022 Core AM Plan.

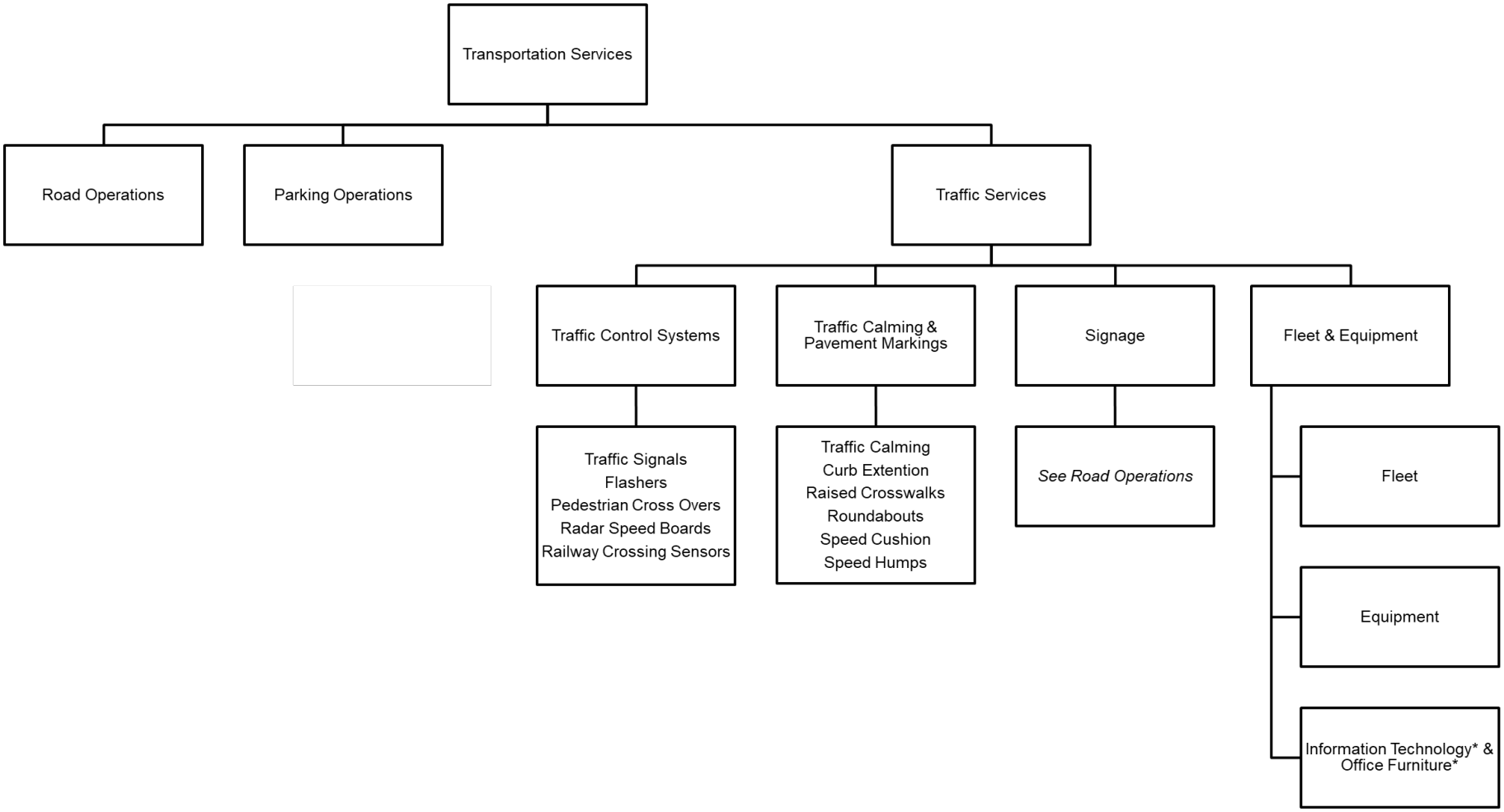
Figure D-3: Asset Hierarchy – Transportation Services, Parking Operations



* Not included in 2024 Non-Core AM Plan due to lack of data.

** These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

Figure D-4: Asset Hierarchy – Transportation Services, Traffic Services



* These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

Figure D-5: Asset Hierarchy – Parks and Trails

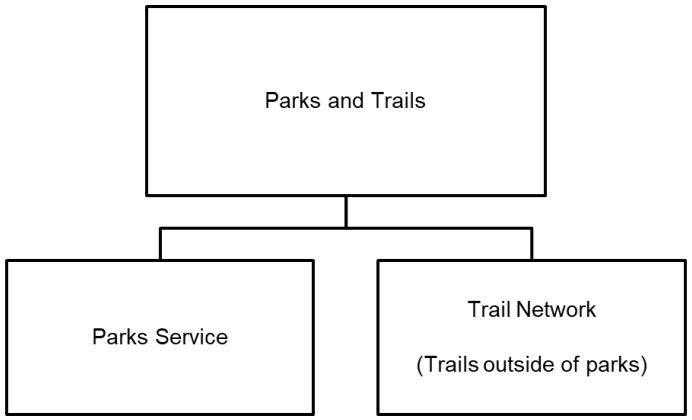
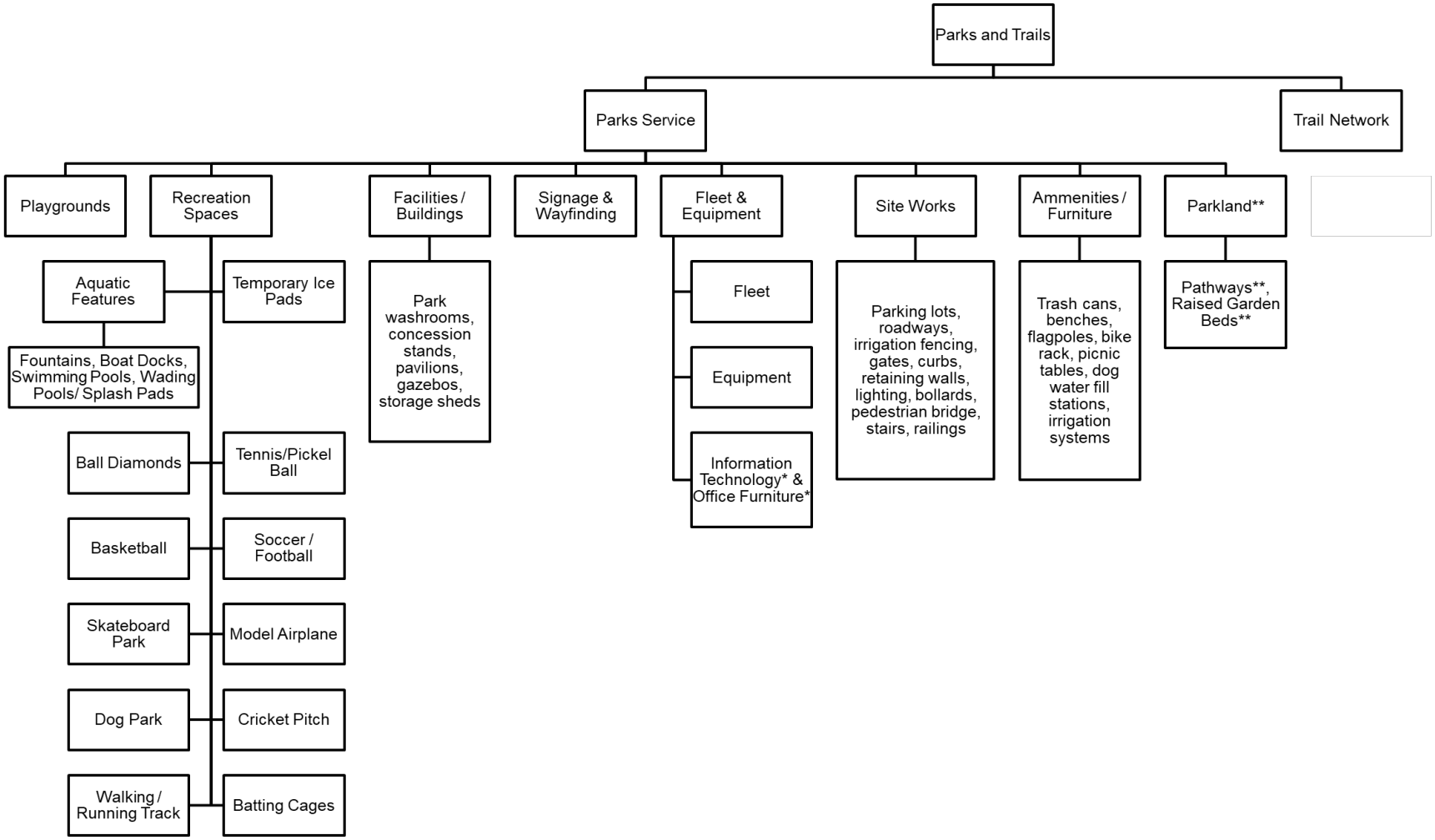


