DILLON CONSULTING

GEORGINA

Town of Georgina

Asset Management Plan

Non-Core Assets

Final Report June 2024

Executive Summary

Introduction

Dillon Consulting Limited (Dillon) was engaged by the Town of Georgina (the Town) to develop an Asset Management Plan (AMP) for its non-core municipal infrastructure. The AMP has been developed in accordance with the requirements set forth by O. Reg. 588/17, specifically developing an AMP for other assets (i.e., non-core assets) that is approved by Council and publicly available by July 1st, 2024.

The scope of the AMP includes assets spanning eight service categories as presented in Table E-1.

Table E-1: The Town's Non-core Infrastructure Assets

Service Category	Asset Classes
Facilities	Corporate Offices, Community Centres and Halls, Fire Stations, Libraries, Park Washrooms, Picnic Shelters, Recreational, Booths, and Operations Yards
Parks	Neighbourhood Parks, Community Parks, Baseball Diamonds, Basketball Courts, Beach Volleyball Courts, Soccer Pitches, Splash Pads, Tennis Courts, Bleachers, Picnic Shelters, Foot Bridges, Drinking Water, Harbour Dock, and Parking Areas
Fleet	Light Vehicles, Heavy Vehicles, ATVs, Trailers, and Boats
Equipment	Fleet Equipment, Roads Equipment, Water Equipment, Facilities Equipment, Parks Equipment, Recreation and Culture Equipment, Administrative Equipment, Public Works Equipment, Fire and Emergency Equipment, and Library Services Equipment
Active Transportation	Multi-Use Paths
Roadway Appurtenances	Priority Signs, Regulatory Signs, Warning Signs, and Informational Signs
Urban Forestry	Median, Open/Unrestricted, Raised/Planted, Tree Lawn, Woodlot, and Other Trees
IT Assets	Facility Equipment, Tower Sites, Wireless Links, On-Premises Servers, Endpoint Tech, Security Systems, Network/Security Infrastructure, Telephone Systems, Perpetual Software, Subscription-Based Software, and Software Solutions

The objective of the AMP is to provide a financial and technical guide for overseeing the Town's non-core infrastructure. It seeks to enhance the Town's ability to attain maximum benefits from its assets with proactive planning of expenditures while concurrently enhancing the quality of services provided to its community members and staff.

Four technical memorandums were prepared during the project, each dedicated to foundational asset management concepts, and form the main chapters of the AMP including:

- State of the Infrastructure: The primary goal of this chapter is to understand and document the inventory of all infrastructure assets considered in the AMP. This includes summarizing how asset information is organized across service categories and informative asset metrics such as age, condition, expected useful life, remaining useful life, and replacement cost.
- Levels of Service (LOS): This chapter aims to clearly define what level of service is expected from the assets within each service category, which primarily involves considering both customer and technical (e.g., regulatory) requirements. The chapter outlines performance measures to analyze current levels of service and identifies gaps in achieving desired levels of service.
- Asset Management Strategy: This chapter documents the risk model employed for the Town's non-core infrastructure and the existing state of operations and maintenance (O&M). It also establishes strategies for forward looking O&M and condition assessments across service categories.
- Financial Strategies: This chapter provides a summary of capital reinvestment requirements for each asset category over a 10-year and a 25-year horizon followed by a summary of anticipated capital and O&M funding needs.

State of the Infrastructure

Table E-2 provides a high-level summary of the Town's non-core asset inventory, including the quantity of assets and total replacement values. The total replacement value of the entire asset inventory is approximately $470 M.

Table E-2: Asset Inventory Summary – All Non-Core Assets

Service Category	Quantity	Percentage of Total (by quantity)	Total Replacement Value	Percentage of Total (by replacement value)
Facilities	83	0.21%	$324,120,000	69.00%
Parks	227	0.58%	$65,785,000	14.00%
Fleet	122	0.31%	$27,351,000	5.82%
Equipment	1,842	4.68%	$21,097,000	4.49%
Active Transportation	25	0.06%	$5,386,000	1.15%
Roadway Appurtenances	3,960	10.06%	$1,980,000	0.42%
Urban Forestry	30,934	78.60%	$18,561,000	3.95%
IT Assets	2,165	5.50%	$5,456,000	1.16%
Total	39,358	100.00%	$469,736,000	100.00%

Tables E-3 through Table E-10 provide a summary of the sub-group and assets for each service category.

Table E-3: Asset Inventory Summary - Facilities

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Facilities	Buildings	Corporate Offices	4	$76,539,000
		Community Centres and Halls	18	$64,775,000
		Fire Stations	4	$16,312,000
		Pioneer Village	17	$7,122,000
		Libraries	3	$16,328,000
		Park Washrooms	5	$4,614,000
		Picnic Shelters	5	$1,408,000
		Recreational	12	$112,914,000
		Booths	3	$2,146,000
		Operation Yards	12	$21,962,000
		Facilities Total	83	$324,120,000

Table E-4: Asset Inventory Summary - Parks

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Parks	Public Recreation	Neighbourhood Parks	44	$11,000,000
		Community Parks	11	$15,400,000
	Sports Fields	Baseball Diamonds	16	$19,200,000
		Basketball Courts	6	$900,000
		Beach Volleyball Courts	3	$30,000
		Soccer Pitches	11	$3,900,000
		Splash Pads	2	$600,000
		Tennis Courts	5	$850,000
		Pickle Ball Courts	9	$575,000
	Park Amenities	Bleachers	47	$564,000
		Harbour Dock	2	$1,500,000
		Drinking Water	7	$420,000
		Foot Bridges	7	$2,000,000
		Picnic Shelters	10	$1,500,000
	Transportation Facilities	Parking Areas	47	$7,346,000
		Parks Total	227	$65,785,000

Table E-5: Asset Inventory Summary - Fleet

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Fleet	Vehicles	Light Vehicles	44	$6,231,000
		Medium Vehicles	34	$4,025,000
		Heavy Vehicles	14	$13,050,000
		Trailers	28	$3,095,000
		Boats	2	$950,000
		Fleet Total	122	$27,351,000

Table E-6: Asset Inventory Summary - Equipment

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Equipment	Operations & Infrastructure Equipment	Fleet Equipment	15	$580,000
		Roads Equipment	59	$4,516,000
		Water Equipment	12	$456,000
	Community Services Equipment	Facilities Equipment	575	$1,942,000
		Parks Equipment	867	$9,057,000
		Recreation and Culture Equipment	27	$1,033,000
	General Equipment	Administrative Services Equipment	14	$111,000
		Public Works Equipment	83	$2,600,000
	Fire & Emergency Equipment		183	$750,500
	Library Services Equipment		7	$51,500
		Equipment Total	1,842	$21,097,000

Table E-7: Asset Inventory Summary – Active Transportation

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Active Transportation	Multi-Use Paths	Hard Surface (Asphalt/Concrete)	15	$3,015,000
		Crushed Limestone	3	$229,000
		Gravel	1	$57,000
		Natural	4	$1,119,000
		Various	2	$966,000
		Active Transportation Total	25	$5,386,000

Table E-8: Asset Inventory Summary – Roadway Appurtenances

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Roadway Appurtenances	Roadway Signage	Priority Signs	1,043	$521,500
		Regulatory Signs	2,025	$1,012,500
		Warning Signs	887	$443,500
		Informational Signs	5	$2,500
		Roadway Appurtenances Total	3,960	$1,980,000

Table E-9: Asset Inventory Summary – Urban Forestry

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
Urban Forestry	Urban Forestry	Median	78	$47,000
		Open/Unrestricted	7,669	$4,601,000
		Raised/Planted	5	$3,000
		Tree Lawn	11,081	$6,649,000
		Woodlot	655	$393,000
		Other	11,446	$6,868,000
		Urban Forestry Total	30,934	$18,561,000

Table E-10: Asset Inventory Summary – IT Assets

Asset Category	Asset Sub-Group	Asset	Quantity	Total Replacement Value
IT Assets	Broadband	Facility Equipment	10	$193,000
		Tower Sites	14	$393,000
		Wireless Links	13	$192,000
	Hardware	On-Premises Servers	29	$376,000
		Endpoint Tech	1,018	$752,000
		Security Systems	17	$306,000
		Network/Security Infrastructure	163	$609,000
		Telephone Systems	11	$206,000
	Software	Perpetual Software	86	$241,000
		Subscription-Based Software	795	$689,000
		Software Solutions	9	$1,499,000
		IT Assets Total	2,165	$5,456,000

The asset information was compiled into an asset inventory which was used to report on the condition ratings for the assets. Where condition assessment information was not available, a straight-line asset deterioration allowance was used to calculate the 2023 condition ratings based on remaining useful life. To determine the remaining useful life, a hybrid approach was based on the following information: 1) the age of the asset; 2) expected useful life (EUL); and 3) the last known condition rating assigned to the asset.

Figure E-1 summarizes the condition of assets across each service category based on asset inventory data by count. Approximately 55% of the assets (by count) are in very good condition (6%) and good condition (49%), representing 21,721 assets in the inventory.

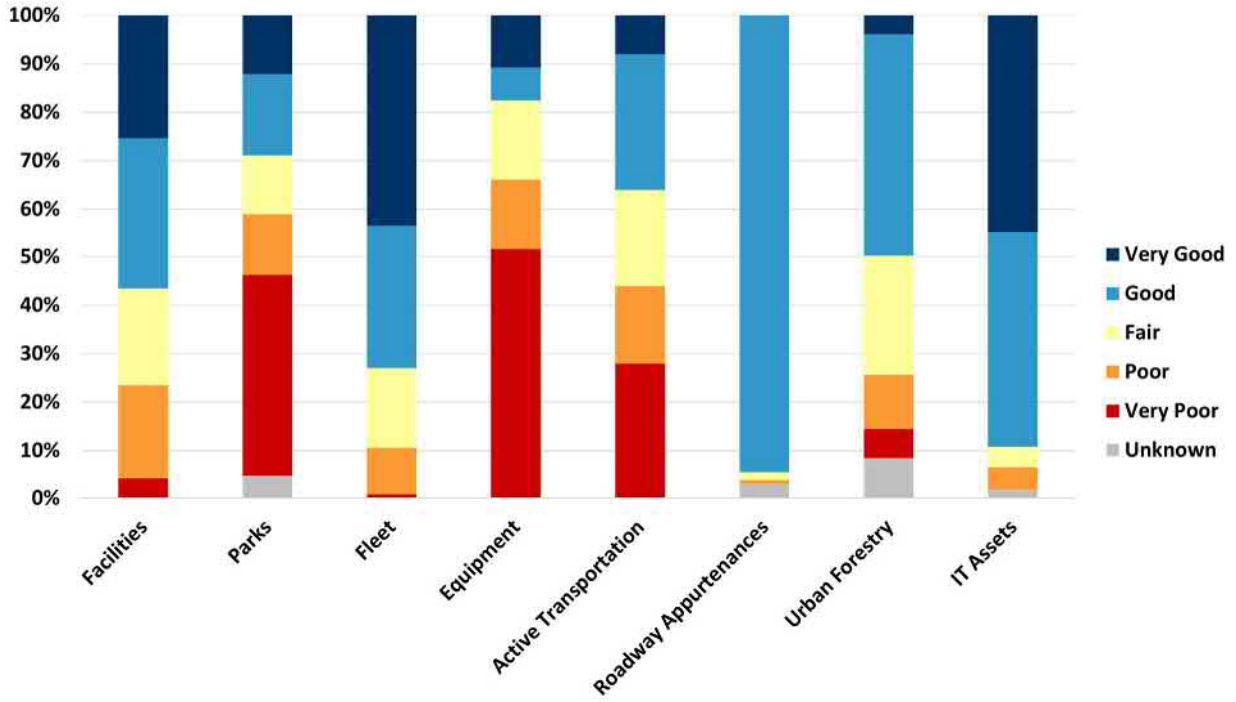


Figure E-1: Asset Service Category Condition Summary (by Count)

For greater detail on the Town's state of the infrastructure across each service category please refer to Section 2.0.

Levels of Service (LOS)

Levels of Service (LOS) measure the services the Town provides to its community through various assets, which influence decisions about those assets based on their impact on the community and the environment. The LOS framework is crucial in advancing the Town's strategic goals. See the Levels of Service framework in Figure E-2.

Levels of Service (LOS) report on and measure the services the Town provides to the community through the use of infrastructure assets and natural assets. The application of the LOS framework plays an important role in supporting the advancement of the Town's strategic vision, mission, and goals The line of sight or alignment of LOS with the overarching goals, as outlined in the Town's Strategic Plan is an essential concept in asset management.

Figure E-2: Levels of Service Framework

The LOS includes the qualitative descriptions and quantitative measures of what the asset is technically capable of delivering and reflect the impact of the municipality's asset management strategies on the performance of the assets or the quality or capacity of the services they provide.

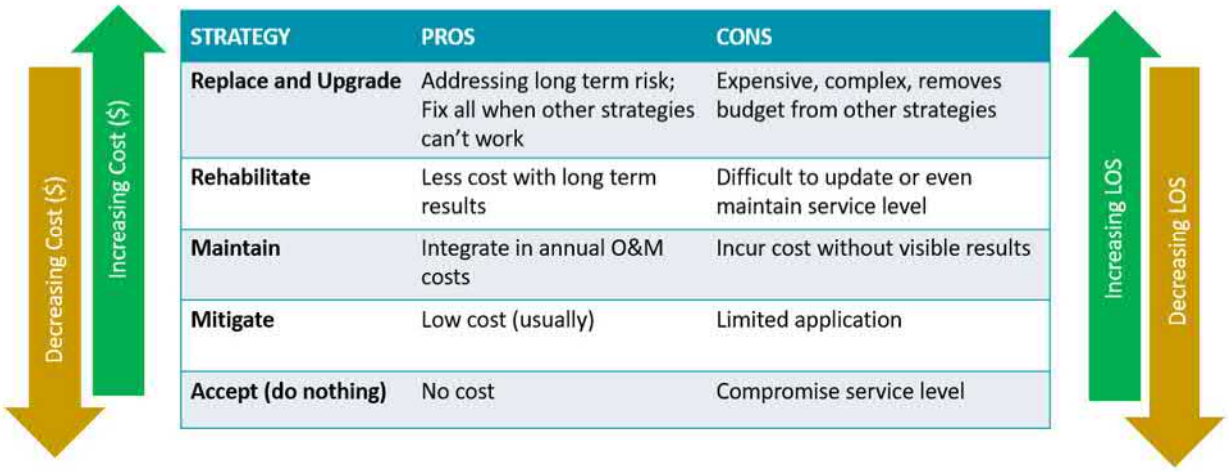
The developed LOS Framework will be used for future annual reporting, outlining current performance compared to targets, and will be regularly reviewed and updated. Each asset category has identified stakeholder interests and corresponding LOS objectives. The Town's service parameters and LOS objectives for each of the service categories is presented in Table E-11. For greater detail on the Town's LOS across each service category, including the technical LOS and the community LOS, please refer to Section 3.0.

Table E-11: Parameter and LOS Objectives for Each Service Category

Service Category	Parameter	LOS Objective(s)
1. Facilities	Quality & Availability	• To provide an adequate supply of buildings and facilities that are fit for purpose for programming (available to the public) and administration (serving staff working environments and public meeting spaces). • To provide a safe, reliable, and well-maintained facilities. • To provide accessibility access to and within facilities.
2. Parks	Quality & Availability	• To provide an adequate supply of outdoor recreation spaces that are fit for purpose for programming (organized activities) and community activities (leisure).
3. Fleet	Quality & Reliability	• To provide safe, reliable, and well-maintained vehicles that are fit for purpose.
4. Equipment	Quality & Reliability	• To provide safe, reliable, and well-maintained equipment that is fit for purpose.
5. Active Transportation	Quality & Availability	• To provide an adequate supply of multi-use paths that are safe, well-maintained for community access and provides connectivity through the network.
6. Roadway Appurtenances	Quality & Reliability	• To provide signs that are present and reliable to communicate required messages.
7. Urban Forestry	Quality & Availability	• To provide adequate tree canopy coverage that promotes naturalization, air quality, shade, temperature reduction, noise attenuation, animal habitat, mental health benefits and carbon sink.
8. IT Assets	Quality & Reliability	• To provide IT assets that are fit for purpose and deliver the expected service to users and to provide reliable equipment to meet the needs of the Town.

Asset Management Strategy

The Town's asset management strategy considers how the assets deteriorate with time, what other factors contribute to reduced performance, applying a risk model to determine risk scores, and assessing operations and maintenance strategies to deliver expected performance and what investments are required (and when) to improve condition and extend the useful life of assets. Strategies to address risk are presented in Figure E-3.



STRATEGY	PROS	CONS
Replace and Upgrade	Addressing long term risk; Fix all when other strategies can't work	Expensive, complex, removes budget from other strategies
Rehabilitate	Less cost with long term results	Difficult to update or even maintain service level
Maintain	Integrate in annual O&M costs	Incur cost without visible results
Mitigate	Low cost (usually)	Limited application
Accept (do nothing)	No cost	Compromise service level

Figure E-3: Strategies to Address Risk

Risk Management Strategy

Risk management involves identifying and assessing potential risks and uncertainties while planning ways to avoid or mitigate risk from climate change, natural disasters, public safety threats, and aging assets. The goal of the risk model is to provide a structured framework for understanding and addressing risks that could impact the achievement of objectives.

The risk exposure formula is often expressed as the product of the probability of failure (PoF) and the consequence of failure (CoF). In risk management, this formula is commonly used to quantify the potential impacts of a risk event:

Risk Exposure = Probability of Failure x Consequence of Failure

The PoF represents the likelihood or chance that a particular risk event will occur. The CoF refers to the impact or severity of the risk event if it were to occur. CoF is assessed differently based on the service category.

In determining a risk score for each of the assets included in the asset inventory, a triple bottom line approach was taken and through workshops with Divisional Stakeholders the specific PoF and the CoF factors were established for each asset category based on the uniqueness of the assets and the services delivered by the assets.

Figure E-4 presents the risk scores of all non-core assets organized from highest risk score to lowest risk score across all eight service areas. Over two-thirds of the assets (70.3%) are in the low risk category, with under one-third in the medium-risk (29.5%). A very small percentage of assets are in the high-risk category (0.2%).

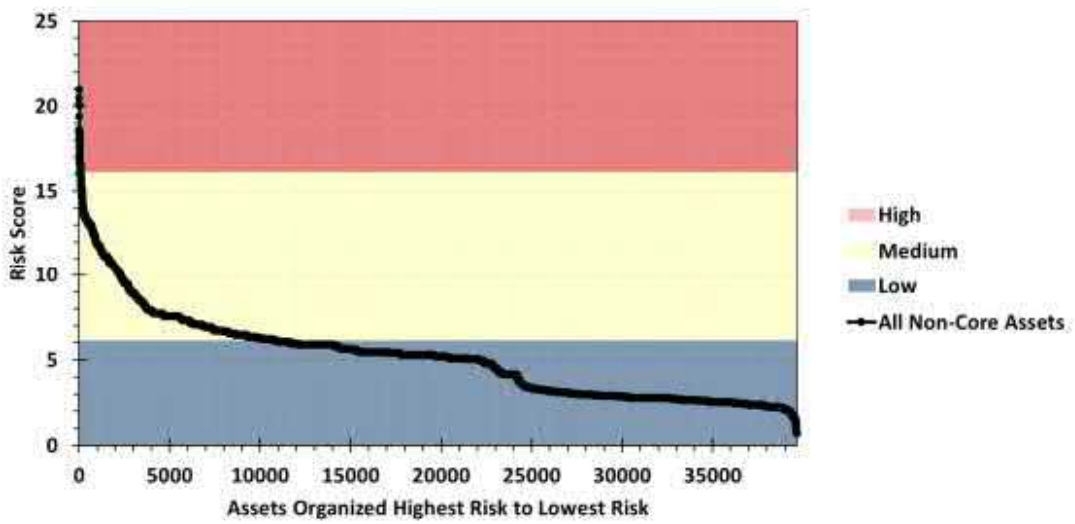


Figure E-4: Risk Profile (All Assets)

Further information on the risk approach, methodology and analysis is documented in Section 4.0. The Town's Conceptual Risk Model is presented in Appendix C.

Asset Investment Needs Forecasts

The asset portfolios for each of the service categories were assessed individually across three key investment types: operating and maintenance, condition assessments, and lifecycle replacements. Overall expenditure plans were developed in detail and summarized into annualized average expenditures for the purpose of comparing to financial affordability. See Table E-12 for summary of the annualized average investments needs for operating and maintenance, condition assessments and lifecycle replacements.

Table E-12: Annualized Average Investment Needs

Expenditure Category	Annualized Average (10 Year Period)	Funding Budget	Refer to Report Section
Operating and Maintenance	$22,778,110	Operating	Section 4.5
Condition Assessments	$817,163	Capital	Section 4.6
Lifecycle Replacements	$10,783,722	Capital	Section 5.1

For greater detail on the Town's asset management strategy across each service category please refer to Section 4.0.

Financial Analysis and Strategy

The financial analysis and strategy section identifies the annual cost of O&M and capital renewal reserve contributions required to delivery the services provided by the Town's non-core assets and describes how the Town could fund reinvestment needs.

Mitigating funding gaps require either an increase of funds available for infrastructure renewal or a reduction in service levels. The analysis in Section 5.2.1 and 5.2.2 describes the impacts of the project lifecycle costs on Town reserves under two different project scheduling scenarios, the impacts of increasing revenues, and recommends a phased-in approach to support taxpayer affordability and gradually close the infrastructure gap. A summary of the Town's infrastructure funding gap is shown in Table E-13 which reflects current available funding as well as the average annual O&M investment and capital contributions proposed to achieve financial sustainability.

Table E-13: The Town's Non-Core Municipal Infrastructure Funding Gap

Funding Budget	Current Annual Funding	Proposed Annual Funding	Annual Funding Shortfall
Capital	$7,313,796	$11,600,000	$4,286,203
Operating	$19,300,000	$22,776,110	$3,476,110

Please refer to Sections 5.2.1 and 5.2.2 for further details on the Town's infrastructure gap with strategies and scenarios to narrow the gap.

Continuous Improvement

There are 11 continuous improvement initiatives, including several that have been singled out as high priority, recommended for implementation over the next four years prior to the next iteration of the AMP. The summary of continuous improvement initiatives is presented below with recommendation in four categories of asset management:

1. State of the Infrastructure (SOTI)
    - 1.1. Adopt Global Unique Asset ID System for Assets
    - 1.2. Eliminate Pooled Asset Inventories
    - 1.3. Refine Asset Data
    - 1.4. Development of the Informational Sign Inventory
    - 1.5. Develop an Asset Condition Assessment Program

2. Levels of Service (LOS)
    2.1. Increase Tracking of LOS Metrics
3. Asset Management Strategies (AMS)
    3.1. Refine the Risk Framework
    3.2. Transition to a Centralized Database for Tracking of All O&M Activities and Costs
    3.3. Standardize Tracking of O&M Activities and Costs in Relation to Individual Assets
4. Financial Strategies (FAS)
    4.1. Periodically Assess Replacement Costs and Estimated Useful Lives
    4.2. Standardize Tracking of Labour for Completion of O&M Activities

For a detailed account of each initiative, along with guidance on their sequencing and execution, see Section 6.0.

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1.0 Introduction

Dillon Consulting Limited (Dillon) was engaged by the Town of Georgina (the Town) to develop a non-core Asset Management Plan (AMP). The AMP has been developed in accordance with the requirements set forth by O. Reg. 588/17 and includes foundational information related to asset management of the Town's Non-Core Asset Service Areas. The AMP is comprised of five sections after the introduction. The State of the Infrastructure (SOTI) chapter summarizes the current state of the non-core assets that are owned and maintained by the Town. The Levels of Service (LOS) chapter which discusses current LOS and proposed LOS for non-core assets; The Asset Management Strategy chapter aims to understand the risk associated with various assets, and how planning can mitigate these concerns. The Financial Analysis and Strategy chapter provides insights from an asset lifecycle model for each service category and further information funding sources and gaps. Finally, the Continuous Improvement section notes future improvement initiatives and provides an implementation plan for the Town to execute each initiative.

This plan has placed the importance of being comprehensive based on available information. A comprehensive report allows for a complete picture regarding the assets owned by the Town including the identification of all known assets and their inventory parameters based on available data. Therefore, it was determined that the accuracy of the data can be further developed and improved upon over time which is typical of a first iteration asset management plan. Asset management is a journey of continuous improvement.

1.1 Purpose

The "*Building Together: Guide for Municipal Asset Management Plans*" document released by the Ontario Ministry of Economic Development and Infrastructure in 2012 was a foundational document that set the stage for Municipal asset management practices in Ontario. The guide offers strategic advice on the systematic approach to planning, acquiring, operating, maintaining, renewing, replacing, and disposing of tangible capital assets. Further, the document encourages the use of best practices towards achieving sustainable infrastructure, maintaining quality of public services, financial management, and transparency in utilizing public resources.

On January 1st, 2018, a new provincial regulation came into force in Ontario known as O. Reg. 588/17 "*Asset Management Planning for Municipal Infrastructure*". The provincial mandate requires that all Ontario municipalities prepare and adopt comprehensive asset management plans. The regulation established phased requirements for municipalities to develop asset management plans in accordance with prescribed standards and guides. Three main requirements included 1) establishing an Asset Management Policy that is approved by Council and publicly available by July 1st, 2019, 2) Developing Asset Management Plans for Core Assets that are approved by Council and publicly available by July 1st, 2022, and 3) Developing Asset Management Plans for other Assets (i.e., non-core assets) that are approved by Council and publicly available by July 1st, 2024.

1.2 Objective

The objectives of this non-core AMP are as follows:

- State of Infrastructure:
  - Create an asset inventory for each service category of the Town, and use it to identify data gaps where further information is needed for asset decision-making;
  - Document existing asset management technologies, and tools used by the Town;
  - Highlight strengths, weaknesses, and opportunities through consultation with the Town's staff; and
  - Review current maintenance strategies and programs to identify opportunities to extend useful life, for example, interventions to counter the impacts of asset deterioration, unplanned repairs, or failure.
- Levels of Service (LOS):
  - Align the customer expectations with corporate objectives and technical operations to balance customer expectations with cost and operational performance to achieve the desired LOS;
  - Shift from an approach centered around condition-based asset maintenance to an approach of "serviceability" in which decisions look at the LOS for each asset to balance costs, risks, and objectives;
  - Utilize LOS to demonstrate the relationship between the tangible nature of the assets and the financial benefits to communicate various funding scenarios with stakeholders effectively;
  - Recommend strategies to deliver desired LOS while reducing future renewal costs, while assessing internal and external influences that affect the Town's service delivery; and
  - Implement continuous improvement initiatives in alignment with the Town's corporate strategic objectives to meet service delivery targets.
- Asset Management Strategy:
  - Forecast operations and maintenance activities required to keep non-core assets fit for purpose which includes conducting interventions to improve condition and extend useful life of assets; and
  - Develop a risk framework for the Town's non-core municipal infrastructure.
- Financial Analysis and Strategy:
  - Develop a financial model for each asset service category to minimize risk of service disruption during the asset's lifecycle looking ahead 10 and 25 years;
  - Review historical budgets and financial plans over the past five years based on expenditures;
  - Compare forecasted operating budgets and capital budgets with future funding and reserves to identify where gaps might exist; and
  - Recommend strategies to close the funding gap for consideration in future budget cycles.
- **Implementation Plan and Continuous Improvement:**
  - Prioritize asset management initiatives for continuous improvement; and
  - Suggest change management processes and initiatives to advance asset management practices, including an implementation plan with a phase in approach for the Town to follow.

1.3 Approach

Asset management is an integrated process, bringing together skills, expertise, and activities of people; with information about a community's physical and software assets; and finances; so that informed decisions can be made, supporting sustainable service delivery. Asset management helps to answer key questions, such as:

1. What do you have and where is it?
2. What is it worth?
3. What is the condition and expected remaining useful life?
4. What is the level of service expectation, and what needs to be done to achieve it?
5. When do you need to do it?
6. How do you extend the life of an asset?
7. How do you ensure long term affordability?

During the development of this plan, a phased approach was taken including the generation of separate technical memorandums outlining the content of each AMP chapter over the course of the project. Each of the technical memorandums presented an overview of the methodology used to develop each chapter and its contents, which were finalized collaboratively between Dillon and Town staff. All content from the technical memorandums has been compiled and incorporated into this AMP that will be published by the Town in compliance with O. Reg. 588/17.

1.4 Scope

In accordance with the third requirement of O. Reg. 588/17, the scope of this AMP includes assets spanning eight Non-Core Service categories which include:

1. **Facilities** – Buildings;
2. **Parks** – Public Recreation, Sports Fields, Park Amenities, Transportation Facilities;
3. **Fleet -** Vehicles;
4. **Equipment** – Operations and Infrastructure Equipment, Community Services Equipment, General Equipment, Fire and Emergency Services Equipment, Library Services Equipment;
5. **Active Transportation** – Multi-Use Paths;
6. **Roadway Appurtenances** – Roadway Signage;
7. **Urban Forestry** – Tree Canopy; and
8. **IT Assets** – Broadband, Hardware, Software.

2.0 State of the Infrastructure

The State of the Infrastructure (SOTI) chapter presents the current condition of non-core assets owned and maintained by the Town. These assets enable the delivery of various services to residents and staff. The methodology used to develop the SOTI is detailed in Section 2.1. The asset inventory is summarized in the following sections along with estimated replacement costs in 2023 dollars, average age, condition, expected useful life (EUL), and remaining useful life.

2.1 Methodology

2.1.1 Asset Data Sources

As part of the generation of the SOTI report, Dillon completed a background review of existing information provided by the Town. The information that was reviewed and used to generate the SOTI report includes:

- Various Building Condition Reports (2022, ABSI);
- Existing GIS data for Multi-Use Paths, Urban Forestry Assets, and Roadway Appurtenances;
- Exports from the Town of Georgina's WorkTech Computerized Maintenance Management Software;
- The Town of Georgina's 2014 AMP (2014, WSP); and
- Excel Sheets provided by the Town of Georgina, such as the 2022 Sign Inspection and Inventory and updated Equipment, IT, and Fleet Inventory spreadsheets.

2.1.2 Asset Hierarchy

Asset management relies on asset data to make informed decisions. For the Town, assets span a variety of services and the first step in organizing asset information is the development of an asset hierarchy. The asset hierarchy provides a *line of sight* for which asset classes are within each service (i.e., facilities, parks, fleet) before identifying each asset and the elements that comprise them.

Asset elemental data serves as the foundation of the asset hierarchy and ultimately allows the Town to make informed evidence-driven decisions about their assets. By implementing sound asset data management practices, the Town will be able to understand the current and future needs of their assets through the intentional collection of meaningful attributes such as age, condition, construction material, and replacement value. The levels for the Town's asset hierarchy are presented in Table 2-1.

Table 2-1: Asset Hierarchy - Levels

Level	Description	Example
1 – Service Category	Service provided to the resident	Facilities
2 – Asset Category	Similar asset grouping, such as buildings, or linear infrastructure such as cycling facilities	Buildings
3 – Asset Class	Individual functional units within the Asset Category	Corporate Offices
4 - Asset	Individual Vertical, Linear, or Point Assets	Building or walkway
5 – Asset Element	Individual components of a Vertical Asset. Linear and Point Assets, by definition, will only have one element which is the Asset itself.	Roof or exterior walls

Defining the level of detail and the most important attributes required to produce actionable asset data is critical to establishing a standardized, efficient, and consistent asset data collection program, which will be discussed further in the Condition Assessment Strategy section. The level of detail adopted for asset data collection has a large impact on data collection activities. If there is too much detail, it can prolong the process without returning value to the overall program and too little detail can result in no value created by the data collected.

Additionally, the assets owned by the Town can be categorized based on their physical characteristics into linear, vertical (non-linear), and point assets. For each of these asset types, different needs and challenges related to their management, operation, and maintenance will be encountered. A vertical asset is typically a single, large, stand-alone facility or structure comprised of many interrelated elements. The elements comprising a vertical asset typically vary in expected useful life and will require capital investment at different stages of the overall asset's service life, such as the buildings featured in the Facilities service category. These types of assets are characterized by their complexity, both in terms of their operation and the management of their ongoing maintenance and rehabilitation. Vertical assets require asset documentation at all levels of the asset hierarchy, including the identification of the service category where the asset operates, the asset class, the asset, and the asset elements that comprise the asset.

To document the asset elements comprising vertical assets, there are additional standards that may be employed to align with condition assessment programs executed by qualified professionals or professional firms such as Building Condition Assessments or Facility Condition Assessments. For this AMP, all Facilities assets were inventoried using ASTM UNIFORMAT II Standard E1557-97 Classification of Building Elements and Related Site Work to align with the Building Condition Assessments completed by Accent Building Sciences Inc. (ABSI) in 2022. The standard introduces an additional asset element hierarchy to enable further *line of sight* for asset elements. Table 2-2 shows an example of the UNIFORMAT II classification for common substructure building elements.

Table 2-2: Example of UNIFORMAT II Classification - Substructure Elements

UNIFORMAT II Level 1 (Major Element Group)	UNIFORMAT II Level 2 (Element Group)	UNIFORMAT II Level 3 (Individual Elements)
A - Substructure	A10 - Foundations	A1010 – Standard Foundations
		A1020 – Special Foundations
		A1030 – Slab on Grade
	A20 – Basement Construction	A2010 – Basement Excavation
		A2020 – Basement Walls

Using a standard classification for documenting asset elements has several advantages including:

1. Unit rate-based cost estimates can be easily appended to individual elements, providing accurate and refined costing for various lifecycle-related activities relevant to the asset element;
2. Analysis of asset elements can be conducted at different granularities (i.e., based on levels 1, 2 and/or 3 categorizations). This is particularly useful when comparing the condition by element types between more than one asset; and
3. Specific observations or deficiencies noted during site inspections can be appended to the individual elements along with recommendations.

On the other hand, linear and point assets do not have the added complexity of many interrelated elements. Linear assets are characterized by their continuity and inter-connectivity, and they typically cover large areas or distances, such as the multi-use paths featured in this AMP. Point assets, on the other hand, are those that are located or fixed at a specific point or location. They are typically stand-alone assets such as the parks, fleet, equipment, roadway appurtenances, urban forestry, and IT assets featured in this AMP. For linear and point assets, asset documentation is required for all levels of the asset hierarchy except the asset element level as these assets are treated as one tangible asset.

The asset hierarchy that was generated and used for the Town's assets is shown in Figure 2-1. The eight service categories (level 1) are shown in the light blue boxes, with the associated asset categories shown in bold (level 2) and the individual asset classes in regular text (level 3).