Figure D-6: Asset Hierarchy – Parks and Trails, Parks Service



* These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

** Not included in 2024 Non-Core AM Plan due to lack of data.

Figure D-7: Asset Hierarchy – Parks and Trails, Trail Network

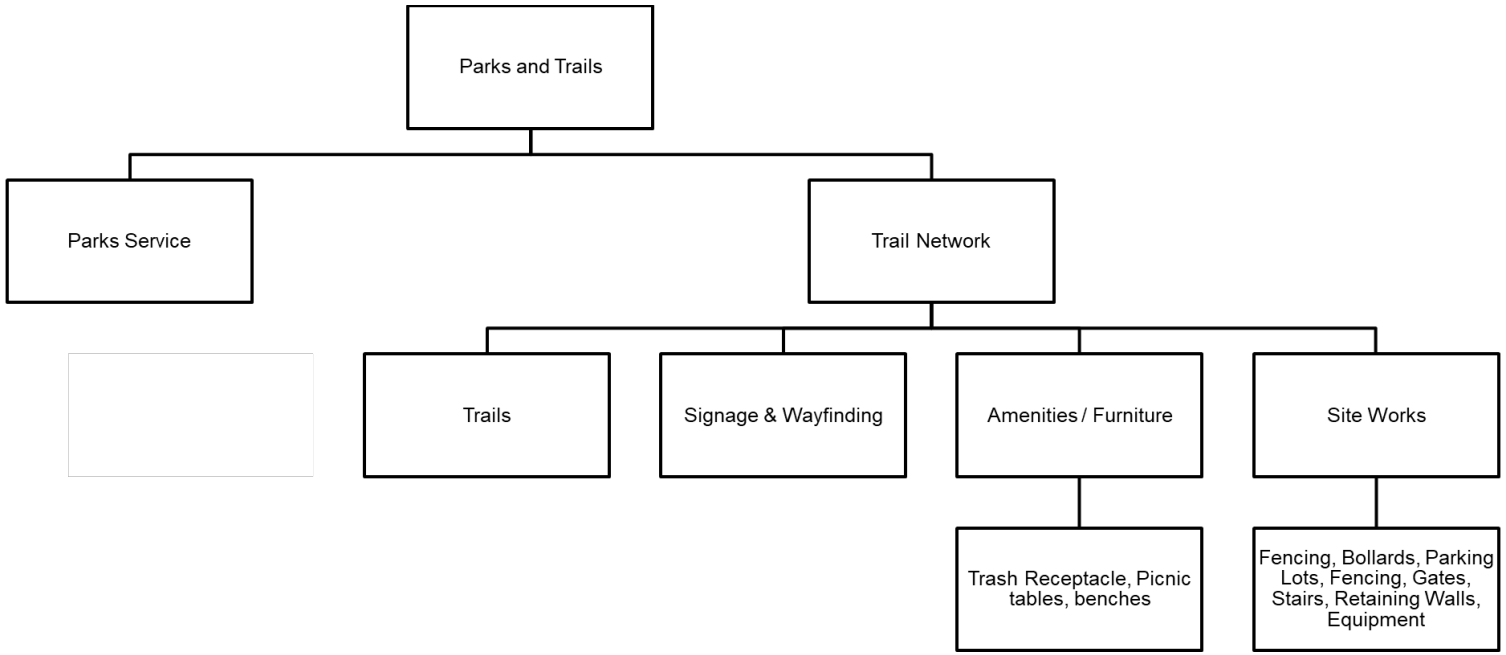
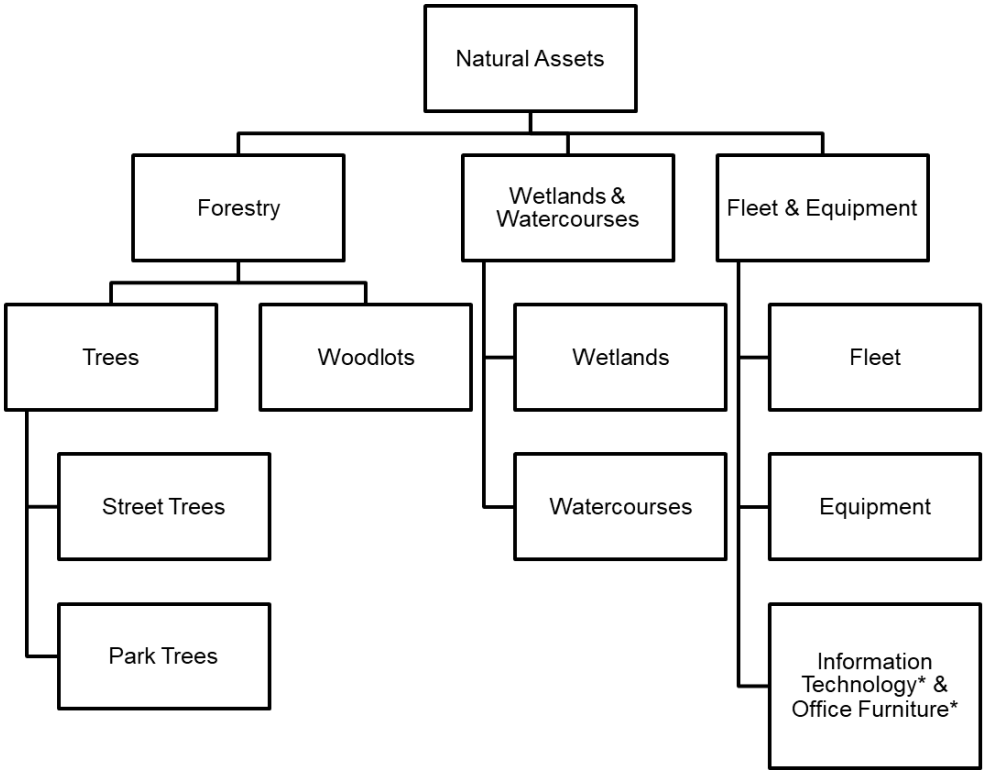