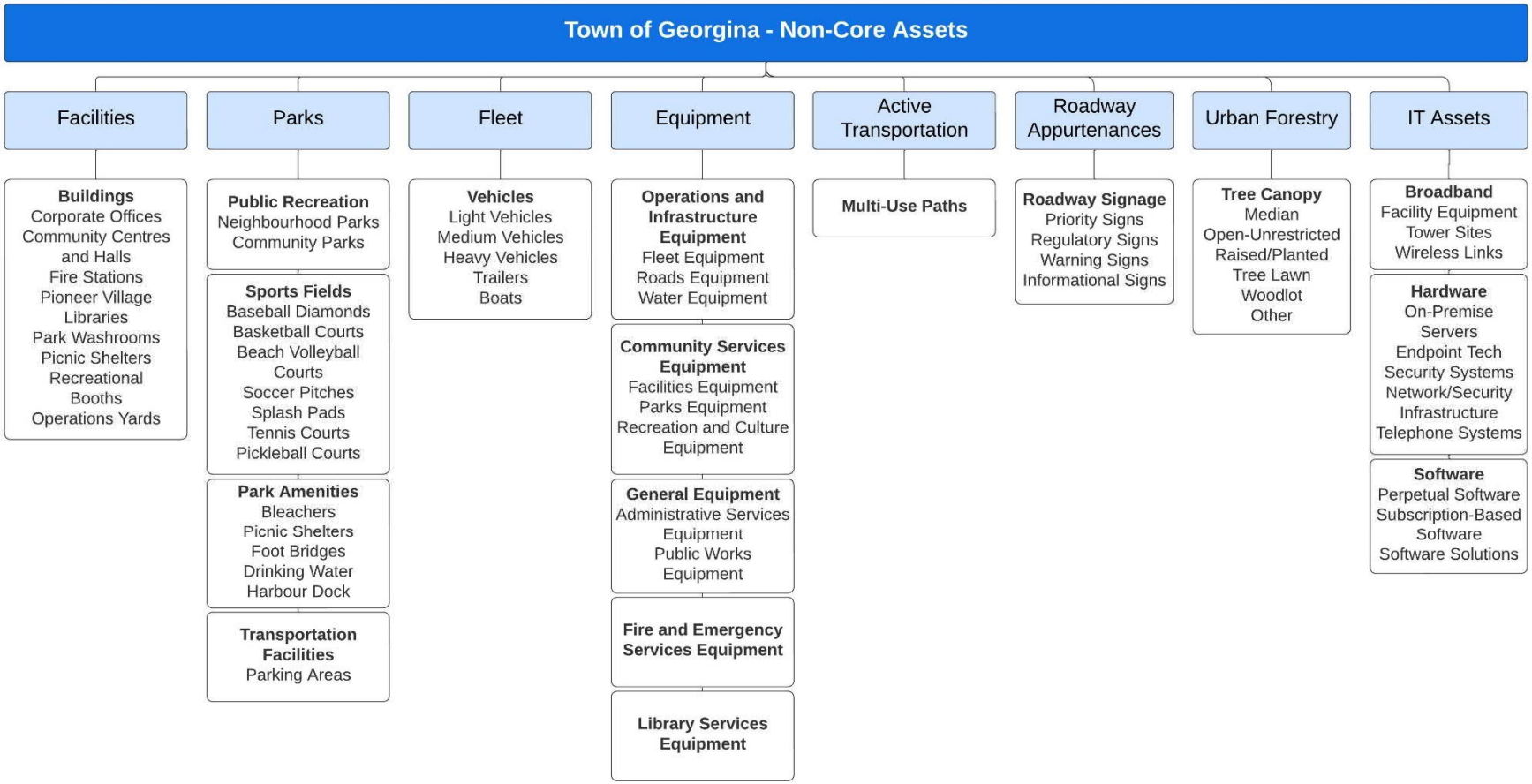


Figure 2-1: Town of Georgina - Asset Hierarchy for Non-Core Assets

2.1.3 Condition Rating System

To standardize the methodology for evaluating and reporting on the condition of the assets, condition ratings for each asset were organized and assigned using a 5-scale grading which is based on the Canadian Infrastructure Report Card (2019). Table 2-3 outlines the rating system which ranges from 1 (Very Good) to 5 (Very Poor).

Table 2-3: Condition Rating System

Condition Rating	Condition Grade	Remaining Useful Life	Description
1	Very Good	80% – 100%	Asset (or asset element) is physically sound, performing as intended and resembles "like-new" condition.
2	Good	60% – 80%	Asset (or asset element) is physically sound and performing as intended. Needs to be re-inspected in the medium term.
3	Fair	40% – 60%	Showing deterioration, with some elements physically deficient. Early stages of decay or dereliction are becoming evident.
4	Poor	20% – 40%	Major portion of asset (or asset element) is physically deficient. It is not functioning properly due to significant deterioration and is a candidate for replacement in the short term.
5	Very Poor	0% – 20%	Asset (or asset element) is physically unsound. There is a high probability it will fail, or it already has. Immediate replacement is required.

2.1.4 Age-Based Condition Assessments

The asset information was compiled into an asset inventory which was used to report on the condition ratings for the assets. A hybrid approach was considered using: 1) the age of the asset; 2) expected useful life (EUL); and 3) the last known condition rating assigned to the asset. Where current condition information was not available, a straight-line asset deterioration was assumed to calculate the 2023 condition ratings based on remaining useful life, as outlined in Table 2-3.

Straight-line deterioration is a concept derived from the more commonly known accounting calculation referred to as "Straight Line Depreciation", where a uniform rate of reduction in an asset's value is assumed from the asset's purchase price down to its value at the end of its useful life. In this case, the concept is applied in consideration of an asset's physical condition deteriorating over time. Straight-line deterioration is a common practice in asset management used to forecast asset replacement schedules based on historical information and without a recent visual condition assessment.

For assets where a last known condition was recorded, age equivalent corrections were used to determine an appropriate condition rating assuming straight-line deterioration, but also accounting for the last known condition. As part of this calculation, each asset or asset element's EUL was extrapolated along the condition rating scale and an upper limit and lower limit were generated for each condition grade centered on the remaining useful life of the asset and in alignment with Table 2-3. To establish the age equivalent correction (AEC) for an asset considering last known condition, the following equation was applied:

$$AEC = Years\ Since\ Last\ Known\ Condition + Lower\ Limit\ of\ the\ Last\ Known\ Condition\ Rating\ (Years)$$

For example, metal cladding on the exterior walls of a building with an expected useful life of 25 years and installation year of 1980 would be 43 years old in 2023, therefore the age-based condition rating would result in a 5 as the metal cladding has surpassed its EUL. However, during the 2022 building condition assessments, a condition rating of 3 (Fair) was assigned to the metal cladding which was 1 year ago. Following straight-line deterioration, the age equivalent (lower limit) of the metal cladding entering the age range associated with a condition rating of 3 (Fair) is 10 years. The AEC will therefore be 11 years (1 year + 10 years), and the final assumed condition for 2023 would be as if the metal cladding has 11 years remaining useful life, resulting in an age-based condition remaining at 3 (Fair).

2.1.5 Estimated Replacement Costs

Where replacement costs were provided, then the values were inflated based on applicable price indexes to estimate the replacement cost in 2023 dollars. If replacement costs were not provided, Dillon leveraged a unit cost model to assign replacement costs based on unit cost estimates for 2023. It is recommended that unit prices should be reviewed annually by the Town based on costs observed from local contractors. Table 2-4 summarizes the costing sources leveraged for the assets within each service category and the average annual inflation rate applied, as applicable.

Average annual inflation rates outlined in the table above were determined based on adjusting all costing sources to 2023-dollar values with respect to the base year of the costing sources. This results in a variety of average annual inflation rates being employed.

Table 2-4: Summary of Costing Methods to Estimate Asset Replacement Costs

Service Category	Featured Asset Classes	Costing Source and Year	Average Annual Inflation Rate Applied
Facilities	Corporate Offices, Community Centres and Halls, Fire Stations, Libraries, Park Washrooms, Picnic Shelters, Recreational, Booths, and Operations Yards	Building Condition Assessments (BCAs) Completed by ABSI (2022)	8.23%, based on Building Construction Price Index for Toronto (Non-Residential Buildings)
Parks	Neighbourhood Parks, Community Parks, Baseball Diamonds, Basketball Courts, Beach Volleyball Courts, Soccer Pitches, Splash Pads, Tennis Courts, Bleachers, Picnic Shelters, Foot Bridges, Drinking Water, Harbour Dock, and Parking Areas	Town of Georgina Asset Management Plan (2014), Town of Georgina Tangible Capital Asset Listing (2022), Manager of Parks - Town of Georgina (2023), Dillon Unit Cost Model Where Unknown (2023)	2.6%, for Costing Lifted from the 2014 AMP; 5.5%, for Costing Lifted from the 2022 TCA Listing. Based on the Consumer Price Index (Bank of Canada)
Fleet	Light Vehicles, Heavy Vehicles, ATVs, Trailers, and Boats	Provided by the Town Where Available (2023), Dillon Unit Cost Model Where Unknown (2023)	None, 2023 Cost Estimates
Equipment	Fleet Equipment, Roads Equipment, Water Equipment, Facilities Equipment, Parks Equipment, Recreation and Culture Equipment, Administrative Equipment, Public Works Equipment, Fire and Emergency Equipment, and Library Services Equipment	Provided by the Town Where Available (2023), Dillon Unit Cost Model Where Unknown (2023)	None, 2023 Cost Estimates
Active Transportation	Multi-Use Paths	Dillon Unit Cost Model (2023)	None, 2023 Cost Estimates
Roadway Appurtenances	Priority Signs, Regulatory Signs, Warning Signs, and Informational Signs	Dillon Unit Cost Model (2023)	None, 2023 Cost Estimates
Urban Forestry	Median, Open/Unrestricted, Raised/Planted, Tree Lawn, Woodlot, and Other Trees	Dillon Unit Cost Model (2023)	None, 2023 Cost Estimates
IT Assets	Facility Equipment, Tower Sites, Wireless Links, On-Premises Servers, Endpoint Tech, Security Systems, Network/Security Infrastructure, Telephone Systems, Perpetual Software, Subscription-Based Software, and Software Solutions	Provided by the Town (2023)	None, 2023 Cost Estimates

2.2 Facilities

The Town owns and maintains many types of facility assets, each providing different services to Town employees and the community. There is a total of 83 facilities included within the asset inventory, valued at a total replacement cost of approximately $324.1 million. Table 2-5 summarizes the inventory of facility assets by asset class and count. A full summary of the facilities within each asset class and their estimated replacement costs is provided in the following subsections.

Table 2-5: Facilities – Inventory Summary by Asset Class

Asset Class	Description	Count
Corporate Offices	Georgina Civic Centre and the Annex	4
Community Centers and Halls	Public Meeting Facilities	18
Fire Stations	Keswick, Pefferlaw, and Sutton Fire Halls	4
Pioneer Village	Includes all facilities that are at the Pioneer Village	17
Libraries	Public Libraries	3
Park Washrooms	Standalone public washroom facilities located within or at parks	5
Picnic Shelters	Standalone public picnic facilities	5
Recreational	Standalone recreational facilities including ice pads, a ski hill, a snow making building, public pools, and sports facilities	12
Booths	Concession and tourist/information booths	3
Operations Yards	Facilities and yards used by public works operations staff	12
	Total	83

2.2.1 Inventory and Estimated Replacement Costs

2.2.1.1 Corporate Offices

Table 2-6 lists the facilities included within the Corporate Offices asset class. The estimated replacement cost of these assets is approximately $76.5 million.

Table 2-6: Facilities – Summary of Corporate Offices

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00052	Annex Building (Previously Georgina Operations Centre)	3182 Baseline Road, Keswick, ON	1980	$3,950,000
FAC00006	Georgina Civic Centre[1]	26557 Civic Centre Road, Keswick, ON	1958	$19,283,000
TBD[2]	Georgina Replacement Civic Centre (GRCC)	26557 Civic Centre Road, Keswick, ON	2026	$50,000,000[3]
FAC00051	GTTI Building & Annex	5207 Baseline Road, Keswick, ON	2006	$3,306,000
			Total	$76,539,000

1. Note: The Georgina Civic Centre will be replaced by a new facility, the Georgina Replacement Civic Centre (GRCC), with construction anticipated for completion in 2026. Once the GRCC is operational, the Georgina Civic Centre will be demolished.
2. Note: No asset ID was available for the GRCC from the Town's Worktech software as this is a future asset and construction is expected to be completed in 2026. A Worktech ID for the GRCC is to be determined.
3. Note: The estimated construction cost of the new GRCC is approximately $50 M. The GRCC is a newly designed facility and does not represent a like-for-like replacement of the Georgina Civic Centre.

2.2.1.2 Community Centres and Halls

Table 2-7 lists the facilities included within the Community Centres and Halls asset class. The estimated replacement cost of these assets is approximately $64.8 million. It should be noted that the Town plans to dispose of the De La Salle #1 (Jericho) building, with demolition scheduled for 2024/2025.

Table 2-7: Facilities – Summary of Community Centres and Halls

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00040	Animal Shelter	26817 Civic Centre Road, Keswick, ON	1990	$2,478,000
FAC00010	Belhaven Hall	25202 Warden Avenue, Georgina, ON	1927	$1,577,000
FAC00014	De La Salle #1 (Jericho)	807 Lake Drive, Jackson's Point, ON	1950	$764,000
FAC00011	De La Salle Chapel	1940 Metro Road, Jackson's Point, ON	1990	$2,162,000
FAC00019	Egypt Hall	6756 Smith Boulevard, Sutton, ON	2013	$3,263,000
FAC00024	Elmgrove Hall	577 Catering Road, Sutton, ON	1881	$963,000
FAC00048	Family Life Centre	25202 Warden Avenue, Georgina, ON	1927	$952,000
FAC00008	Georgina Art Centre	149 High Street, Sutton, ON	1967	$2,551,000
FAC00020	Kin Community Hall	3 Fairpark Lane, Sutton, ON	1990	$3,396,000

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00021	Pefferlaw Lions Community Centre & Senior Centre	38 Pete's Lane, Pefferlaw, ON	1975	$5,043,000
FAC00088	Port Bolster Hall	31416 Lake Ridge Road, Pefferlaw, ON	1963	$1,972,000
FAC00016	ROC Chalet	26479 Civic Centre Road, Keswick, ON	2011	$8,754,000
FAC00026	Roches Point Memorial Hall	85 Osborne Street, Keswick, ON	1977	$1,156,000
FAC00003	Stephen Leacock Theatre & Club 55 (Keswick Seniors Centre)	130 Gwendolyn Boulevard, Keswick, ON	1982	$8,710,000
N/A[1]	YSpace Georgina	1 Market Square Crescent, Sutton, ON	1987	$1,139,000
FAC00090	The Link Community Centre	20849 Dalton Road, Sutton, ON	1993	$15,625,000
FAC00023	Udora Community Hall	24 Victoria Road, Udora, ON	1994	$2,558,000
FAC00025	Virginia Community Hall	28288 ON-Highway 48, Pefferlaw, ON	1912	$1,712,000
Total				$64,775,000

1. Note: No asset ID was available for YSpace Georgina from the Town of Georgina's Worktech software.

2.2.1.3 Fire Stations

Table 2-8 lists the facilities included within the Fire Stations asset class. The estimated replacement cost of these assets is approximately $16.3 million.

Table 2-8: Facilities – Summary of Fire Stations

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00028	Keswick Fire Hall	165 The Queensway South, Keswick, ON	1989	$6,689,000
FAC00029	Pefferlaw Fire Station 1-8 Administration Building	272 Pefferlaw Road, Pefferlaw, ON	1960	$1,667,000
FAC00029	Pefferlaw Fire Hall	272 Pefferlaw Road, Pefferlaw, ON	2021	$5,772,000
FAC00030	Sutton Fire Hall	37 Snooks Road, Sutton, ON	1973	$2,184,000
			Total	$16,312,000

2.2.1.4 Pioneer Village

Table 2-9 lists the facilities included within the Pioneer Village asset class. The estimated replacement cost of these assets is approximately $7.1 million.

Table 2-9: Facilities – Summary of Pioneer Village Assets

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00088[1]	Admin Building	26557 Civic Centre Road, Keswick, ON	1995	$1,072,000
	Bandstand	26570 Civic Centre Road, Keswick, ON	1970	$114,000
	Blacksmith	26567 Civic Centre Road, Keswick, ON	1980	$254,000
	Cabin	26559 Civic Centre Road, Keswick, ON	2011	$176,000
	Caboose	26565 Civic Centre Road, Keswick, ON	1970	$152,000
	Church	26560 Civic Centre Road, Keswick, ON	1975	$445,000
	Gatehouse	26571 Civic Centre Road, Keswick, ON	1995	$139,000
	General Store	26558 Civic Centre Road, Keswick, ON	1970	$481,000
	Mann House	26561 Civic Centre Road, Keswick, ON	1990	$580,000
	Noble House	26557 Civic Centre Road, Keswick, ON	1986	$1,528,000
	Post Office	26562 Civic Centre Road, Keswick, ON	1996	$296,000
	Quilt Cabin	26569 Civic Centre Road, Keswick, ON	1970	$184,000
	Radial Stops 1 & 2	26572 Civic Centre Road, Keswick, ON	1974	$77,000
	Sedore Barn	26566 Civic Centre Road, Keswick, ON	1987	$166,000
	Smallwood Cabin	26568 Civic Centre Road, Keswick, ON	1974	$552,000
	Train Station	26564 Civic Centre Road, Keswick, ON	1977	$830,000
	Trapper's Cabin	26563 Civic Centre Road, Keswick, ON	2005	$76,000
			Total	$7,122,000

1. Note: The Town of Georgina's Worktech software uses one asset ID for all Pioneer Village assets.

2.2.1.5 Libraries

Table 2-10 lists the facilities included within the Libraries asset class. The estimated replacement cost of these assets is approximately $16.3 million.

Table 2-10: Facilities – Summary of Libraries

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00057	Keswick Library Branch	90 Wexford Drive, Keswick, ON	2002	$7,755,000
FAC00058	Pefferlaw Library Branch	76 Pete's Lane, Pefferlaw, ON	1989	$4,529,000
FAC00059	Peter Gzowski (Sutton) Library Branch	5279 Black River Road, Sutton, ON	1996	$4,044,000
			Total	$16,328,000

2.2.1.6 Park Washrooms

Table 2-11 lists the facilities included within the Park Washrooms asset class. The estimated replacement cost of these assets is approximately $4.6 million.

Table 2-11: Facilities – Summary of Park Washrooms

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00007	Civic Centre Washrooms and Picnic Shelter	26557 Civic Centre Road, Keswick, ON	1999	$435,000
N/A[1]	De La Salle – Beach Washrooms	1941 Metro Road, Jackson's Point, ON	1990	$640,000
FAC00013	De La Salle – Change Rooms and Washrooms	1940 Metro Road, Jackson's Point, ON	1990	$1,020,000
FAC00012	De La Salle – Offices & Washrooms	1940 Metro Road, Jackson's Point, ON	1990	$1,291,000
FAC00047	Jackson's Point Harbour – Office & Washrooms	5 Bonnie Boulevard, Jackson's Point, ON	2000	$1,228,000
			Total	$4,614,000

1. Note: No asset ID was available for the De La Salle – Beach Washrooms from the Town of Georgina's Worktech software.

2.2.1.7 Picnic Shelters

Table 2-12 lists the facilities included within the Picnic Shelters asset class. The estimated replacement cost of these assets is approximately $1.4 million.

Table 2-12: Facilities – Summary of Picnic Shelters

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00049	Band Shell, Jackson's Point	21093 Dalton Road, Jackson's Point, ON	1987	$348,000
FAC00015	De La Salle Picnic Shelter	1940 Metro Road East, Jackson's Point, ON	1990	$356,000
FAC00085	North Gwillimbury Picnic Shelter	857 Lake Drive, Keswick, ON	1978	$415,000
FAC00086	Steel Park Shelter at Whipper Watson Park	161 Carrick Avenue, Keswick, ON	2011	$109,000
N/A[1]	Udora Community Hall Shelter	24 Victoria Rd GD, Udora, ON,	1994	$180,000
			Total	$1,408,000

1. Note: No asset ID was available for the Udora Community Hall Shelter from the Town of Georgina's Worktech software.

2.2.1.8 Recreational

Table 2-13 lists the facilities included within the Recreational asset class. The estimated replacement cost of these assets is approximately $112.9 million.

Table 2-13: Facilities – Summary of Recreational Facilities

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00001	Georgina Ice Palace	90 Wexford Drive, Keswick, ON	1997	$35,784,000
FAC00007	Civic Centre Grounds and Amenities	26557 Civic Centre Road, Keswick, ON	2010	$578,000
FAC00009	Georgina Lawn Bowling Structure	26557 Civic Centre Road, Keswick, ON	1982	$1,238,000
FAC00027	Georgina Leisure Pool	5279 Black River Road, Sutton, ON	1996	$7,290,000
FAC00002	Georgina Sutton Arena	48 Hawkins Street, Sutton, ON	1990	$16,359,000
FAC00084	Pefferlaw Ice Pad	38 Pete's Lane, Pefferlaw, ON	2009	$5,847,000
FAC00016	ROC Splash Pad	26479 Civic Centre Road, Keswick, ON	2010	$302,000
FAC00089	Ski Hill at the ROC	26480 Civic Centre Road, Keswick, ON	2011	$550,000

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00083	Snow Making Building	26479 Civic Centre Road, Keswick, ON	2011	$1,907,000
N/A[1]	Splash Pad at Whipper Watson Park	161 Carrick Avenue, Keswick, ON	2011	$130,000
N/A[1]	Udora Community Tennis Court	24 Victoria Road, Udora, ON	1994	$182,000
TBD[1]	Multi-Use Recreational Centre (MURC)	261 Garrett Styles Drive, Georgina, ON	2024	$42,747,000
			Total	$112,914,000

1. Note: No asset IDs were available for the Splash Pad at Whipper Watson Park, the Udora Community Tennis Court, or the MURC from the Town of Georgina's Worktech software. The MURC is a brand-new asset and construction will be completed in 2024. A Worktech building ID for the MURC is to be determined.

2.2.1.9 Booths

Table 2-14 lists the facilities included within the Booths asset class. The estimated replacement cost of these assets is approximately $2.1 million.

Table 2-14: Facilities – Summary of Booths

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00017	Concession Stand Building/Canteen	26479 Civic Centre Road, Keswick, ON	2010	$1,228,000
FAC00042	Jackson's Point Harbour, Oasis Concession Booth	5 Bonnie Boulevard, Jackson's Point, ON	1968	$629,000
FAC00030	Tourist Booth	Highway 48 at Bellacre Road, Georgina, ON	1980	$289,000
			Total	$2,146,000

2.2.1.10 Operations Yards

Table 2-15 lists the facilities included within the Operations Yards asset class. The estimated replacement cost of these assets is approximately $22 million.

Table 2-15: Facilities – Summary of Operations Yards

Building ID	Asset Name	Civic Address	Construction Year	Estimated Replacement Cost (2023)
FAC00052	Atlas Salt Storage Fabric Dome	26817 Civic Centre Road, Keswick, ON	2012	$292,000
FAC00032	Belhaven Roads Yard and Storage Building	25291 Warden Avenue, Georgina, ON	1962	$4,721,000
FAC00033	Belhaven Yard Sand Domes	25291 Warden Avenue, Georgina, ON	1966	$3,238,000
N/A[1]	Concrete Utility Building at Whipper Watson Park	161 Carrick Avenue, Keswick, ON	2011	$71,000
FAC00036	Egypt Roads Yard and Storage Building	25765 Park Road, Sutton, ON	1970	$3,162,000
FAC00037	Egypt Yard Sand Dome	25766 Park Road, Sutton, ON	1998	$1,300,000
N/A[1]	Jackson's Point Harbour, Wastewater Lift Station	45 Lorne Street, Jackson's Point, ON	2007	$1,300,000
N/A[1]	Ontario Water Centre	1510 Metro Road North, Willow Beach, ON	2005	$1,106,000
FAC00050	Parks Green House	26817 Civic Centre Road, Keswick, ON	2004	$408,000
FAC00045	Parks Yard Administration Building	26817 Civic Centre Road, Keswick, ON	1990	$1,423,000
N/A[1]	Parks Yard Storage Building	26817 Civic Centre Road, Keswick, ON	1990	$1,153,000
FAC00046	Water Works Facility	26817 Civic Centre Road, Keswick, ON	2010	$3,788,000
			Total	$21,962,000

1. Note: No asset IDs were available for the Concrete Utility Building at Whipper Watson Park, the Wastewater Lift Station at Jackson's Point Harbour, the Ontario Water Centre, and the Parks Yard Storage Building from the Town of Georgina's Worktech software.

2.2.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

The asset conditions were determined based on the results of the Building Condition Assessments completed by ABSI in 2022 and by applying the methodology outlined in Section 2.1.3. The average age, condition, expected and remaining useful life of the assets in the Facilities service category is summarized in Table 2-16.

Table 2-16: Facilities - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Group Elements	Average Age (Years)	Average Condition Grade	Expected Useful Life* (Years)	Average Remaining Useful Life (Years)
Foundations	37	Good	75	56
Super Structure	31	Good	50	35
Exterior Enclosure	27	Good	25	15
Roofing	20	Fair	25	13
Interior Construction	22	Good	25 – 50	22
Stairs	29	Good	50	33
Interior Finishes	23	Good	15	8
Conveying	22	Poor	30 – 40	13
Plumbing	15	Fair	25 – 30	15
HVAC	17	Fair	10 – 25	8
Fire Protection	7	Fair	10 – 40	7
Electrical	16	Fair	20 – 40	14
Equipment	11	Fair	20	9
Special Construction	23	Good	20 – 30	20
Site Improvements	20	Good	15 – 60	8
Site Mechanical Utilities	17	Fair	15 – 60	25
Site Electrical Utilities	16	Good	20	11
Overall	21	Fair	10 – 75	17

*Note: The expected useful life can vary depending on the individual asset element within the element group.

Facilities assets were inventoried following UNIFORMAT II elemental classification consisting of major group elements, which are separated further into group elements and then individual asset elements. These major group elements, when combined, represent the entire asset. Figure 2-2 displays the conditions of individual asset elements within each major group by count across all assets in the Facilities inventory.

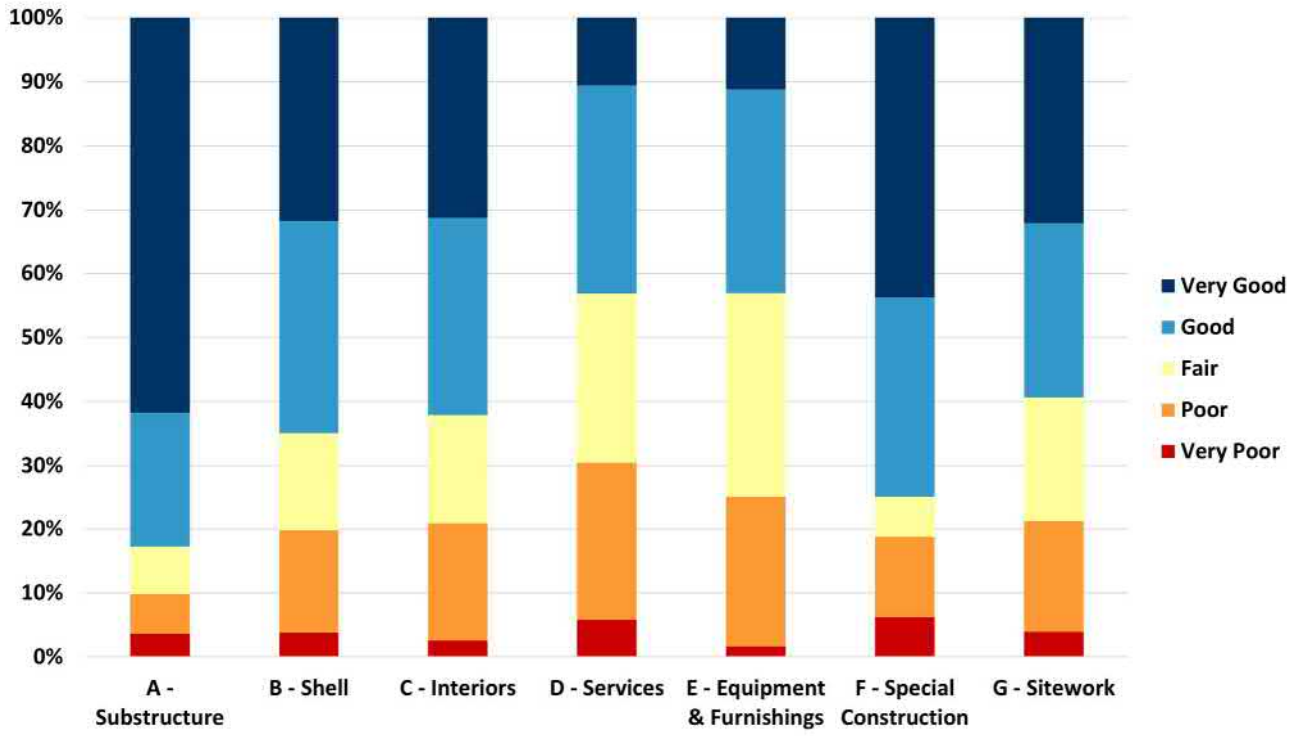


Figure 2-2: Facilities - Condition of Individual Asset Elements by Major Element Group and Count

2.3 Parks

The Parks service category encompasses outdoor spaces and facilities used for recreational purposes, with assets spanning four asset categories defined as public recreation, sports fields, park amenities, and transportation facilities. Further, there are fifteen asset classes found within the asset inventory for Parks.

2.3.1 Inventory and Estimated Replacement Cost

The Town owns and maintains 227 assets within the Parks service category. The estimated replacement cost of these assets is approximately $65.8 million. Table 2-17summarizes the Parks service category assets by asset category and asset class.

Table 2-17: Parks – Inventory Summary by Asset Category and Asset Class

Asset Category	Asset Class	Count	Total Replacement Cost (2023)
Public Recreation	Neighbourhood Parks	44	$11,000,000
	Community Parks	11	$15,400,000
Sports Fields	Baseball Diamonds	16	$19,200,000
	Basketball Courts	6	$900,000
	Beach Volleyball Courts	3	$30,000
	Soccer Pitches	11	$3,900,000
	Splash Pads	2*	$600,000
	Tennis Courts	5	$850,000
	Pickle Ball Courts	9	$575,000
Park Amenities	Bleachers	47	$564,000
	Harbour Dock	2	$1,500,000
	Drinking Water	7	$420,000
	Foot Bridges	7	$2,000,000
	Picnic Shelters	10	$1,500,000
Transportation Facilities	Parking Areas	47	$7,346,000
Total	-	227	$65,785,000

*Note: There are 2 additional splashpads accounted for within the Facilities inventory.

Estimated replacement costing is based on costing information provided by the Manager of Parks, Town of Georgina, the 2014 Asset Management Plan, and the 2022 TCA Listing. All costing sources have been appropriately inflated to 2023-dollar values as detailed in Table 2-4.

2.3.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

The asset conditions were determined by applying the methodology outlined in Section 2.1.3. In the absence of recent condition assessments, the condition of Parks assets is primarily determined based on age and expected useful life. The average age, condition, expected and remaining useful life of the assets in the Parks service category are summarized in Table 2-18.

Table 2-18: Parks - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Asset Category	Asset Class	Average Age (Years)	Average Condition	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Public Recreation	Neighbourhood Parks	21	5	75	54
	Community Parks	20	5	75	55
Sports Fields	Baseball Diamonds	24	4	25	4
	Basketball Courts	18	4	20	5
	Beach Volleyball Courts	15	5	15	1
	Soccer Pitches	20	4	15	10
	Splash Pads	9	3	20	12
	Tennis Courts	15	4	20	5
	Pickle Ball Courts	13	4	20	7
Park Amenities	Bleachers	17	5	15	0
	Harbour Dock	13	4	20	7
	Drinking Water	21	5	15	0
	Foot Bridges	16	3	30	14
	Picnic Shelters	21	5	15	1
Transportation Facilities	Parking Areas	25	4	15 – 25*	4
Overall		18	4	15 – 75	12

*Note: The expected useful life for asphalt parking areas is 25 years and the expected useful life of granular parking areas is 15 years.

Figure 2-3 displays the conditions of park assets within each asset class by count. It should be noted that in the absence of condition assessment data, all conditions in the Parks service category are age-based. Additionally, the age of some assets is currently unknown limiting the projection of current conditions. It is recommended that the Town strives to improve condition assessment programs for these assets to improve condition data.

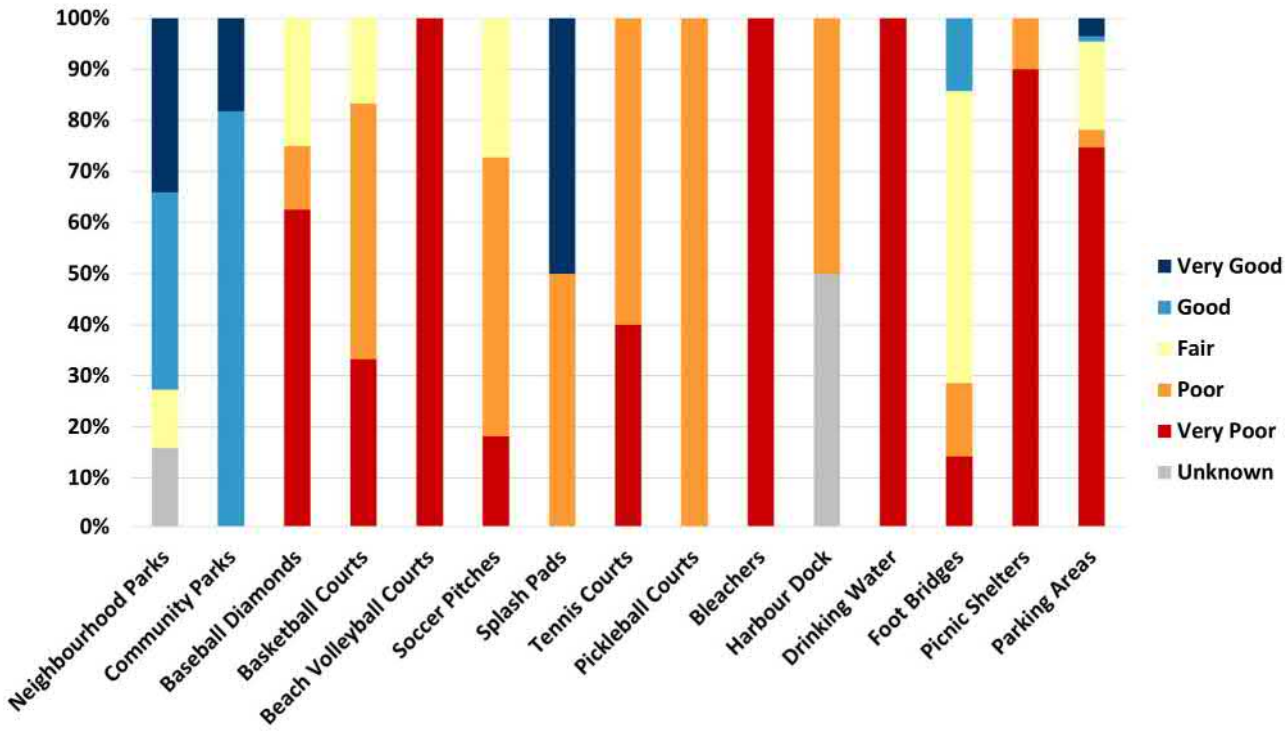


Figure 2-3: Parks - Condition Summary by Asset Class and Count

2.4 Fleet

2.4.1 Inventory and Estimated Replacement Cost

The Town owns and maintains Fleet assets spanning various departments. For inventory purposes, five asset classes have been identified including Light Vehicles (i.e., cars, ATVs, SUVs and ½ ton trucks), Medium Vehicles (i.e., trucks heavier than ½ ton & vans), Heavy Vehicles (i.e., semitrucks and firetrucks), Trailers (i.e., flatbed & storage trailers) and Boats that are used for fire rescue. The Town noted that all fleet assets have license plates, which is what differentiates them from fleet equipment in Section 2.5. Table 2-19 summarizes the Fleet service category assets. There is a total of 122 Fleet assets owned by the Town with a total replacement value of approximately $27.4 million. It should be noted that 2 additional Fleet assets owned by the Town are currently for sale and have been excluded from the inventory as they are assumed to be disposed of shortly.