Figure D-8: Asset Hierarchy – Natural Assets



* These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

Figure D-9: Asset Hierarchy – Municipal Administration

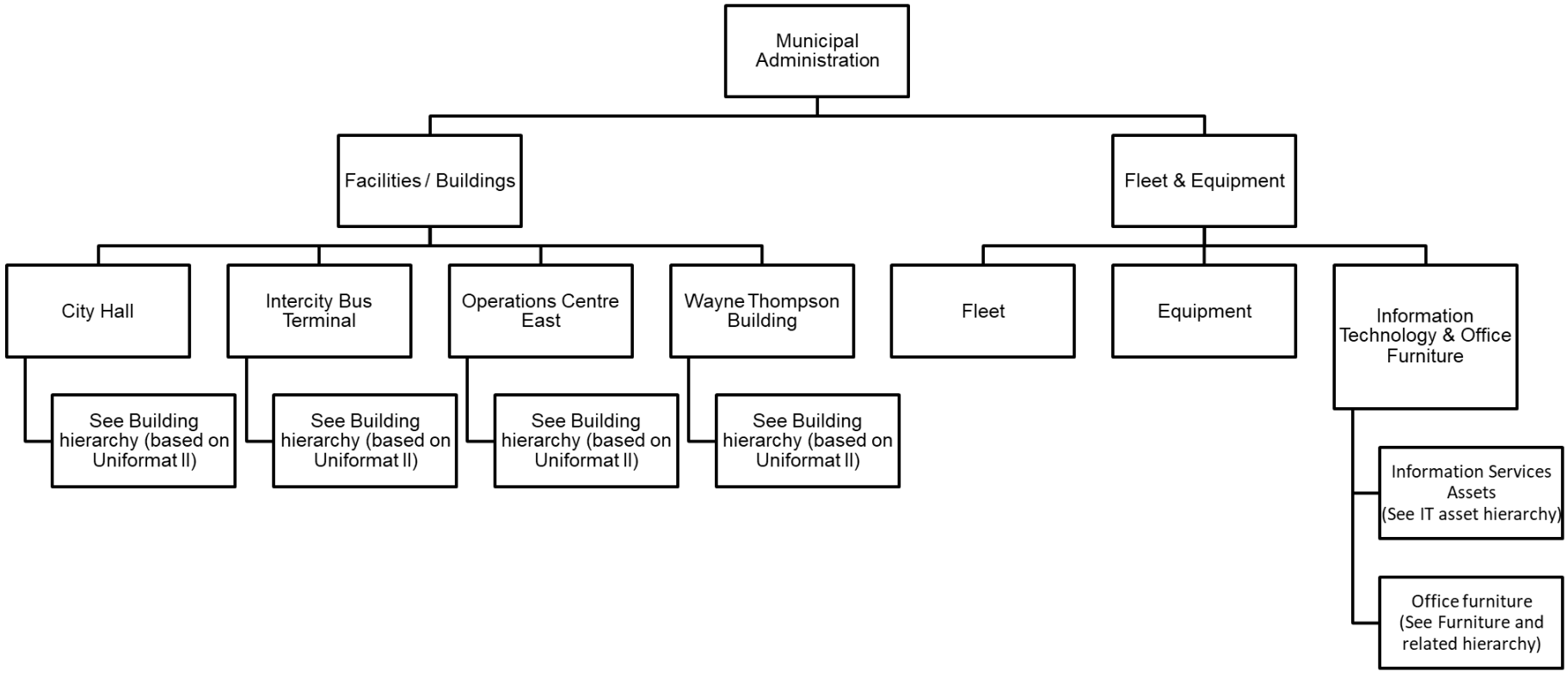


Figure D-10: Asset Hierarchy – Municipal Administration, Information Services

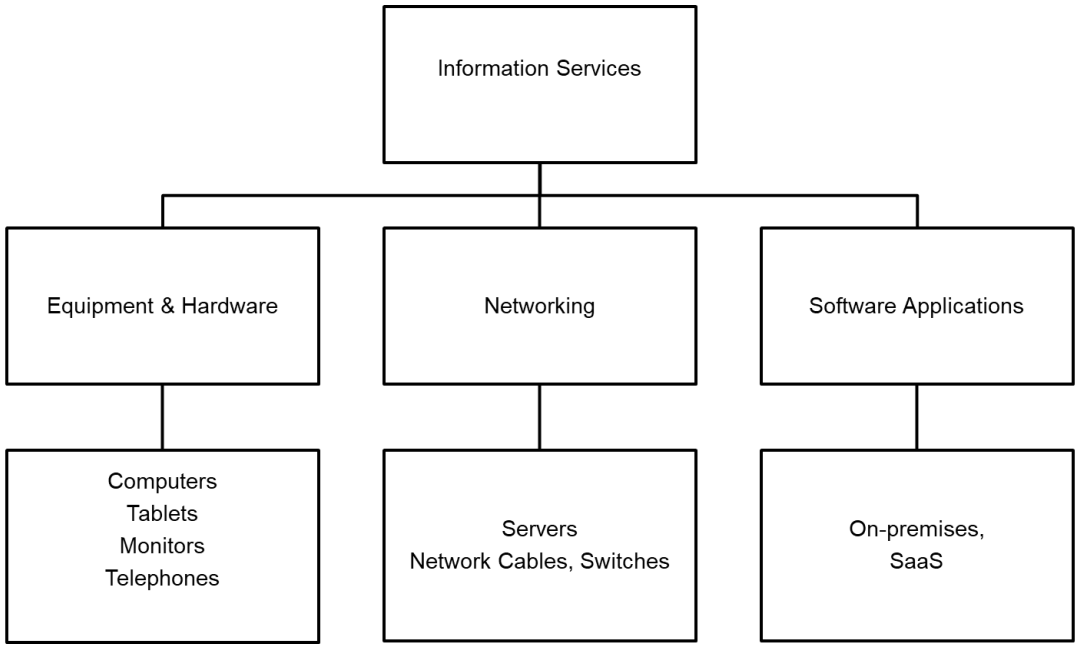