Table 2-19: Fleet – Inventory Summary by Asset Class

Asset Class	Count	Total Replacement Cost (2023)
Light Vehicles	44	$6,231,000
Medium Vehicles	34	$4,025,000
Heavy Vehicles	14	$13,050,000
Trailers	28	$3,095,000
Boats	2	$950,000
Total	122	$27,351,000

2.4.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

A visual condition assessment was completed by the Town's Supervisor of Fleet Services, Operations, and Infrastructure Department, in 2023 for all Fleet assets. The condition assessment utilized condition ratings that vary slightly from the Town's five-point condition rating scale. Table 2-20 summarizes how the Supervisor's condition ratings were aligned with the Town's five-point condition rating system.

Table 2-20: Fleet - Condition Assessment Summary

Supervisor's Assessed Condition	Rating	**Condition**	Summary
New, Very Good	1	Very Good	43% of all fleet assets are in "very good" condition
Good	2	Good	30% of all fleet assets are in "good" condition
Average	3	Fair	16% of all fleet assets are in "fair" condition
Degrading	4	Poor	10% of all fleet assets are in "poor" condition
Junk	5	Very Poor	< 1 % of all fleet assets are in "very poor" condition

The average age, condition, expected and remaining useful life of the assets in the Fleet service category are summarized in Table 2-21.

Table 2-21: Fleet - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Asset Class	Average Age (Years)	**Average Condition**	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Light Vehicles	5	1	10	7
Medium Vehicles	6	2	10	5
Heavy Vehicles	11	3	20	10
Trailers	10	2	15	10
Boats	10	2	10	6
Overall	8	2	10 – 20	8

Figure 2-4 displays the conditions of Fleet assets within each asset class by count. The asset conditions were determined based on the Supervisor's recent condition assessments.

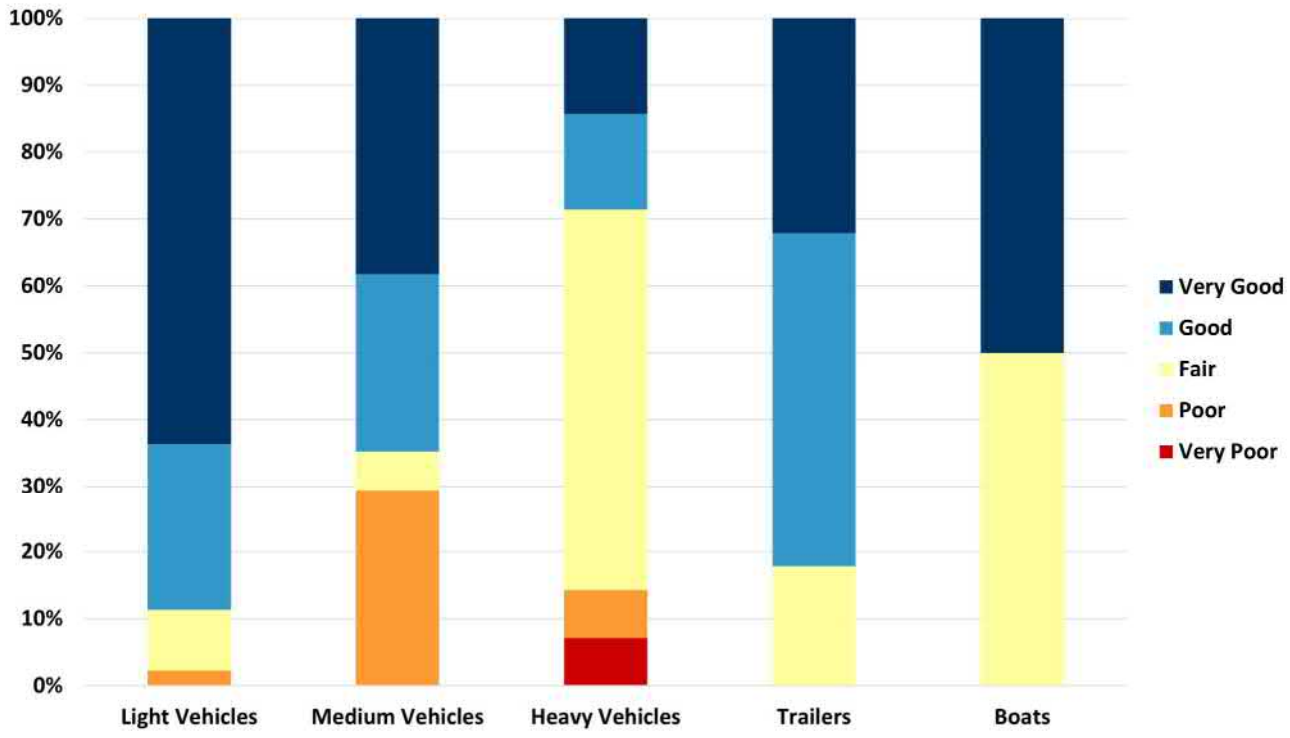


Figure 2-4: Fleet - Condition Summary by Asset Class and Count

2.5 Equipment

2.5.1 Inventory and Estimated Replacement Cost

The Town owns a variety of stationary and mobile equipment that supports service delivery in the operations and infrastructure, community services, fire and emergency services, and library services departments. Additionally, the Town owns some general equipment for administrative services and public works. There is a total of 1,842 Equipment assets owned by the Town based on a review of inventoried equipment listed in the Town's management and operations software, WorkTech. It should be noted that the inventory within WorkTech features some pooled assets (e.g., there are 529 benches and tables in the parks equipment asset class stored in Worktech within one asset entry).

Replacement costs for equipment assets were based on input from Town staff where known. Where replacement costs were unknown, Dillon employed a unit cost model to assign replacement costs based on the types of equipment found in the inventory and unit costs estimated for 2023. Of the 1,842 inventoried equipment assets, 94 unique equipment types were identified and included in the unit cost model. Appendix A summarizes the unit cost model employed by Dillon, including the unique equipment types found in the inventory along with their estimated unit costs for 2023. In alignment with the asset hierarchy, all equipment assets are summarized into 10 asset classes. Table 2-22 summarizes the inventory and replacement cost of Equipment assets by asset class.

Table 2-22: Equipment – Inventory Summary by Asset Class

Asset Category	Asset Class	Count	Total Replacement Cost (2023)
Operations and Infrastructure Equipment	Fleet Equipment	15	$580,000
	Roads Equipment	59	$4,516,000
	Water Equipment	12	$456,000
Community Services Equipment	Facilities Equipment	575	$1,942,000
	Parks Equipment	867	$9,057,000
	Recreation and Culture Equipment	27	$1,033,000
General Equipment	Administrative Services Equipment	14	$111,000
	Public Works Equipment	83	$2,600,000
Fire and Emergency Services Equipment	Fire and Emergency Services Equipment	183	$750,500
Library Services Equipment	Library Services Equipment	7	$51,500
	Total	1842	$21,097,000

2.5.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

The equipment asset conditions were determined primarily through age-based linear deterioration in the absence of recent condition assessment information. The average age, condition, expected and remaining useful life of the assets in the Equipment service category are summarized in Table 2-23 by asset category and asset class.

Table 2-23: Equipment - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Asset Category	Asset Class	Average Age (Years)	Average Condition	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Operations and Infrastructure Equipment	Fleet Equipment	9	3	10 – 50	17
	Roads Equipment	10	3	5 – 25	7
	Water Equipment	11	4	10 – 20	4
Community Services Equipment	Facilities Equipment	15	3	10 – 50	8
	Parks Equipment	13	2	5 – 50	5
	Recreation and Culture Equipment	23	4	10 – 50	12

Asset Category	Asset Class	Average Age (Years)	Average Condition	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
General Equipment	Administrative Services Equipment	15	4	10 – 25	5
	Public Works Equipment	10	3	10 – 50	26
Fire and Emergency Services Equipment	Fire and Emergency Services Equipment	18	5	10 – 50	1
Library Services Equipment	Library Services Equipment	13	4	20 – 30	9
Overall		14	4	5 – 50	9

Figure 2-5 displays the condition of equipment assets within each asset class by count. It is recommended that the Town strives to improve condition assessment programs for these assets to improve condition data.

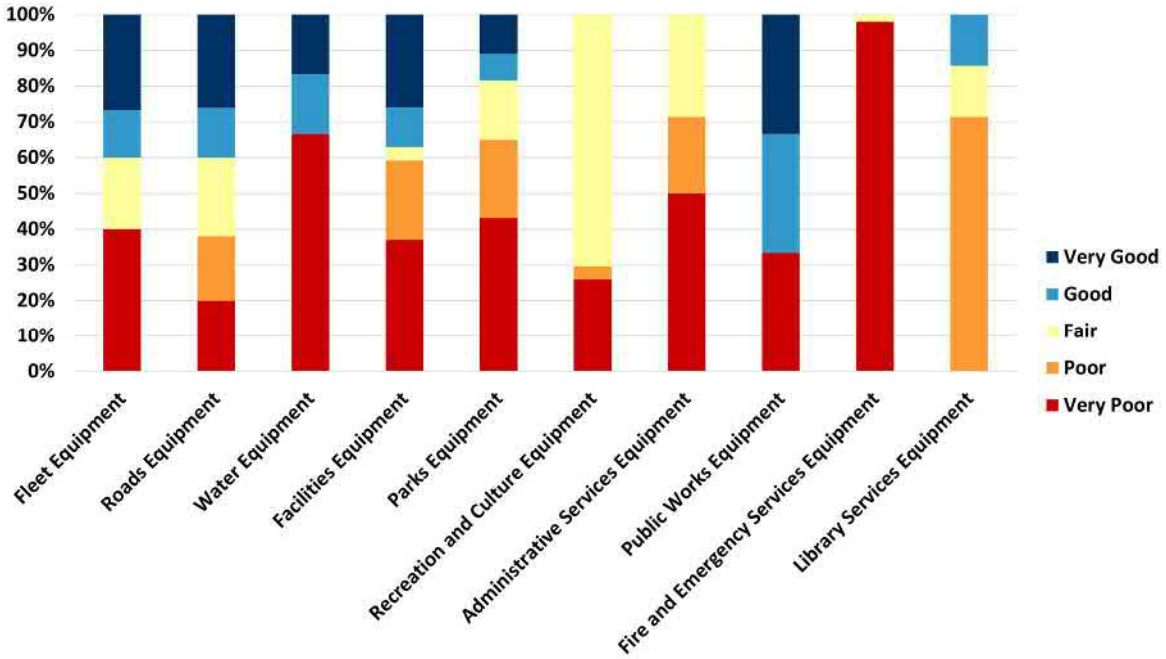


Figure 2-5: Equipment - Condition Summary by Asset Class and Count

2.6 Active Transportation

2.6.1 Inventory and Estimated Replacement Cost

The Town owns and operates an Active Transportation network of multi-use paths for walking, hiking, jogging, and cycling. There are 25 assets within the Active Transportation service category which are summarized into one asset class, multi-use paths.

Dillon employed a unit cost model to assign replacement costs based on the material types found in the inventory and unit cost estimated for 2023. Several multi-use paths in the Town's inventory are known to be constructed with various materials. For these assets, the average unit cost of other materials found within the inventory was used to determine the estimated replacement cost. Table 2-24 summarizes the inventory of multi-use path assets by construction material including the unit costs used in Dillon's unit cost model. The estimated replacement cost of the multi-use path assets is approximately $5.4 million.

Table 2-24: Multi-Use Paths – Inventory Summary by Material

Construction Material	Path Count	Assumed Width (m)	Length (m)	Area (m^2)	Unit Cost (per m^2)	Replacement Cost (2023)
Hard Surface (Asphalt/Concrete)	15	3	6,701	20,102	$150	$3,015,000
Crushed Limestone	3	3	1,526	4,577	$50	$229,000
Gravel	1	3	315	948	$60	$57,000
Natural	4	3	6,216	18,648	$60	$1,119,000
Various	2	3	3,217	9,651	$100	$966,000
Total	25	-	17,975	53,926	-	$5,386,000

2.6.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

The multi-use path asset conditions were determined primarily through utilizing the condition ratings provided in the Town's GIS database. Where a condition rating was not assigned, age-based linear deterioration was employed to determine current condition. The average age, condition, expected and remaining useful life of the multi-use paths assets is summarized in Table 2-25.

Table 2-25: Multi-Use Paths - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Construction Material	Average Age (Years)	Average Condition	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Hard Surface (Asphalt/Concrete)	26	3	50	25
Crushed Limestone	16	5	15	0
Gravel	19	5	15	0
Natural	30	3	75	45
Various	40	4	40	12
Overall	26	4	15 – 75	18

Figure 2-6 displays the condition of multi-use path assets by construction material and length (m).

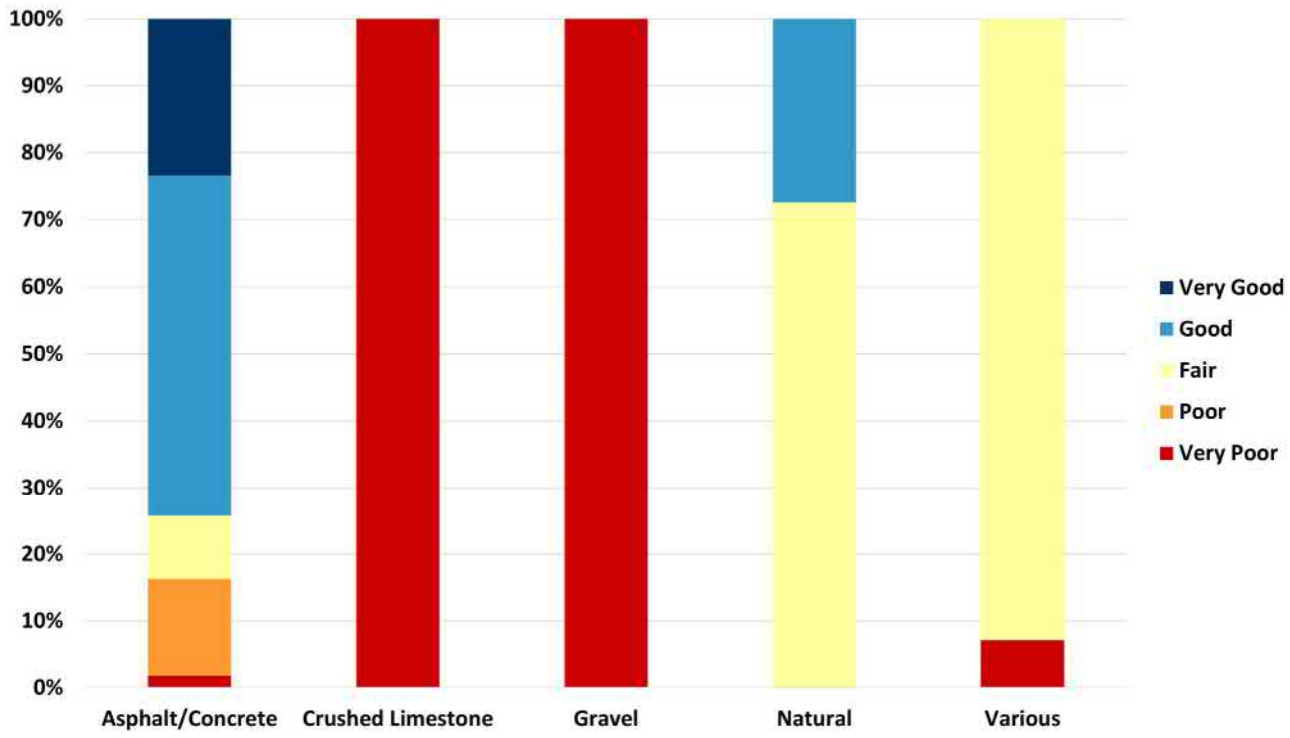


Figure 2-6: Multi-Use Paths - Condition Summary by Construction Material and Length (m)

2.7 Roadway Appurtenances

2.7.1 Inventory and Estimated Replacement Cost

Within the Roadway Appurtenances service category, the Town owns a large inventory of roadway signage. There are 3,960 assets within the roadway signage inventory which are summarized into four asset classes, priority signs, regulatory signs, warning signs, and informational signs. The Town's roadway signage inventory was developed during a condition assessment program completed by Advantage Data Collection Ltd. in 2021 and 2022.

Dillon employed a unit cost of $500 per sign as an estimate for replacement values in 2023 dollars. Table 2-26 summarizes the inventory of roadway signage assets by asset class. The estimated replacement cost of the roadway signage assets is approximately $2 million. It is important to note that refinement of the informational signs inventory is required, as outlined in a continuous improvement initiative identified in Section 6.1.1.

Table 2-26: Roadway Appurtenances – Inventory Summary by Asset Class

Asset Class	Sign Count	Unit Cost (Each)	Replacement Cost (2023)
Priority Signs	1,043	$500	$521,500
Regulatory Signs	2,025	$500	$1,012,500
Warning Signs	887	$500	$443,500
Informational Signs	5	$500	$2,500
Total	3,960	-	$1,980,000

2.7.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

The roadway signage asset conditions were determined primarily through utilizing the condition ratings assigned by Advantage Data Collection Ltd. during their condition assessments completed in 2021 and 2022. As part of the assessments, 3,843 of the 3,960 roadway signage assets were assessed and each sign was assigned a condition grade of Good, Fair, or Poor. Table 2-27 summarizes the alignment of the condition grades assigned by Advantage Data Collection Ltd. to the Town's five-point condition rating scale.

Table 2-27: Condition Descriptions for Roadway Appurtenances

Condition Rating	Condition Grade	Overall Condition (Advantage Data Collection Ltd.)	Description
1	Very Good	N/A	89% of all assessed roadway appurtenance asset are in "very good or good" condition.
2	Good	Good	
3	Fair	Fair	Less than 1% of all assessed roadway appurtenance assets are in "fair" condition.
4	Poor	N/A	11% of all assessed roadway appurtenance assets are in "poor or very poor" condition.
5	Very Poor	Poor	

The roadway signage inventory does not list the installation years for the signage assets, resulting in the ages of roadway signage being unknown at the time of this AMP. The average age, condition, expected and remaining useful life of the roadway signage assets within each asset class is summarized in Table 2-28.

Table 2-28: Roadway Appurtenances - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Asset Class	Average Age (Years)	Average Condition	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Priority Signs	Unknown	2	10	5
Regulatory Signs		2	10	5
Warning Signs		2	10	4
Informational Signs		3	10	3
Overall	-	2	10	4

Figure 2-7 displays the condition of roadway signage assets by asset class and count. As previously mentioned, condition assessments were completed for 3,843 of the 3,960 roadway signage assets. The condition of the remaining 117 signs (approximately 3% of the total inventory) is currently unknown.

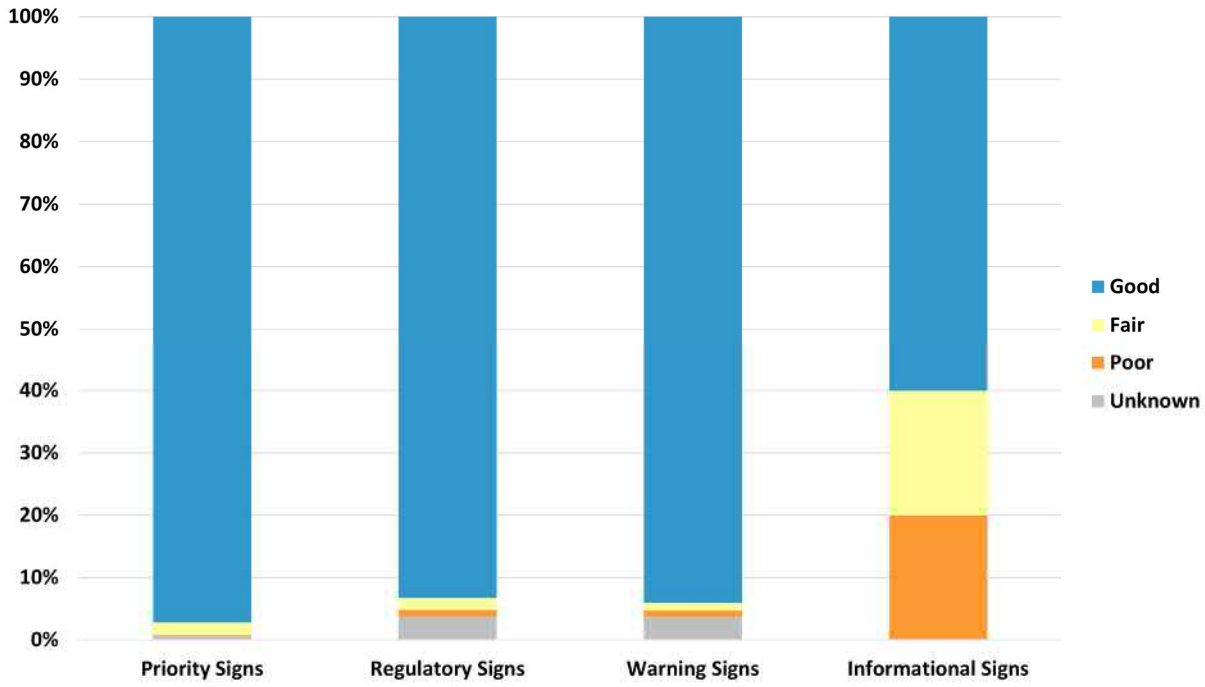


Figure 2-7: Roadway Appurtenances - Condition Summary by Asset Class and Count

2.8 Urban Forestry

2.8.1 Inventory and Estimated Replacement Cost

The Town owns and maintains a tree canopy featuring various species of trees planted in urban environments. There are 30,943 trees within the Urban Forestry service category which are summarized into six asset classes that reflect the type of environment they exist within, including median, open/unrestricted, raised/planted, tree lawn, woodlot, and other.

Recognizing that trees cannot often be replaced with a tree of similar age, a conservative replacement cost for a 50 mm caliper tree has been estimated at $600 per tree. Based on the assumed unit cost, the estimated replacement cost of the tree canopy is approximately $18.6 million. Table 2-29 summarizes the inventory of trees by asset class including the unit costs used in Dillon's unit cost model.

Table 2-29: Urban Forestry – Inventory Summary by Asset Class

Asset Class	Tree Count	Unit Cost (Each)	Replacement Cost (2023)
Median	78	$600	$47,000
Open/Unrestricted	7,669	$600	$4,601,000
Raised/Planted	5	$600	$3,000
Tree Lawn	11,081	$600	$6,649,000
Woodlot	655	$600	$393,000
Other	11,446	$600	$6,868,000
Total	30,934	-	$18,561,000

2.8.2 Average Age, Condition, and Expected Useful Life

The Town maintains an Urban Forestry database within GIS where trees are inventoried along with additional attributes for identifying the tree species and physical characteristics such as diameter at breast height (dbh), height, and crown diameter. An age class attribute is also stored for each tree which identifies an estimated age range in 10-year increments.

The tree asset conditions were determined primarily through utilizing the overall health attribute stored in the Town's GIS database. The overall health attribute was assigned to each tree during assessments completed by Town staff, where overall health was assessed as "Excellent", "Good", "Fair", "Poor", and "Dead". Table 2-30 summarizes the alignment of the overall health attribute document for each tree with the Town's five-point condition rating scale.

Table 2-30: Condition Descriptions for Urban Forestry

Condition Rating	Condition Grade	Overall Health	Description
1	Very Good	Excellent	4% of all Urban Forestry assets are in "very good" condition.
2	Good	Good	46% of all Urban Forestry assets are in "good" condition.
3	Fair	Fair	25% of all Urban Forestry assets are in "fair" condition.
4	Poor	Poor	11% of all Urban Forestry assets are in "poor" condition.
5	Very Poor	Dead	6% of all Urban Forestry assets are in "very poor" condition.

The expected useful life of tree assets is highly dependent on the species of tree and the environment in which it grows. Further, invasive species, insects, and climate considerations may alter the lifespan of certain tree species in a manor that is not easily predicted. Within the asset inventory there were over 100 tree species inventoried; Thus, a general expected useful life was assigned based on each asset class. The average age, condition, and the expected of the Urban Forestry assets within each asset class is summarized in Table 2-31.

Table 2-31: Urban Forestry - Average Age, Condition, and Expected Useful Life

Asset Class	Average Age Range (Years)	Average Condition	Expected Useful Life (Years)
Median	10 – 20	2	20
Open/Unrestricted	20 – 30	3	80
Raised/Planted	10 – 20	2	10
Tree Lawn	20 – 30	2	20
Woodlot	20 – 30	3	10
Other	20 – 30	2	30
Overall	22	2	10 - 80

Figure 2-8 displays the condition of Urban Forestry assets by asset class and count.

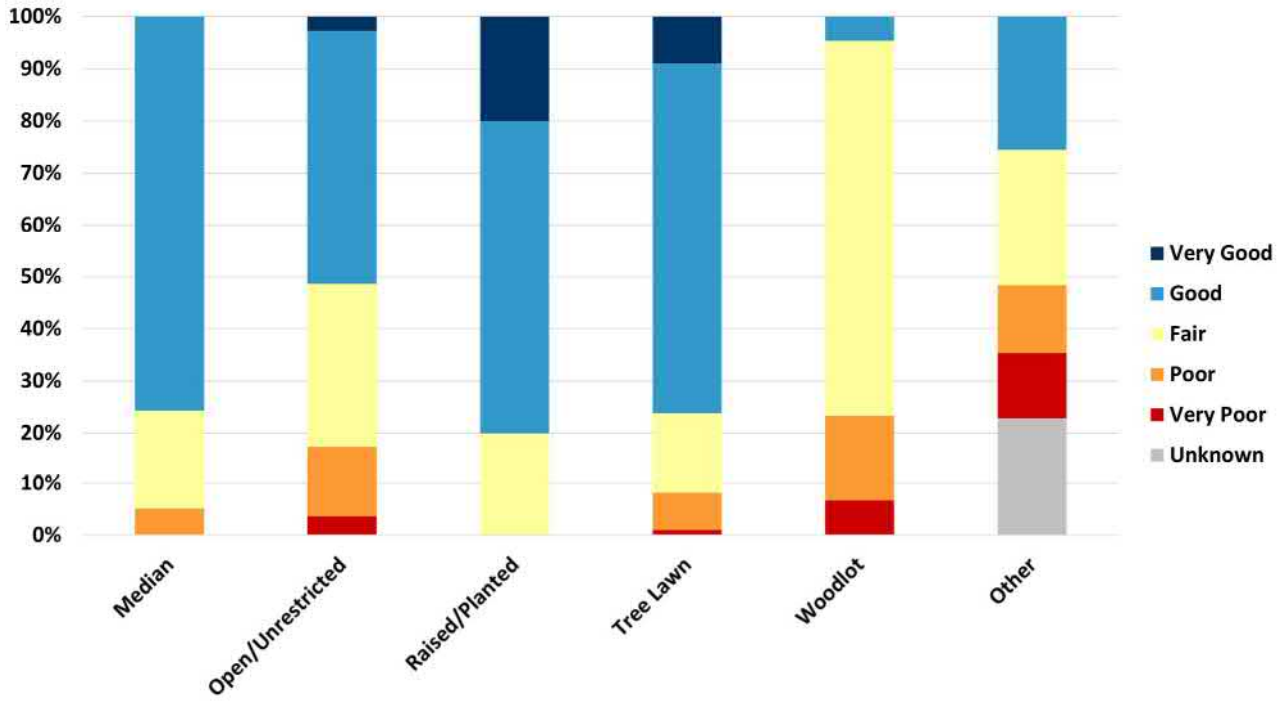


Figure 2-8: Urban Forestry - Condition Summary by Asset Class and Count

2.9 IT Assets

2.9.1 Inventory and Estimated Replacement Cost

The Town's owns a variety of physical and virtual Information Technology (IT) assets enabling the delivery of IT services to Town staff and the community. There are 2,165 assets within the IT inventory which are summarized into three asset categories including broadband, hardware, and software. Additionally, a total of eleven asset classes are defined across the three asset categories. It should be noted that the Excel inventory maintained by Town staff features some pooled assets (e.g., there are 540 monitors of various models and sizes in the Endpoint Tech asset class stored in the inventory within one asset entry).

Table 2-32 summarizes the inventory of IT assets by asset category and asset class. The estimated replacement cost of the IT assets is approximately $5.5 million.

Table 2-32: IT Assets – Inventory Summary by Asset Category and Asset Class

Asset Category	Asset Class	Asset Count	Replacement Cost (2023)
Broadband	Facility Equipment	10	$193,000
	Tower Sites	14	$393,000
	Wireless Links	13	$192,000
Hardware	On-Premises Servers	29	$376,000
	Endpoint Tech	1,018	$752,000
	Security Systems	17	$306,000
	Network/Security Infrastructure	163	$609,000
	Telephone Systems	11	$206,000
Software	Perpetual Software	86	$241,000
	Subscription-Based Software	795	$689,000
	Software Solutions	9	$1,499,000
Total	-	2,165	$5,456,000

2.9.2 Average Age and Condition, Expected Useful Life and Remaining Useful Life

The IT asset conditions were determined primarily through utilizing the condition ratings provided in the Town's Excel inventory file, as assigned by the Town's Manager of IT. It should be noted that there are no physical assets associated with software. Where a condition rating was not assigned, age-based linear deterioration was employed to determine current condition. The average age, condition, expected and remaining useful life of the IT assets is summarized in Table 2-33.

Table 2-33: IT Assets - Average Age and Condition, Expected Useful Life and Remaining Useful Life

Asset Category	Asset Class	Average Age (Years)	Average Condition	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Broadband	Facility Equipment	4	2	7	5
	Tower Sites	13	2	25	16
	Wireless Links	6	2	7	4
Hardware	On-Premises Servers	7	2	7	4
	Endpoint Tech	6	2	7	4
	Security Systems	4	2	10	5
	Network/Security Infrastructure	6	1	10 – 25	8
	Telephone Systems	9	3	7	3
Software	Perpetual Software	1	*Not Applicable*	*Not Applicable*	*Not Applicable*
	Subscription-Based Software	3	*Not Applicable*	*Not Applicable*	*Not Applicable*
	Software Solutions	6	*Not Applicable*	*Not Applicable*	*Not Applicable*
Overall	-	6	2	7 – 25	6

Figure 2-9 displays the condition of IT assets by asset class and count, excluding virtual assets in the software asset category.

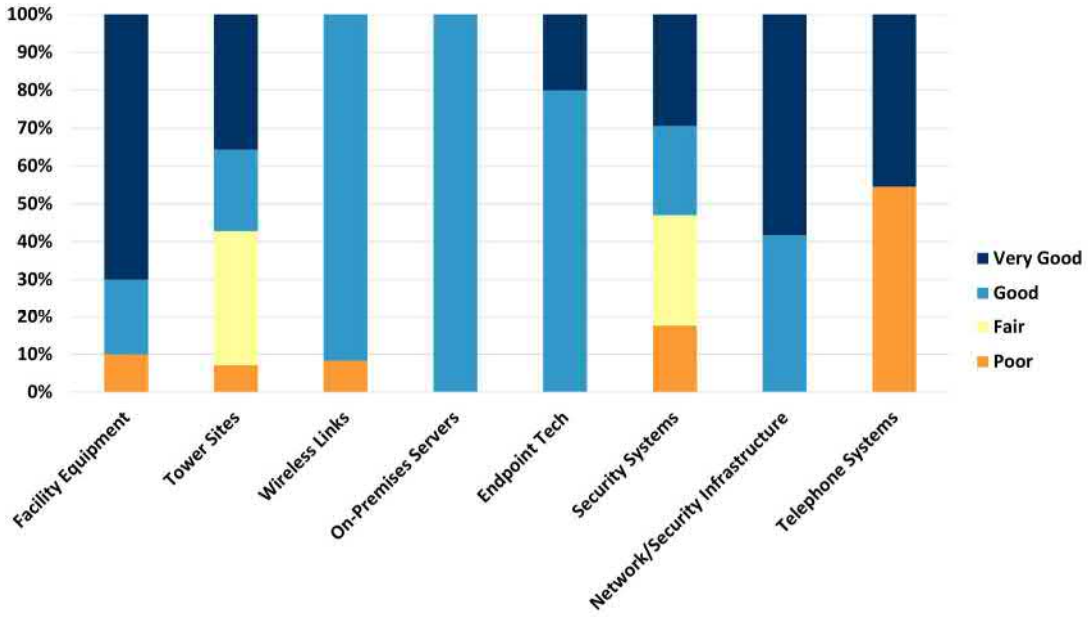


Figure 2-9: IT Assets - Condition by Asset Class

3.0 Levels of Service

3.1 Levels of Service Defined

Assets owned by the Town provide the community with services. Without these assets, or when these assets underperform, there is a disruption to service delivery, sometimes on a temporary basis until full service is recovered, or on a permanent basis when the asset (or its service) is no longer required.

The asset management decision-making process is driven by the impact of the levels of service on the community and the environment.

Levels of Service (LOS) report on and measure the services the Town provides to the community through the use of infrastructure assets and natural assets. The application of the LOS framework plays an important role in supporting the advancement of the Town's strategic vision, mission, and goals. The line of sight or alignment of LOS with the overarching goals, as outlined in the Town's Strategic Plan is an essential concept in asset management.

As required by O. Reg. 588/17, the levels of service for assets are required as follows:

- Community Levels of Service: are customer-focused, and provide a qualitative description of the service the organization provides to the Community, delivered by the asset; and
- Technical Levels of Service: provide measures of key technical attributes of the service being offered to the community which include the capability of the asset to deliver the service (i.e., what is the design limitation of the asset) and the performance of the asset (i.e., how is the asset performing now).

The LOS includes the qualitative descriptions and quantitative measures of what the asset is technically capable of delivering and reflect the impact of the municipality's asset management strategies on the performance of the assets or the quality or capacity of the services they provide. Figure 3-1, below, provides a visual representation and definitions of the Community and Technical LOS.

The Technical LOS is comprised two parts: the asset LOS, which is the LOS the asset can provide the organization; and the performance, which is the current measure of efficiencies or effectiveness of the asset operation. The Community LOS is defined by what the community receives from the assets, and this might not be the same (in all cases, always) as what the municipality delivers.

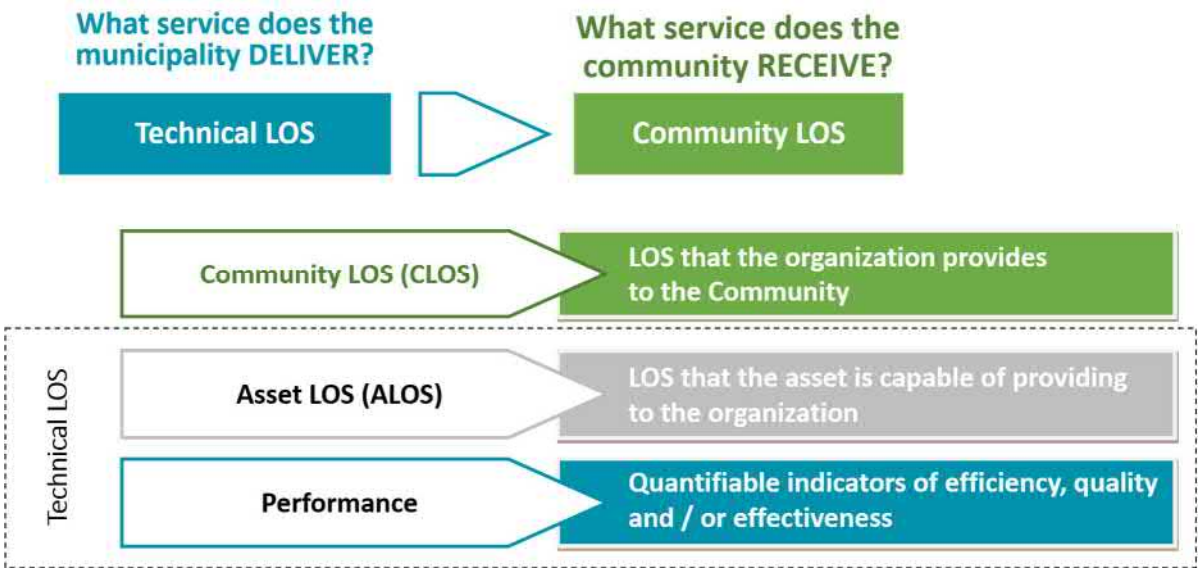


Figure 3-1: Level of Service Definitions

Unlike core assets, the Community LOS (CLOS), Asset LOS (ALOS) and performance measures for non-core assets are not defined by O. Reg. 588/17. The meaningful, measurable, and relevant LOS measures are defined by the Town for each non-core service area. The current LOS performance presented in the asset management plan is expected to be recent measures, based on data from at most two calendar years prior.