Figure D-11: Asset Hierarchy – Municipal Administration, Furniture and Related

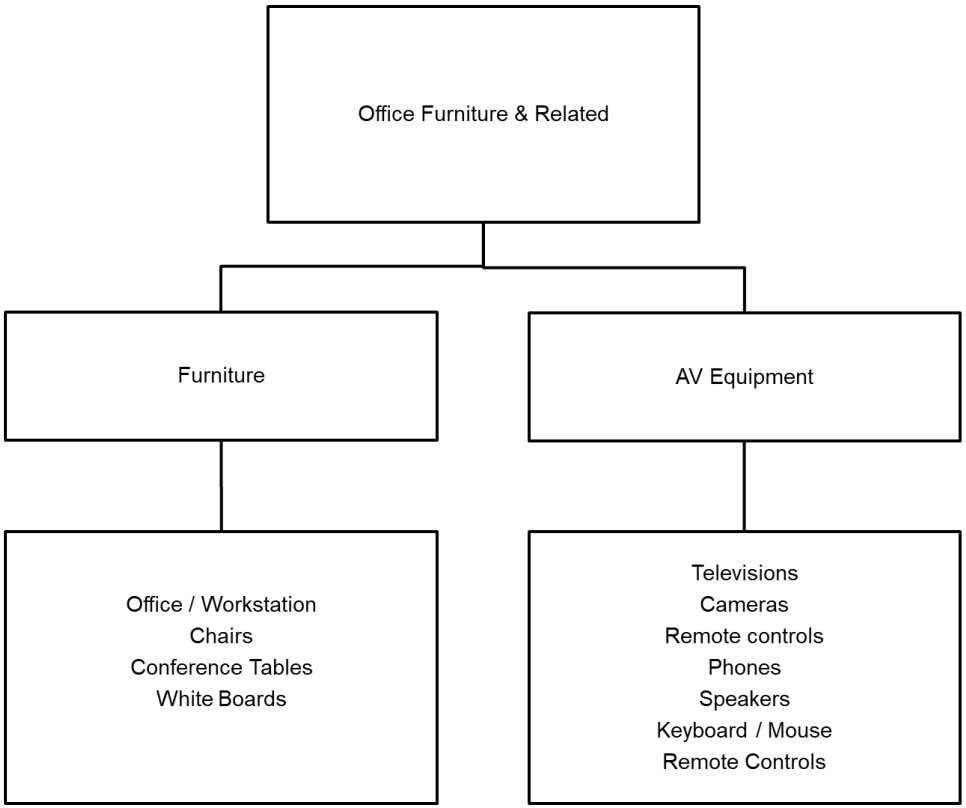
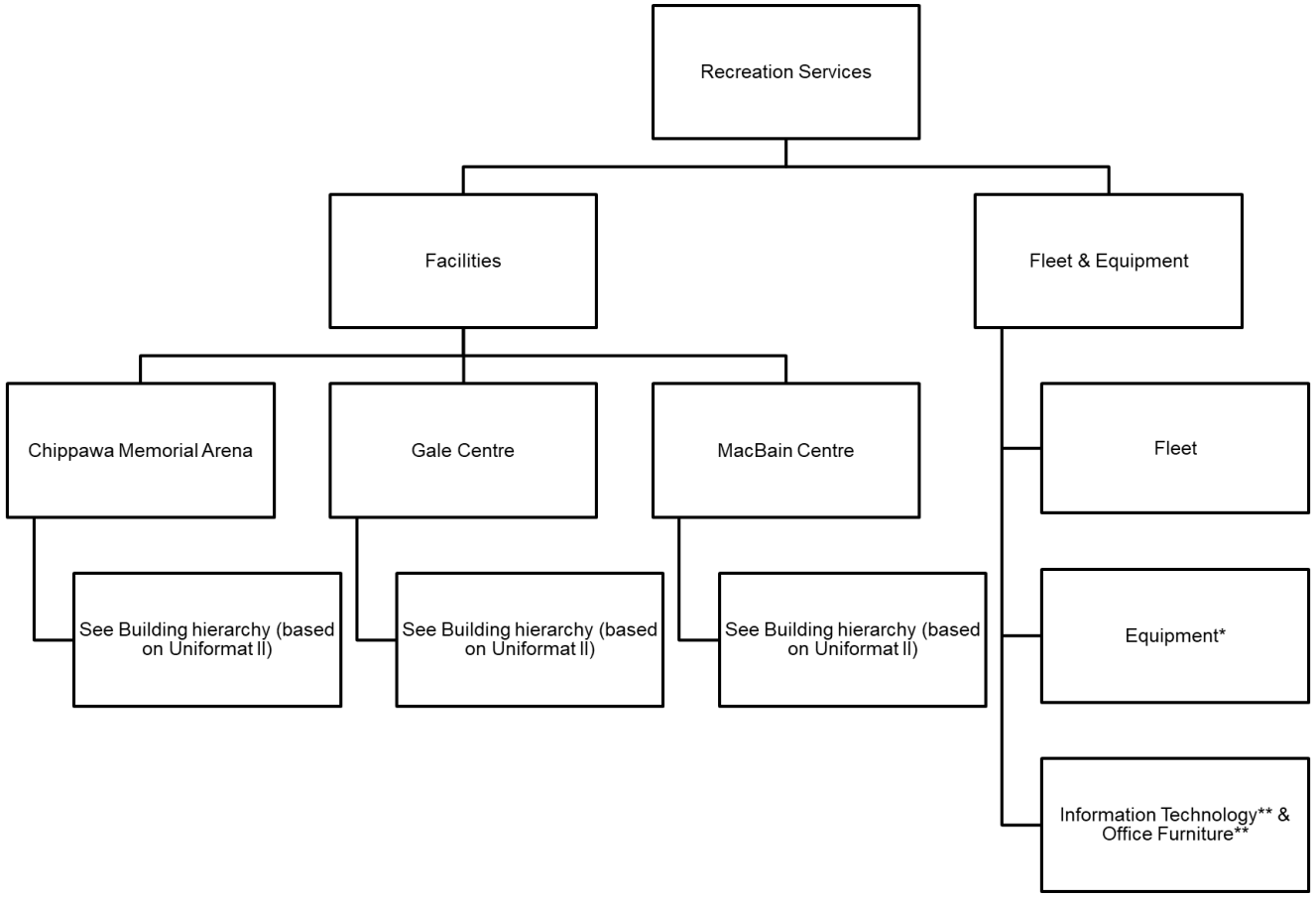


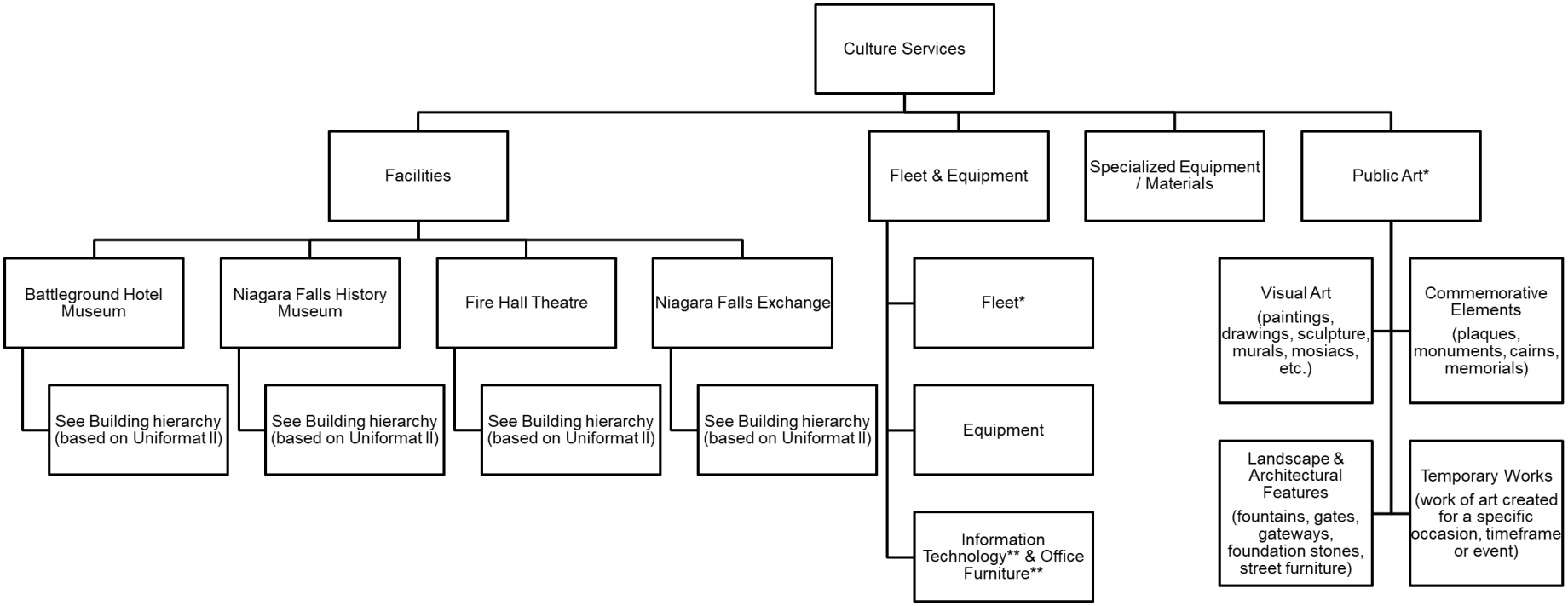
Figure D-12: Asset Hierarchy – Recreation Services



* None identified in 2024 Non-Core AM Plan.