The purpose of setting targets for level of service is to define the objectives for the Town's infrastructure (which includes establishing the current LOS) for each of the service areas (community and technical LOS). This includes reviewing how the Town measures service at the present time and how it is intended to be measured in the future. Proposed LOS are the service targets for the Town and are used in the decision-making process for operational activities and asset investments for planning to achieve the proposed LOS in the future (i.e., 10-year horizon).

The service performance will be measured on a regular basis and any gaps identified in being able to meet the LOS are considered as a priority for action. The decision-making process illustrated below in Figure 3-2, demonstrates how a “priority for action” is determined, based on the current LOS or future LOS or if the LOS stays the same.

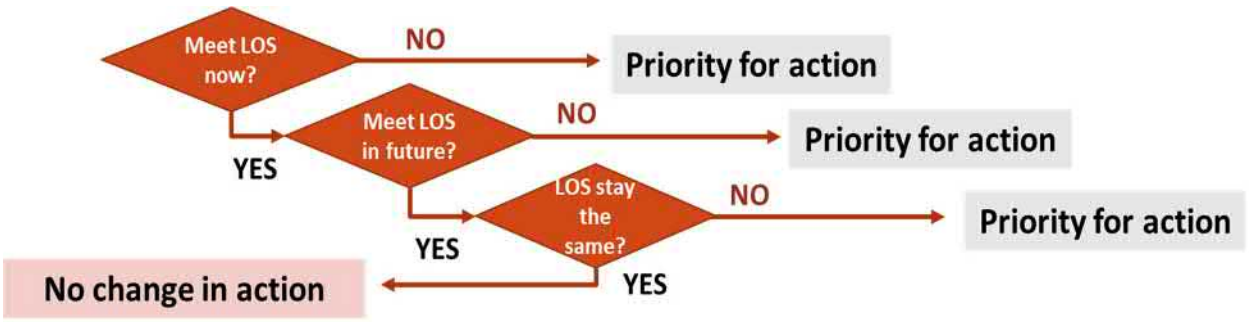


Figure 3-2: Decision-Making for Level of Service Priority for Action

3.2 Methodology for Developing LOS Framework

As this is the first iteration of an asset management plan for non-core assets, the approach taken is to start with a simplified, yet solid foundation for the LOS Framework, and to consider expanding the framework in a future update. This approach also recognizes that there is limited data being tracked on the service and performance of non-core assets, which becomes a recommendation for improvement of processes to collect relevant data for future reporting.

The methodology for developing the LOS Framework for the non-core assets included the following key steps:

1. Confirm inventory of assets to be included within the scope of LOS development.
2. Collect and review available background information related to assets.
3. Interview relevant Town staff to understand current operations and performance of assets (i.e., through workshop sessions and/or 1:1 interviews).
4. Identify the most relevant service parameter(s) for service category as referenced in ISO55000: safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environment acceptability, cost, and availability.
5. Review and compile key asset performance indicators (KPIs) and trends over the past five (5) years that directly support the LOS. Indicators may include, but not be limited to asset capacity, asset reliability, asset condition, asset energy use (where applicable), and maintenance procedures and policies (including reactive maintenance).
6. Determine factors that may influence or impact LOS. For example, Council endorsed plans and policies, shifts in demand, timing of growth projections, condition of infrastructure, financial and human resource capability to operate, maintain, and renew infrastructure, possible regulatory changes, climate change impacts, sustainability and adaption, maintenance practices, changing technology, and emergency conditions.
7. Determine current levels of service being provided by the assets.
8. Establish the current performance for the service category based on data from at most two calendar years prior) and identify proposed LOS (i.e., 10-year target).

The newly established LOS Framework will be applied to future annual reporting on progress to Council (as required in O. Reg. 588/17) to report on current performance compared with targets. Any gaps that are identified will require additional resources (e.g., funding) to meet the target.

3.3 The LOS Framework

The LOS Framework was developed following the methodology outlined in Section 3.2 and in consultation with Town staff, including a series of workshops with divisional stakeholders. This framework can be expanded upon or adjusted at the Town's discretion based on available data, the desire to track specific metrics for the various non-core assets, or to change the stakeholder interest in the framework. It is recommended that this framework is reviewed yearly and recommended to be updated every five years as per O. Reg. 588/17.

For each of the eight service categories, the most relevant stakeholder interests related to the assets have been identified and provide a corresponding LOS objective. The scope was identified for each of the service categories (which provides context for the LOS discussion) and a description that is community-focused (community LOS) as well as internally focused (technical LOS).

As this is a first-generation AMP for non-core assets, the Town can take the approach of establishing their LOS framework based on data availability, meaningfulness, and stakeholder interest. If the information is not currently available, it can become a recommendation to collect the performance metrics going forward.

In the following sections for each service category, the following information is presented:

- A description of the scope of the service category with reference to a map in the Appendix (where applicable);
- The parameter selected to represent the stakeholders' interests selected for each service category;
- The LOS objectives for each parameter; and
- A table that presents the Community and Technical LOS with a description of how the service parameter is reported, the Current LOS (2023) performance and the Proposed LOS.

3.4 Population Growth

Population growth can lead to increase in scale and scope of the services provided by the Town and is a crucial factor in determining the level of service the Town can provide. For discussion on population growth projections for the Town, please refer to Section 3.4.1.1 of the Town's Core AMP.

3.5 Facilities

3.5.1 Scope

There is a total of 83 facility assets. The locations of facility assets are shown on the map in Appendix B – Figure 1. The asset type and number of the facilities within each type include: Corporate Offices (4); Community Centres and Halls (18); Fire Stations (4); Pioneer Village (17); Libraries (3); Parks Washrooms (5); Picnic Shelters (5); Recreational (12); Booths (3) and Operational Yards (12).

3.5.2 Parameter and LOS Objective

The parameter selected for facilities is Quality & Availability.

The LOS objectives are:

- To provide an adequate supply of buildings and facilities that are fit for purpose for programming (available to the public) and administration (serving staff working environments and public meeting spaces);
- To provide a safe, reliable, and well-maintained facilities; and
- To provide accessibility access to and within facilities.

Table 3-1: Community LOS for Facilities - Quality & Availability

Community LOS Description	Current LOS (2023)	Proposed LOS
Number of complaints received through Service Georgina related to comfort level and building environment	This metric is not currently measured by the Town. It is recommended to be tracked in the future.	Number of complaints equal or less than previous year
Average response time for security incidents	This metric is not currently measured by the Town. It is recommended to be tracked in the future.	Response time equal or better than previous year.
Number of accessible parking spots	This metric is not currently measured by the Town. It is recommended to be tracked in the future.	Provide at least 2 accessible parking spots at each facility.

Table 3-2: Technical LOS for Facilities - Quality & Availability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Average condition rating of building components	Group Element – Average Condition Foundations – Good Super Structure - Good Exterior Enclosure – Good Roofing - Fair Interior Construction – Good Stairs - Good Interior Finishes – Good Conveying – Poor Plumbing – Fair HVAC - Fair Fire Protection – Fair Electrical – Fair Equipment - Fair Special Construction – Good Site Improvements – Good Site Mechanical Utilities – Fair Site Electrical Utilities – Good Overall - Fair	Average condition rating of building components equal or better
Percentage of facilities that are compliant with AODA requirements	5 of the 81 facilities are AODA compliant, i.e., 6% of the building portfolio	Increase number of buildings that meet AODA requirements

Future considerations could include sustainability initiatives such the GHG generated, water and wastewater usage at facilities.

3.6 Parks

3.6.1 Scope

The locations of the parks can be found on a map in Appendix B – Figure 2. The asset categories included within parks are: 1) Public Recreation; 2) Sports Fields; 3) Park Amenities; and 4) Transportation Facilities.

3.6.2 Parameter and LOS Objective

The parameter selected for parks is Quality & Availability.

The LOS objectives are to provide an adequate supply of outdoor recreation spaces that are fit for purpose for programming (organized activities) and community activities (leisure).

Table 3-3: Community LOS for Parks - Quality & Availability

Community LOS Description	Current LOS (2023)	Proposed LOS
Number of asset types per population (2021 census)	Community Parks (1:4,331 people) Neighbourhood Parks (1:1,083 people) Baseball Diamonds (1:2,978 people) Basketball Courts (1:7,940 people) Beach Volleyball (1:15,881 people) Bleachers (1:1,014 people) Drinking Water Fountains (1:6,806 people) Docks (1:23,821 people) Foot Bridges (1:6,806 people) Parking Areas (1:1,013 people) Pickle Ball Courts (1: 5,294 people) Picnic Shelters (1:4,764 people) Soccer Pitches (1:4,331 people) Splash Pads (1:15,881 people) Tennis Courts (1: 9,528 people	Maintain ratio of availability of asset types as population grows

Table 3-4: Technical LOS for Parks - Quality & Availability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Number of work orders per year required to maintain parks and their corresponding assets	Total number of work orders per year: 2021: 83 work orders 2022: 120 work orders	Report on actual work orders. Target to close work orders within 30 days.
Work orders older than 30 days	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Equal or better than previous year
Inspection frequency	Playgrounds receive a complete CSA inspection once a month, between the months of May to October. From November to April, they receive a monthly visual inspection.	Meet CSA inspection requirements

3.7 Fleet

3.7.1 Scope

There is a total of 122 fleet assets, and they are stored at various facilities within the Town. Of the 122 fleet assets, 17 are emergency vehicles.

3.7.2 Parameter and LOS Objective

The parameter selected for fleet is Quality & Reliability.

The LOS objective is to provide a safe, reliable, and well-maintained vehicles that are fit for purpose.

Table 3-5: Community LOS for Fleet - Quality & Reliability

Community LOS Description	Current LOS (2023)	Proposed LOS
Divisions that rely on fleet services.	A variety of services are offered using fleet serving: Development Engineering, Facilities, Fire and Emergency Services, Fleet, Parks, Recreation and Culture, Operations & Infrastructure	Maintain fleet to support service delivery

Table 3-6: Technical LOS for Fleet - Quality & Reliability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Description of fleet condition	The average condition for fleet assets is 'Poor'. The condition ratings for Fleet were assessed by the Supervisor, Fleet Services, Operations, and Infrastructure Department.	Average condition of fair or better
Number of oil changes completed (per number of km or per timeframe)	Oil change is completed every 3 months for light and medium vehicles or 5,000 km and 2 times per year for heavy vehicles.	Maintain
Operating cost per hour of operation ($/hour)	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Equal or better than previous year
Number of regulated MTO maintenance inspections / safety inspections completed per year	Annual inspections were performed in 2021 and 2022	Equal to what is required by regulation

3.8 Equipment

3.8.1 Scope

There is a total of 1,842 equipment assets and they are stored at various locations within the Town. Equipment assets provide a variety of services serving Administrative Services, Facilities, Fire and Emergency, Roads, Recreation and Culture, Parks, Fleet and Water services within the Town.

3.8.2 Parameter and LOS Objective

The parameters selected for equipment is Quality & Reliability.

The LOS objective is to provide a safe, reliable, and well-maintained equipment that is fit for purpose.

Table 3-7: Community LOS for Equipment - Quality & Reliability

Community LOS Description	Current LOS (2023)	Proposed LOS
Divisions that rely on equipment to provide service	A variety of services are offered using equipment serving: Development Engineering, Facilities, Fire and Emergency Services, Fleet, Parks, Recreation and Culture, Operations & Infrastructure	Maintain equipment to support service delivery

Table 3-8: Technical LOS for Equipment - Quality & Reliability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Description of equipment condition	The average condition for equipment assets is 'Fair'.	Average condition of fair or better
Downtime of equipment assets (hours or % of available time)	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Equal or better
Maintenance expenses per utilization ($/hour usage)	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Equal or better

3.9 Active Transportation

3.9.1 Scope

There is a total of 17,975 linear meters of multi-use paths in the active transportation network. A map of the multi-use paths can be found on a map in Appendix B - Figure 3.

3.9.2 Parameter and LOS Objective

The parameter selected for multi-use paths is Quality & Availability.

The LOS objective is to provide an adequate supply of multi-use paths that are safe, well-maintained for community access and provides connectivity through the network.

Table 3-9: Community LOS for Active Transportation - Quality & Availability

Community LOS Description	Current LOS (2023)	Proposed LOS
Description of users for multi-use paths	Suitable for walking, hiking, jogging, and cycling. No motorized vehicles allowed.	Maintain
Width of the multi-use paths and surface treatments	The width of the multi-use path assets ranges from 2-3m. The various surface treatments are Asphalt, Concrete, Crushed Limestone, Gravel and Natural.	Maintain
Average condition rating for each asset type	The current condition rating is: • Hard Surfaces (Asphalt/Concrete): Fair • Crushed Limestone: Very Poor • Gravel: Very Poor • Natural: Fair	Average condition of Fair or better

Table 3-10: Technical LOS for Active Transportation - Quality & Availability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Description of the overall condition of the active transportation network	The average condition of the multi-use paths is 'Fair'.	Average condition of Fair or better
Insurance claims per year	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Equal or better than prior year

3.10 Roadway Appurtenances

3.10.1 Scope

The locations of roadway appurtenance assets are shown on the map in Appendix B - Figure 4. The function of the signs includes: priority signs, regulatory signs, warning signs and informational signs.

3.10.2 Parameter and LOS Objective

The parameter selected for roadway appurtenances is Quality & Reliability.

The LOS objective is to provide signs that are present and reliable to communicate required messages.

Table 3-11: Community LOS for Roadway Appurtenances - Quality & Reliability

Community LOS Description	Current LOS (2023)	Proposed LOS
Description of overall condition of the signage	The overall condition is 'Good'. Sign condition assessments were completed by Advantage Data Collection in 2021 and 2022 for 3960 road appurtenances assets.	Maintain
Overall condition of roadway appurtenances	The average condition is 'Good'. This is based on the sign condition assessment completed by Advantage Data Collection in 2021 and 2022 for 3960 roadway appurtenance assets.	Good or better

Table 3-12: Technical LOS for Roadway Appurtenances - Quality & Reliability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Reflectivity Assessment per sign type	Priority Signs: 89% were assessed as 'Pass', 7% 'Warn' and 3% 'Fail', the remaining were not assessed. Regulatory Signs: 76% were assessed as 'Pass', 13% 'Warn' and 6% 'Fail', the remaining were not assessed. Warning Signs: 68% were assessed as 'Pass', 10% 'Warn' and 18% 'Fail', the remaining were not assessed. Informational Signs: 20% were assessed as 'Pass', 40% 'Warn' and 40% 'Fail'. This is based on the assessment year of 2021 and 2022, with the assessment performed by Advantage Data Collection.	Maintain
The frequency of inspection for regulatory signs and warning signs	Inspections on retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. A sign inspection was performed in 2021 and 2022. This demonstrates that over the past 2 years there has been 2 inspections.	Meet regulatory requirements

3.11 Urban Forestry

3.11.1 Scope

There is a total of 30,934 urban forestry assets that have been inventoried by the Town of Georgina.

3.11.2 Parameter and LOS Objective

The parameter selected for urban forestry is Quality & Availability.

The LOS objective is to provide adequate tree canopy coverage that promotes naturalization, air quality, shade, temperature reduction, noise attenuation, animal habitat, mental health benefits and carbon sink.

Table 3-13: Community LOS for Urban Forestry - Quality & Availability

Community LOS Description	Current LOS (2023)	Proposed LOS
Maintain healthy tree canopy	The trees are inspected regularly during the summer months. Maintenance based in inquiries from the public.	Maintain

Table 3-14: Technical LOS for Urban Forestry - Quality & Availability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Overall condition of trees including structural deficiencies	49.8% of trees are in Good or better condition, as compared to 6.1% of trees which are dead. Of the 19,489 trees that were assessed for structural deficiency, 2.0% had 'extreme' structural defects, while 17% had 'major' defects and 40% had 'minor' defects.	Good or better condition
Age distribution of trees (years)	Under 10 years: 8% 10 years: 22% 20 years: 22% 30 years: 24% 40 years: 8% 50 years: 11% 60 years: 3% 70 years: <1% 80 years: <1% 90 years: <1% 100 years: <1%	Maintain healthy and balanced age distribution
Response time for tree hazards (preventative vs reactive)	All hazards are rectified between 1 to 5 working days based on inspection results.	Maintain equal or better
Average pruning cycle and frequency of watering	This metric is not currently measured by the Town, but it is recommended to be tracked in the future	Maintain equal or better

3.12 IT Assets

3.12.1 Scope

There is a total of 2,165 physical and virtual information technology (IT) assets. The Town of Georgina provides various services to its staff and the community such as broadband, hardware, on-premises servers, security systems, telephone systems, and software. There are 152 assets, and they are in various locations to serve the need of their users including: hardware (25); endpoint (10); servers (22); security systems (17), network/security infrastructure (51); telephone (11); and software (16).

3.12.2 Parameter and LOS Objective

The parameter selected for IT assets is Quality & Reliability.

The LOS objective is to provide IT assets that are fit for purpose and deliver the expected service to users and to provide reliable equipment to meet the needs of the Town.