** These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

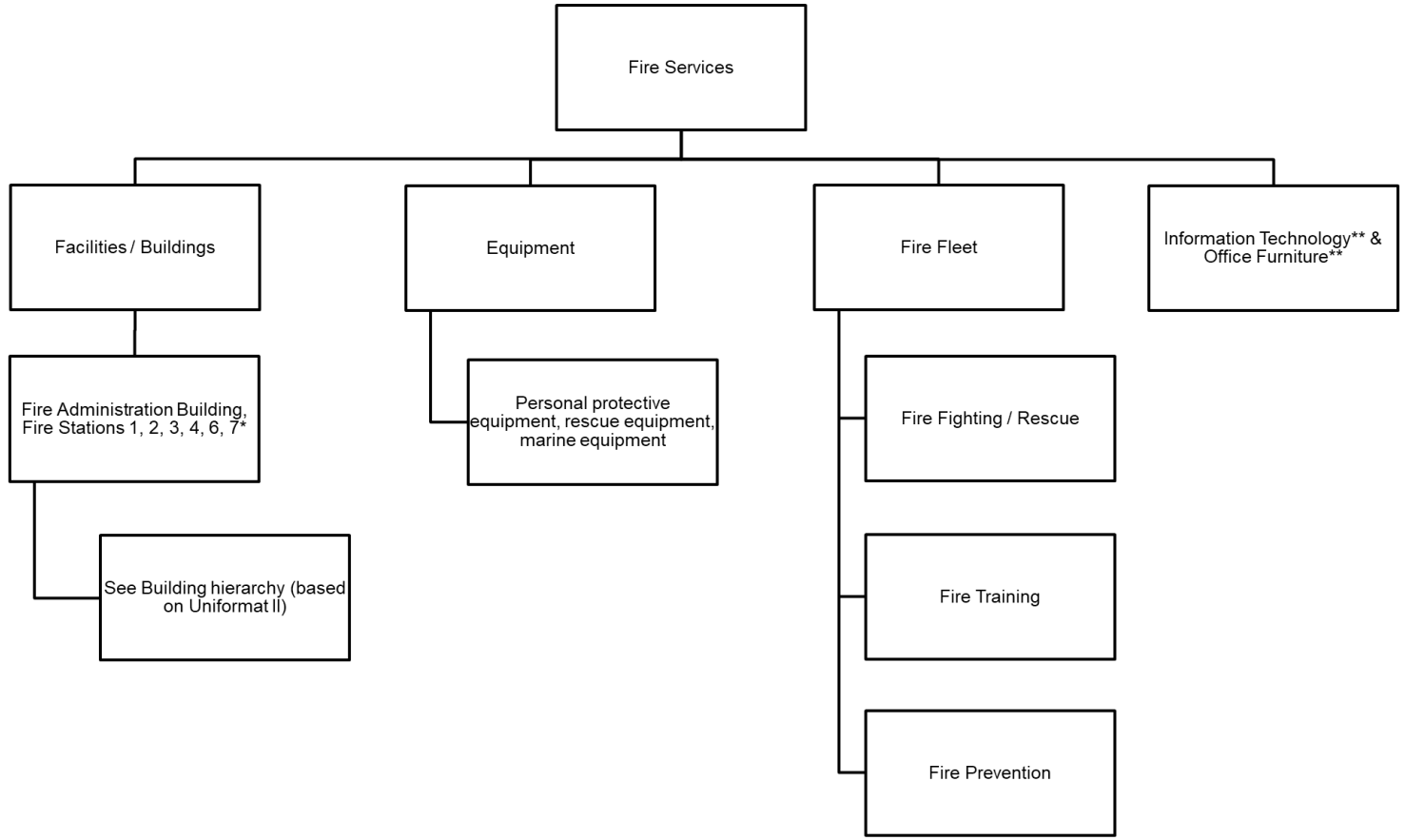
Figure D-13: Asset Hierarchy – Cultural Services



* None identified in 2024 Non-Core AM Plan.

** These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

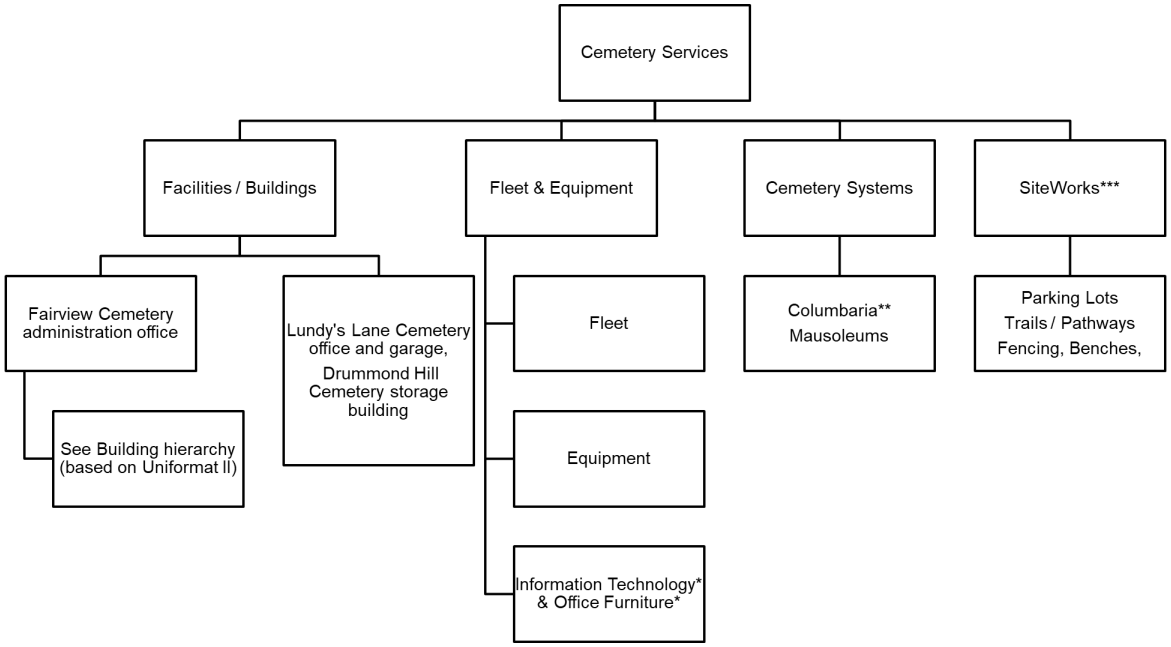
Figure D-14: Asset Hierarchy – Fire Services



* City does not own Fire Station 5 facility.

** These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

Figure D-15: Asset Hierarchy – Cemetery Services



* These assets reported under Municipal Administration in 2024 Non-Core AM Plan.

** In 2024 Non-Core AM Plan, Stamford Green Cemetery Columbaria were reported with Cemetery Facilitis / Buildings.

*** In 2024 Non-Core AM Plan, these were included as building site works or not reported due to lack of data.

Figure D-16: Asset Hierarchy – Building Hierarchy based on Uniformat II

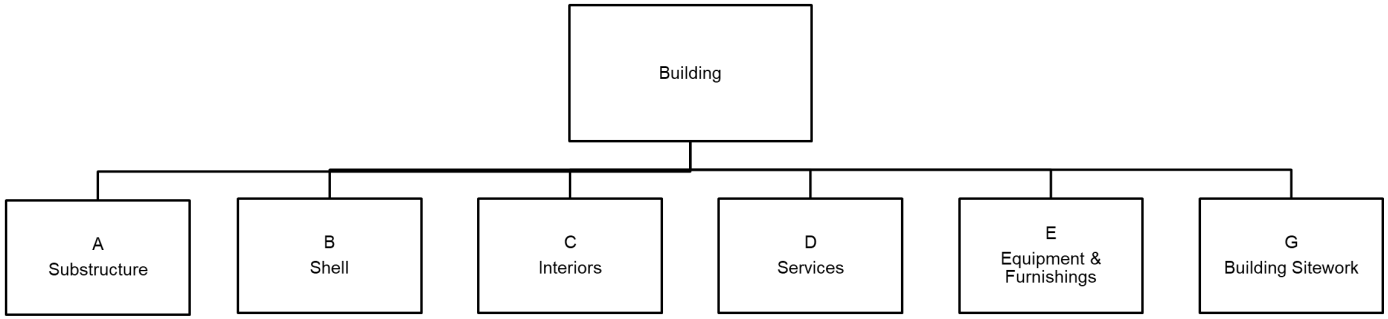
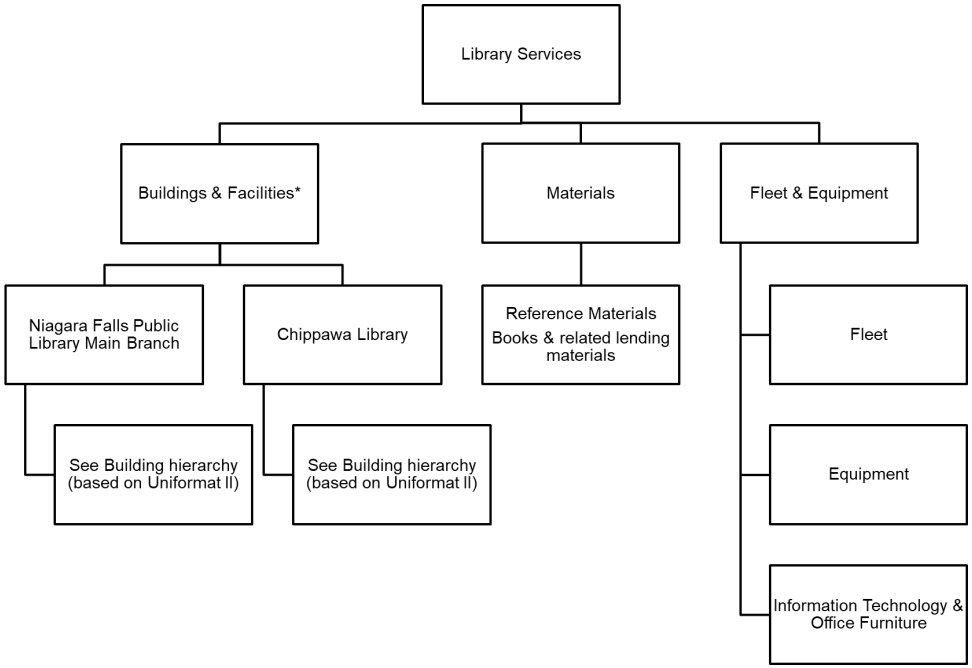
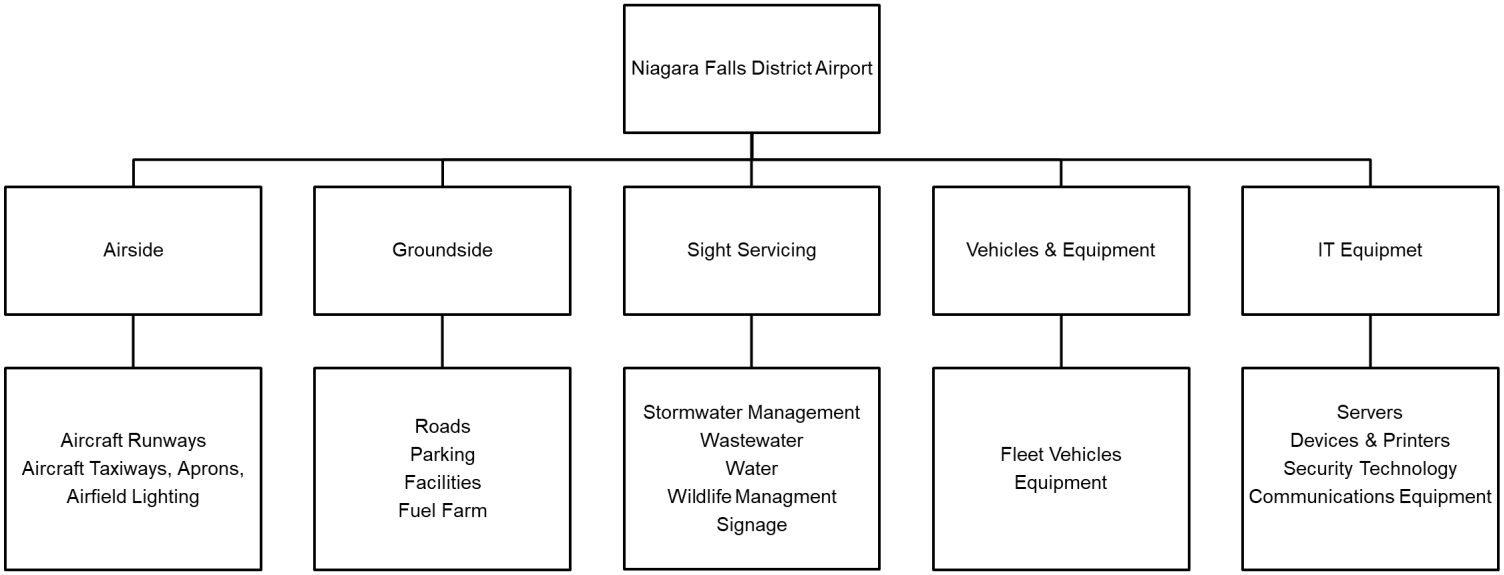


Figure D-17: Asset Hierarchy – Library Services



* Stamford Centre Library facility is rented (not owned by the City). Community Centre Library facility is reported as part of the MacBain Community Centre facility.

Figure D-18: Asset Hierarchy – Niagara District Airport



Appendix E – Inventory Overview

This Appendix presents the asset inventories for:

- Transportation Services
- Parks and Trails
    - Parks Services
    - List of Parks
    - Trail Network
- Natural Assets
- Municipal Administration
- Recreation Services
- Cultural Services
- Fire Services
- Cemetery Services

Table E-1: Asset Inventory – Transportation Services

Row	Asset Class	Total Qty	Asset Type/Description	Qty	Sub Class	Qty
1	Beautification & Street Furniture	725	Bench	94		
			Bike Rack	49		
			Garbage Cans	290		
			Monument/Memorial	7		
			Cig butt holder	1		
			Flower Bed	8		
			Flower pots	127		
			Fountain	1		
			Raised Flower bed	8		
			Sitting Area	5		
			Tree Cage & Grate	127		
			Tree Grate	8		
2	Streetlights	10,778	Streetlights (Support)	6251		
			Streetlights (Fixture)	10778		
3	Architectural Features	43	Advertising Board	3		
			Banner Pole	20		
			Clock	2		
			Flag Pole	1		
			Overhead Arches	9		
			Signage	8		
4	Barriers	297	Barricade	2		
			Fence / Wall	18		
			Guide Rail	211		
			Jersey Barrier	16		
			Pedestrian Rail	24		
			Retaining Wall	26		
5	Signage	2745	Information	379	Directional Guide Signs	341
					Route Markers	34
					Wayfinding Master Plan Signs	3
					Welcome to Niagara Falls Historical Village of Chippawa	1
			Regulatory	728	Right-of-Way Control Signs	216
					Road Use Control Signs	494
					Miscellaneous Control Signs	18
			Warning	1,637	Physical Conditions Warning Signs	1450
					Traffic Regulations Ahead Signs	90

Row	Asset Class	Total Qty	Asset Type/Description	Qty	Sub Class	Qty
					Pedestrian and Intermittent Hazard Signs	90
					Warning Signs	7
			Other (Fire Route)	1		
6	Fleet	97	0.5 Tonne Pick-Up	15		
			0.75 Tonne Pick-Up	1		
			1.0 Tonne Pick-Up	17		
			1.5 Tonne Pick-Up	1		
			2.0 Tonne Pick-Up	1		
			Car	1		
			Cargo Van	2		
			SUV	3		
			Truck	27		
			Truck (Street Sweeper)	2		
			WEGO Bus	27		
7	Equipment	46	Air Jack Hammer	1		
			Construction Equipment	4		
			Construction Vehicle	5		
			Construction Vehicle Misc.	4		
			Cutting Equipment	8		
			Mower	13		
			Outdoor Equipment	2		
			Plow	8		
			Pneumatic Medium Breaker	1		
8	Facilities	1	Municipal Service Centre West			
9	Parking Lots	17	Asphalt (sqm)	25,805		
			Curb (m)	1,850		
			Lighting (Support)	46		
			Lighting (Fixture)	68		
			Guardrail	710		
			Catch Basins	28		
			Signage	238		
10	Parking Meter	269	Parking Meter	182		
			Parking Meter - Pole	87		
11	Traffic Calming	101	Have not added the assets already included in core AMP			
12	Traffic Control	41	Flasher	15		

Row	Asset Class	Total Qty	Asset Type/Description	Qty	Sub Class	Qty
			Pedestrian Crossover with RRFB	1		
			Radar Speed Board	5		
			Train Sensor	14		
			Speed Cushion	6		
13	Traffic Signals	49	Poles	49		
			Control Cabinet	49		
			Power Supply	49		
			Junction Boxes	49		
			Signals	49		
			Conductors	49		
			Vehicle detection	49		
			Ped detection	49		

Table E-2: Asset Inventory – Parks and Trails, Parks Services

Row	Asset Class	Total Qty	Asset Subclass	Qty
1	**Amenities/Furniture**	**872**	Bench (Fixed)	370
			Bench (Movable)	1
			Bike Rack	67
			Bike Repair Station	2
			Bleacher (Aluminum)	43
			Bleacher (Wood)	123
			Dog Water Fill Station	1
			Flagpole	12
			Garbage Can	2
			Irrigation System	1
			Picnic Table (Fixed)	191
			Picnic Table (Movable)	29
			Trash Receptable	27
			Water Standpipe	2
			Watering Station	1
2	**Aquatic Features**	**19**	Boat dock	2
			Boat launch	2
			Fountain	1
			Shower Area	1
			Swimming Pool	5
			Wading Pools & Splash Pads	8
3	**Barriers**	**73**	Retaining Wall	73
4	**Equipment**	**4**	Sea Container	3
			Multi Purpose Net	1
5	**Facilities**	**47**		
6	**Fleet**	**9**		
7	**Ice Pads**	**6**		
8	**Parkland**	**78**	Pathways (linear length-m)	21849
			Raised Garden Bed	10
9	**Playgrounds**	**150**	Ball Toss Game	1
			Multi Purpose Net	1
			Play Structure	75
			Play Structure Surface	73
10	**Public Art**	**14**		
11	**Recreation Spaces**	**164**	Ball Diamond	38
			Basketball	29
			Batting Cage	2
			Bocce	4

Row	Asset Class	Total Qty	Asset Subclass	Qty
			Cricket Pitch	1
			Dog Park	3
			Model Airplane Flying	1
			Skateboard Park	2
			Soccer	3
			Soccer/Football	44
			Tennis	35
			Volleyball	1
			Walking/Running Track	1
12	**Signage/Wayfinding**	**463**		
13	**Site Works**	**1956**	Bollard (Concrete)	4
			Bollard (Metal)	66
			Bollard (Wood)	952
			Chain Link Fence	1
			Curb (Formed)	15
			Curb (Precast)	208
			Electronic Score Board	1
			Elevated Viewing Deck	1
			Fencing	82
			Gate	44
			Grassed Area - Winter Skating Pond	1
			Irrigation System	12
			Lightning	488
			Parking Lot	38
			Pedestrian Bridge	3
			Plaza	1
			Railing	3
			Stairway	36

Table E-3: Asset Inventory – List of Parks

Row	Name
1	A G Bridge Park
2	A J Mckinley Park
3	Alexander Park
4	Alpine Park
5	Althea Park
6	Baden Powell Park
7	Balmoral Park
8	Bambi Park
9	Brookfield Park
10	Butternut Park
11	C B Wright Park
12	C W Palmer Park
13	Carolyn Park
14	Centennial Square (in front of City Hall)
15	Cherryhill Park
16	Chippawa Boat Ramp Park
17	Chippawa Lions Park
18	Chippawa West Park
19	Coronation Park
20	Corwin Park
21	Crimson Park
22	Crowland Park
23	Cummington Square
24	Deerfield Park
25	Don W Johnson Park
26	E E Mitchelson Park
27	Ellis Park
28	Empire Park
29	F H Leslie Park
30	F J Miller Park
31	Fern Park
32	Fernwood Park
33	Firemens Park
34	Front Street Public Dock
35	Garner Park
36	George Bukator Park
37	Glengate Park
38	Glenview Park
39	Grey Robinson Park
40	Gustavus Munro Park
41	Hackberry Trail - Hackberry Park
42	Hennepin Park

Row	Name
43	Heritage Park
44	John N Allan Park
45	Kalar Sports Park
46	Kitchener Park
47	L B Pearson Park
48	Larry Delazzer Nature Park
49	Lind Sommerville Park
50	Lundy's Lane Battlefield Park
51	M F Ker Park
52	Mac Bain Centre
53	Maple Street Park
54	Meadowvale Park
55	Mount Carmel Park
56	Mount Forest Park
57	Mulhern Park
58	Niagara Falls Bark Park
59	Niagara Falls Lions Park
60	Oakes Park
61	Ontario Park
62	Patrick Cummings Sports Park
63	Preakness Park
64	Prince Charles Park
65	Prince Edward Park
66	Riverview Park
67	Robert F Keighan Park
68	Rosberg Family Park / Olympic Torch Trail / Part of Parking Lot 06 (across from City Hall)
69	Royal Manor Park
70	Russell Park
71	Shirley Park
72	Solar Park
73	Stamford Green Park
74	Stamford Lions Park
75	Stonefield Park
76	Theresa Park
77	Valour Park
78	W L Houck Park
79	Warren Woods
80	Weaver Park
81	Westfield Park
82	Wilson Park
83	Alker Green Space
84	Charnwood Park
85	Edgewood Woodlot Park

Row	Name
86	Fernwood Woodlot Park
87	Mewburn Road Recreation Area -
88	Montrose Road Business Park Woodlot
89	Paddock Park
90	Sassafras Trail
91	Shriners Woodlot Park
92	Walker Park
93	Willick Road Woodlot
94	Willoughby Centennial Park

Table E-4: Asset Inventory – Parks and Trails, Trail Network

Row	Asset Class	Total Qty	Asset Subclass	Qty
1	Amenities/Furniture	69	Bench (Fixed)	42
			Bike Rack	3
			Picnic Table	9
			Trash Receptable	10
			Fitness Equipment	5
2	Facilities	3	Pavilion	3
3	Parkland	16	Trails	13
			Raised Garden Bed	3
4	Signage/Wayfinding	207		
5	Site Works	97	Bike Pump	1
			Bike Repair	1
			Bollard (Metal)	23
			Bollard (Wood)	5
			Curb (Formed)	1
			Curb (Precast)	17
			Equipment	2
			Fencing	6
			Gate	30
			Irrigation System	1
			Parking Lot	5
			Railing	1
			Retaining Wall	2
			Stairs	2

Table E-5: Asset Inventory – Natural Assets

Row	Asset Class	Total Qty	Asset Type/Category/Species	Qty
1	Equipment	35	Batteries	5
			Battery Chargers	3
			Blowers	4
			Chainsaws	18
			Pole Saws	4
			Stump Grinder	1
2	Fleet	5	0.5 tonne pick-up truck	2
			Aerial	3
3	Trees	30899	Alder Species	3
			Amur Corktree	2
			Apple Species	80
			Ash Blue	2
			Ash European	20
			Ash Green	403
			Ash Species	62
			Ash White	65
			Aspen Largetooth	1
			Aspen Trembling	14
			Autumn Blaze	867
			Basswood	151
			Beech American	39
			Beech Blue	16
			Beech European	109
			Beech Species	12
			Birch Gray	7
			Birch Himalayan	19
			Birch River	14
			Birch Weeping	5
			Birch White	177
			Birch Yellow	1
			Birch Species	10
			Black Gum	2
			Buckeye Ohio	6
			Butternut	29
			Catalpa northern	92
			Cedar Eastern White	367
			Cherry Black	59
			Cherry Choke	12

Row	Asset Class	Total Qty	Asset Type/Category/Species	Qty
			Cherry Choke Schubert	24
			Cherry Cornelian	4
			Cherry Pin	6
			Cherry Purple Leaf	5
			Cherry Species	179
			Chestnut Chinese	7
			Chestnut Sweet	2
			Coffeetree Kentucky	73
			Cottonwood Eastern	91
			Crabapple Species	285
			Devils Walkingstick	2
			Dogwood Japanese Pagoda	28
			Elderberry	2
			Elm Accolade	1
			Elm American	149
			Elm Pioneer	1
			Elm Red	10
			Elm Scotch	2
			Elm Siberian	33
			Elm Species	35
			Fir Balsam	28
			Fir Colorado	5
			Fir Douglas	4
			Fir Species	89
			Flowering Cherry	1
			Forest Pansy Redbud	20
			Ginkgo	328
			Golden Chain Tree	2
			Goldenrain Tree	3
			Hackberry	254
			Hawthorn	9
			Hazel Turkish	3
			Hemlock	10
			Hickory Bitternut	25
			Hickory Shagbark	61
			Hickory Shellbark	1
			Hickory Species	7
			Hoptree	3
			Hornbeam European	73

Row	Asset Class	Total Qty	Asset Type/Category/Species	Qty
			Horsechestnut Common	75
			Ironwood	15
			Juniper	50
			Katsura Tree	2
			Larch Eastern	16
			Larch European	13
			Lilac Japanese	98
			Linden Littleleaf	3829
			Locust Black	109
			Locust Honey	3620
			Locust Honey Shademaster	171
			Locust Honey Sunburst	435
			Magnolia Species	66
			Maple Amur	14
			Maple Black	12
			Maple Canadian Red	247
			Maple Crimson King	653
			Maple Freeman	966
			Maple Hedge	46
			Maple Japanese	74
			Maple Manitoba	154
			Maple Norway	6157
			Maple Paperbark	8
			Maple Red	855
			Maple Royal Red	5
			Maple Silver	1209
			Maple Species	47
			Maple Striped	6
			Maple Sugar	697
			Maple Sycamore	184
			Maple Tatarian	1
			Mountain Ash American	15
			Mountain Ash European	16
			Mountain Ash Species	2
			Mulberry Red	10
			Mulberry Species	10
			Mulberry White	126
			Nootka False Cypress	38
			Oak Bur	226

Row	Asset Class	Total Qty	Asset Type/Category/Species	Qty
			Oak English	169
			Oak Pin	210
			Oak Red	669
			Oak Species	46
			Oak Swamp white	111
			Oak White	148
			Olive Russian	5
			Osage Orange	1
			Pear Callery	170
			Pear Species	79
			Pine Austrian	537
			Pine Jack	18
			Pine Mugo	1
			Pine Red	188
			Pine Scotch	63
			Pine Species	46
			Pine White	150
			Plane London	278
			Plum Yew Chinese	1
			Poplar Lombardy	1
			Poplar Silver/White	4
			Poplar Species	2
			Redbud Eastern	204
			Redwood Dawn	33
			Saltcedar	14
			Sassafras	6
			Serviceberry	54
			Siberian Pea	1
			Smoketree	14
			Spruce Black	4
			Spruce Colorado	411
			Spruce Dwarf Alberta	1
			Spruce Norway	162
			Spruce Red	2
			Spruce Species	176
			Spruce White	498
			Strawberry Tree Japanese	2
			Sumac Staghorn	2
			Sweetgum	25

Row	Asset Class	Total Qty	Asset Type/Category/Species	Qty
			Sycamore American	597
			Tree of Heaven	38
			Tulip-tree	325
			Unknown Species	233
			Walnut Black	275
			Walnut English	42
			Willow Black	7
			Willow Corkscrew	14
			Willow Species	38
			Willow Weeping	17
			Willow White	2
			Yellowwood	9
			Yew Canadian	5
			Zelkova Japanese	3

Table E-6: Asset Inventory – Municipal Administration

Rows	Asset Class	Total Qty	Asset Subclass	Qty	Asset Type	Qty
1	Facilities	4	City Hall Intercity Bus Terminal Municipal Service Centre East Wayne Thomson Building			
2	Fleet	68	0.25 Tonne Pick-Up	2		
			0.5 Pick-Up	2		
			0.5 Tonne Pick-Up	8		
			0.75 Tonne Pick-Up	5		
			1.0 Tonne Pick-Up	2		
			1.5 Tonne Pick-Up	3		
			2.0 Tonne Pick-Up	3		
			Aerial	1		
			Car	12		
			Cargo Van	22		
			Suv	4		
			Truck	3		
			Van	1		
3	Information Technology	2164	Phones & Tablets	802	Cell Phones	232
					Desk Phones	423
					Tablet	147
			Computers & Docking Stations	568	Computers	501
					Docking Stations	67
			Monitors	665	Monitor 19in	133
					Monitor 22in	408
					Monitor 24in	86
					Monitor 27in	38
			Networking	28	Servers	28
			Software	101		

Table E-7: Asset Inventory – Recreation Services

Row	Asset Category	Total Qty	Asset Type	Qty
1	Facilities	11	Chippawa Memorial Arena Gale Centre MacBain Community Centre Buildings at Patrick Cummings Memorial Sports Centre (7)	
2	Fleet	3	Pick-Up Trucks	3

For future AM Plan:

- Chippawa Town Hall
- Niagara Falls Armoury
- Sea Cadets Building
- St John Ambulance
- Willoughby Township Hall

Table E-8: Asset Inventory – Culture Services

Row	Asset Category	Total Qty	Asset Type	Qty
1	Facilities	4	Battleground Hotel Museum Niagara Falls History Museum Fire Hall Theatre Niagara Falls Exchange	
2	Equipment	37		

Table E-9: Asset Inventory – Fire Service

Row	Asset Class	Total Qty	Asset Type	Qty	Category	Qty
1	Equipment	231	Equipment	161	Battery	1
					Compressors	2
					Cutting Equipment	73
					Equipment	1
					Generator	7
					Heater	2
					Marine Equipment	1
					Mower	6
					Outdoor Equipment	9
					Pump	1
					Safety Equipment	58
			Specialized Equipment	70	Compressors	2
					Cutting Equipment	1
					Equipment	12
					Generator	1
					Heater	1
					Marine Equipment	16
					Safety Equipment	36
					Trailer	1
2	Facilities	8				
3	Fleet	42	0.75 Tonne Pick-Up	2		
			Aerial	2		
			Boat	3		
			Car	13		
			Pump Truck (Fire)	12		
			Tanker	2		
			Trailer	4		
			Truck	4		

Table E-10: Asset Inventory – Cemetery Services

Row	Asset Class	Total Qty	Asset Type	Qty	Asset Subtype/Description	Qty
1	Cemetery Systems	25	Commemorative Element	25	Arch	1
					Bench	1
					Columbaria	1
					Monument	22
2	Equipment	108	60" Side Discharge Mower Deck	1		
			Air Compressor	1		
			Backhoe	2		
			Backpack Blower	15		
			Battery	20		
			Battery Charger Unit	5		
			Broadcast Spreader	1		
			Bucket	1		
			Bucket Arms	1		
			Chainsaw	1		
			Concrete Saw	1		
			Debris Sweeper	1		
			Float	1		
			Floor Jack	1		
			Generator	3		
			Hedge Trimmer	2		
			Leaf Blower	5		
			Mower	5		
			Mower Deck	6		
			Pole Saw	3		
			Pressure Washer	1		
			Rototiller	1		
			Sander/Salter	1		
			Sawzall	1		
			Shop Vac	1		
			Snow Blower	4		
			Tractor	2		
			Trailer Auger	1		
			Turf Vac	2		
			V-Plow	3		
			Water Pump	2		
			Weed Whip / Bike Handle Trimmer	13		
3	Facilities	6	Fairview Cemetery administration building Drummond Hill Cemetery office and garage			

Row	Asset Class	Total Qty	Asset Type	Qty	Asset Subtype/Description	Qty
			Lundy's Lane Battleground Cemetery storage Lundy's Lane Cemetery Office/Garage Stamford Green columbaria Lundy's Lane Battleground Cemetery washroom			
4	Fleet	12	1 Ton Pickup Truck	1		
			Compact Dumper	1		
			Dump Truck	1		
			Haul All	1		
			Pickup Truck	1		
			SUV	1		
			UTV	6		
5	Site Works	See details on the right	Amenities/Furniture	See details on the right	Bench	5
					Fence (m)	370.82
					Flagpole	1
					Picnic Table	1
					Trash receptacle	17
			Signage	28	Wood Information Sign	22
					Metal Information Sign	3
					Bylaw Sign	2
					Rules and Regulation	1
			Site Works	See details on the right	Fence (m)	1193.36
					Flowerpot	2
					Other - Fuel Tanks	2
					Trails, Pathways, Parking Lots (sqm)	22186.31