Table 3-15: Community LOS for IT Assets - Quality & Reliability

Community LOS Description	Current LOS (2023)	Proposed LOS
Availability of IT assets	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Greater than 99% availability

Table 3-16: Community and Technical LOS for IT Assets - Quality & Reliability

Technical LOS Description	Current LOS (2023)	Proposed LOS
Description of IT assets and services provided	Town of Georgina provides equipment and technological solutions to support its staff to efficiently deliver services to our residents.	Maintain
Number of preventative work orders per year required to maintain IT assets	This metric is not currently measured by the Town, but it is recommended to be tracked per asset in the future.	Equal or more than previous year
Percentage of downtime on an IT asset	This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Greater than 99% availability
Overall average condition rating of IT assets	Overall average condition rating for the IT equipment is 'Good'	Maintain 'Good' condition
Percentage of assets reaching the End of Service date.	The higher the percentage, the more urgency to have the equipment replaced. This metric is not currently measured by the Town, but it is recommended to be tracked in the future.	Equal or lower than previous year

4.0 Asset Management Strategy

4.1 Asset Risk

Effective asset management includes a risk management strategy, i.e. identifying risk exposure and infrastructure "criticality" which informs investment decisions. Risk exposure for each asset is assessed to prioritize maintenance activities, achieve the proposed LOS, and proactively respond to changes in service requirements. Asset Risk Exposure is used to inform target investment needs required to prevent asset failures and maintain LOS. Managing asset risk is an integral part of the Town's overall risk management strategy. By systematically addressing the risks associated with the Town's assets, the Town can enhance their resilience, protect their valuable resources, and ensure the continuity of their operations. The purpose of this section is to describe how the Town's risk models can be used in day-to-day decision-making to prioritize resources and avoid unplanned asset failure.

4.1.1 Risk Model Approach

Risk management involves identifying and assessing potential risks and uncertainties while planning ways to avoid or mitigate risk from climate change, natural disasters, public safety threats, and aging assets. The goal of the risk model is to provide a structured framework for understanding and addressing risks that could impact the achievement of objectives. Effective asset management incorporates these factors and the concept of infrastructure "criticality" when evaluating the effectiveness of competing alternatives. The risk exposure formula is often expressed as the product of the probability of failure (PoF) and the consequence of failure (CoF). In risk management, this formula is commonly used to quantify the potential impacts of a risk event:

Risk Exposure = Probability of Failure x Consequence of Failure

The PoF represents the likelihood or chance that a particular risk event will occur. In this case, it is expressed as a value between 1 and 5, where 1 represents an asset that is unlikely to fail imminently, and 5 represents an asset that is at a serious risk of failure. The PoF can be based on available data, expert judgement, or quantitative analysis. The CoF refers to the impact or severity of the risk event if it were to occur based on a triple bottom line approach. CoF is assessed differently based on the service category. However, common considerations across service categories include financial loss, operational disruption, threats to health and safety, and other organization impact metrics. CoF can be expressed in monetary terms or qualitative terms, depending on the nature of the risk. Using this formula allows the Town to prioritize and focus their efforts on managing risks with the highest exposure. It provides a quantitative way to compare different risks and allocate resources more effectively in risk mitigation and management activities.

Figure 4-1 depicts a risk heat map displaying the risk ranges as identified by the Town in a five-by-five matrix. The risk heat map is a data visualization tool used in risk management to prioritize and guide interventions or actions based on the assessed level of risk associated with specific factors or scenarios. This matrix typically involves mapping the PoF and CoF of identified risks to determine the appropriate level of response. The Town has identified the following ranges: low risk (risk score of 0 to less than 6); medium risk (risk score of 6 to less than 16); and high risk (risk score of 16 to 25).

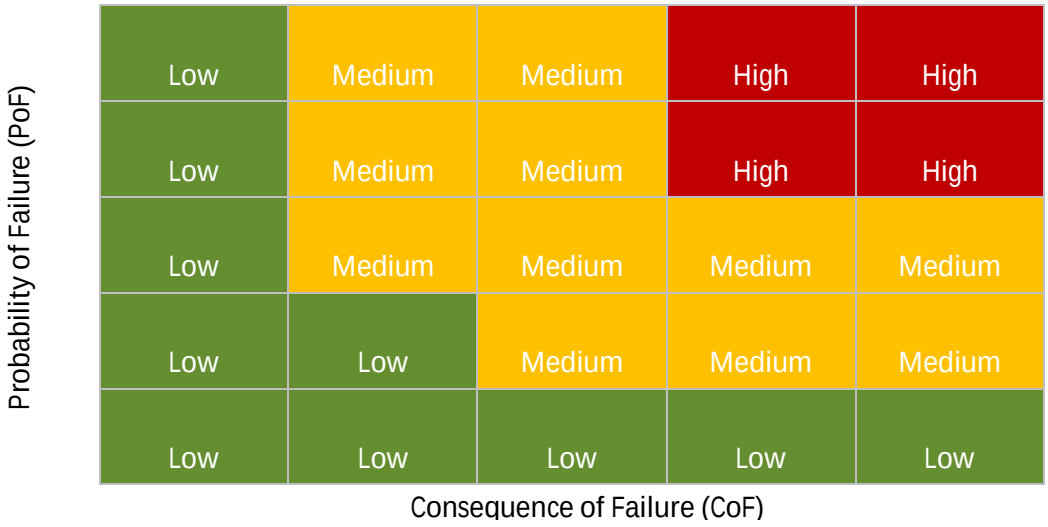


Figure 4-1: Risk Heat Map

4.1.2 Risk Model Development Process

Evaluating the criticality of an asset involves assessing its importance and impact on the Town's operations, objectives, and overall mission. The criticality of an asset is determined through the Risk Model, which determines its significance in contributing to the Town's success, the potential consequences of its loss or compromise, and its role in supporting essential functions.

The Risk Model for each service category was developed through a collaborative workshop and consultation processes with the Town's divisional representatives to document the Town's current processes, challenges, and opportunities across the Town's non-core infrastructure. Table 4-1 outlines the general framework used to develop the Risk Model for each asset category.

Table 4-1: The Risk Model Development Process

Steps	Process
1. Propose Preliminary Risk Model	A preliminary risk model was proposed using comparable risk models developed in the Town's core Asset Management Plan (AMP) and by other municipalities. The preliminary risk model was assessed during collaborative workshops with Town staff to identify the major components, elements or aspects of the asset category that could be susceptible to risks.
2. Determine Criticality Factors and Weights	The triple-bottom-line approach was used to determine risk criticality of each asset category during collaborative workshops with the Town. Weights were assigned to different factors that contribute to the overall criticality of each risk.
3. Process Data, Establish and Run the Risk Model	The collected data was processed to address any inconsistencies, errors, or missing information. Additional data was provided by the Town to further define the risk model. Following data validation, an excel-based model was developed using the criticality factors, weights, and processed data as inputs. The established risk model was run to determine the CoF and PoF scores.
4. Calculate Risk Scores	Risk scores were calculated for each identified risk by multiplying the CoF and PoF scores. This resulted in a numerical score reflecting the overall risk level for each risk.
5. Review and Refine Model	The risk model and criticality assessment were reviewed by the Town and refined based on feedback, updated information, and changes in the risk landscape. Weights and criteria were adjusted as needed to ensure that the risk model will be effectively integrated into the Town's decision-making processes.

The conceptualized version of the Town's risk model showing the criticality indices, factors and weightings of each non-core asset category is available for review in Appendix C. The process detailed in Table 4-1 should be repeated as necessary to ensure that the specific criticality factors and weighting reflects the Town's current and future evolving priorities.

4.1.2.1 Consequence of Failure Methodology

The CoF methodology is a systematic approach used to assess the potential impact or consequences associated with the failure of each non-core asset. The objective is to understand the severity of outcomes that may result from a failure event and to inform decision-making regarding risk mitigation and management strategies.

The triple-bottom-line is a sustainability framework that considers not only financial considerations (economic), but also social and environmental aspects. The Risk Model assesses the CoF within each of these triple-bottom-line dimensions:

- Economic Consequences: Evaluates the potential economic losses associated with the failure of assets. This includes direct costs (repair or replacement of assets, loss of revenue) and indirect costs (business interruption, decreased market share). Economic consequences also consider operational disruption, which assesses the impacts on day-to-day operations and the Town's ability to deliver products or services;
- Social Consequences: Evaluate how the failure of assets may impact people, including employees, customers, and the surrounding community. Social consequences consider factors such as safety hazards, health risks, and the well-being of individuals. It further assesses community relations, and the potential damage to relationships with the community, customers, and other stakeholders; and
- Environmental Consequences: Consider the overall ecological impact which includes the potential harm to the environment, ecosystems, and biodiversity. Environmental consequences evaluate whether the failure could lead to violations of environmental regulations and compliance standards.

Factors that impact the criticality of an asset were selected through a series of collaborative workshops with Town staff. A rating score of one through five was assigned to each of the criticality factors, where five represents a maximum score (i.e., most critical) and one represents the lowest score (i.e., least critical).

4.1.2.2 Probability of Failure Methodology

The PoF methodology was assessed using a combination of available condition-based data and expert assessments to assess the current health and condition of non-core assets. When condition-based data was not available, qualitative, and quantitative estimates based on expert knowledge and experience were used. Expert judgement was particularly valuable when historical data was limited or unreliable. The PoF factors were also assigned a one through five rating score, where five is the maximum score (i.e., most likely) and one is the lowest score (i.e., least likely).

4.1.3 Risk Analysis

4.1.3.1 Consequence of Failure

Table 4-2, Table 4-3, and Table 4-4 summarize the CoF risk factors used for each asset category for each dimension in the triple-bottom-line approach (economic, social, and environmental respectively). Each CoF risk factor was assigned a score of one to five in the Risk Model.

It should be noted that the scoring frameworks for risk factors vary between service categories in some instances and are consistent in others. These decisions were made on a case-by-case basis with consideration for the impact that they have on the overall asset inventory. One notable example of a risk factor that is scored consistently across all service categories is Total Replacement Cost. The value in

dollars that constitutes a specific score is the same for everything from trucks to phonelines and this approach will enable risk to be compared across asset categories. This is a best practice in asset management and supported by the advice of Dillon's certified risk managers (following guidance of ISO31000).

Table 4-2: Economic CoF Risk Model Factors and Definitions

CoF Factor	Description	Risk Model Application
Total Replacement Cost	The total replacement cost refers to the complete expense required to replace or reproduce an asset with an equivalent one. The higher the total replacement cost the higher the score assigned.	Fleet, Equipment, IT Assets, Active Transportation (Multi-Use Paths), Parks, Urban Forestry, Facilities, Road Appurtenances
Resale Value	Resale value refers to the estimated monetary worth of an asset when it is sold or transferred to a new owner. The higher the resale value the higher the score assigned.	Fleet
Remediation	Remediation refers to the potential for additional costs occurring from a failure event, other than replacing the asset. This might include damage to other assets, or other downstream effects. In this context, Remediation involves assessing the presence of running water as part of an asset. If running water is present, the CoF is higher on the assumption that it poses a risk to surrounding assets and landscaping if it were to leak.	Parks
Revenue	The scale of contribution that a particular asset, and the activities it supports, generates for the Town. The higher the contribution the higher the score assigned.	Facilities
Impediments	Urban areas often have limited space with buildings, roads, and utilities. As a result, the cost of tree removal varies by asset. Impediments that add to labour costs or complexity receive higher values.	Urban Forestry
Secondary Costs	Secondary costs refer to additional or indirect costs associated with the ownership, operation, and maintenance of assets beyond their initial acquisition or construction costs. The higher the secondary costs the higher the score assigned.	Facilities, Roadway Appurtenances

Table 4-3: Social CoF Risk Model Factors and Definitions

CoF Factor	Description	Risk Model Application
Criticality	Criticality refers to the degree of social importance or significance that an asset, process, or activity holds within the Town. The higher the criticality the higher the score assigned.	Fleet, Equipment, Parks, Facilities, Roadway Appurtenances, IT Assets
Number of People Impacted	The number of people impacted was a metric used to quantify the scope and scale of an event, action, or situation if an asset failed. The higher the number of people impacted the higher the score assigned.	Fleet, IT Assets, Parks, Facilities, Roadway Appurtenances
Productivity Impact	Productivity is a measure of efficiency of the Town's operational services. The greater the impact is to the Town's productivity results in a higher risk score.	IT Assets
Cybersecurity Impact	Cybersecurity, which encompasses measures to protect computer systems, networks, and data from cyber threats, plays a crucial role in safeguarding sensitive information, maintaining privacy, and ensuring the integrity and availability of digital assets. The higher the cybersecurity impact the higher the risk score.	IT Assets
Health and Safety (H&S) Concerns	Health and safety (H&S) concerns encompass a wide range of issues related to the well-being and protection of individuals. Addressing health and safety concerns is crucial to prevent accidents and injuries. The presence or magnitude of H&S concerns results in a higher risk score.	Active Transportation (Multi-Use Paths), Parks, Urban Forestry
Viability of Alternatives	The viability of alternatives refers to the feasibility, practicality, and sustainability of alternate paths should one become blocked or unusable. Fewer viable alternatives results in a higher risk score.	Active Transportation (Multi-Use Paths)
Concentration of Amenities	The concentration of amenities refers to the spatial distribution and clustering of various facilities, services, or features that contribute to the quality of life and convenience in a specific area. The higher the concentration of amenities results in a higher risk score, on the assumption that paths connecting amenities have a higher social value.	Active Transportation (Multi-Use Paths)

CoF Factor	Description	Risk Model Application
Location	The location of an asset influences the magnitude of foot traffic. Foot traffic refers to the flow of pedestrians or people moving on foot in a particular area, such as sidewalks, streets, shopping centres, or public spaces. Higher the foot traffic results in a higher risk score.	Urban Forestry
Landscape Value	Landscape value is measured with the crown diameter of a tree, in order to account for the social value of shade. Crown diameter refers to the horizontal measurement of the canopy, which is the outermost branches and foliage of the tree. A larger crown diameter results in a higher risk score.	Urban Forestry

Table 4-4: Environmental CoF Risk Model Factors and Definitions

CoF Factor	Description	Risk Model Application
Disposal at End of Useful Life	Disposal at the end of the useful life refers to the process of properly managing and disposing of assets when they reach the end of their functional lifespan. The disposal phase involves making decisions about how to handle assets that are no longer in use to minimize environmental impact and adhere to waste management regulations. The size or presence of hazardous materials may impact an assets ability to be disposed of sustainably.	Fleet, Equipment, IT Assets, Facilities
Proximity to Natural Heritage System (NHS)	Proximity to the provincial natural heritage system (NHS) refers to the spatial closeness (less than 30 metres) of an asset to regions that are ecologically or environmentally significant (such as woodlands, wetlands, watercourses, and waterbodies). The closer an asset is to the NHS, the higher the risk score.	Active Transportation (Multi-Use Paths), Parks, Road Appurtenances
Size	Size in urban forestry refers to the diameter at breast height (DBH). DBH is a standard measure used in forestry to determine the diameter of a tree trunk at a specific height above the ground. A larger DBH results in greater ecological value, and as such, a higher risk score. Size in facilities refers to the volume of construction materials, and as such, if replacement is required it has a larger impact on the environment. A larger facility size result in a greater risk score.	Urban Forestry, Facilities

CoF Factor	Description	Risk Model Application
Overall Health	The overall health of a tree is an important metric in its ecological value, and, by extension, the environmental consequence should it not be maintained. The higher the overall health of a tree, the higher the risk score for the forest.	Urban Forestry
Nativity	The nativity of a forest refers to the origin or native status of the tree species within that particular forest ecosystem. Native species are those that naturally occur and have evolved in a specific geographic region over an extended period, without human introduction or migration. The higher the nativity of a forest results in greater ecological value, and as such, a higher risk score.	Urban Forestry
Age Class	The age class of a tree is simply an estimate of its age rounded to the nearest 10 years. This is often used because estimating the age of a tree without damaging it is challenging. Older trees have higher risk scores.	Urban Forestry
Hazardous Materials	Refers to the presence of potential environmentally damaging substances. A facility that contains hazardous materials will receive a higher risk score.	Facilities

4.1.3.2 Probability of Failure

Factors used within the risk models that contribute to the PoF varied across each asset category.

Table 4-5 presents the PoF risk factors used for each asset category. Each PoF risk factor was assigned a score of one to five in the risk model.

Table 4-5: PoF Risk Model Factors and Definitions

PoF Factor	Description	Risk Model Application
Condition Rating	The condition rating assessment of an asset involved evaluating its state, performance, and overall well-being to determine its level of functionality, potential risks, and the need for maintenance or improvement. A higher condition category results in a lower risk score.	Fleet, Equipment, IT Assets, Active Transportation (Multi-Use Paths), Facilities, Roadway Appurtenances
Usage	The usage of an asset refers to the extent and way the asset is utilized to achieve its intended purpose or function. A higher usage results in a higher risk score.	Fleet, Active Transportation (Multi-Use Paths)
Climate Hazard Matrix	Climate hazards can have significant impacts on various types of assets. These hazards are often associated with changes in climate patterns, extreme weather events, and long-term climatic shifts. The more vulnerable an asset is to climate hazards, the higher the risk score.	Active Transportation (Multi-Use Paths), Parks, Urban Forestry, Facilities
Age-based Condition	Age-based condition or age-based remaining useful life refers to estimating how much longer an asset is expected to remain functional or productive based on its age and condition. This estimation helps assess the risk associated with the continued use of the asset and informs decision-making regarding maintenance, repair, or replacement. An asset that has a higher age-based condition results in a higher risk score.	Equipment, Facilities, IT Assets, Parks
Vendor Support	Vendor support refers to responsiveness and quality of assistance provided by the supplier of an IT asset. Timely and on-going vendor support is essential for ensuring the proper functioning, maintenance, and troubleshooting of IT systems. Lower vendor support results in a higher risk score.	IT Assets
Obsolescence	Obsolescence refers to the state in which an information technology asset, whether hardware or software, becomes outdated and is no longer considered current or efficient. Staff assessed the likelihood that an IT asset would need to be replaced prior to failure when determining these scores. Higher obsolescence results in a higher risk score.	IT Assets
Features	The features of a car encompass a wide range of characteristics, functionalities, and components that contribute to its overall performance, safety, comfort, and convenience. In this context, features of note include retrofitting for attachments, and unique properties like high torque. The presence of features results in a higher risk score.	Fleet
Fail Potential	Fail potential refers to the magnitude of decay, wounds, and structural defects of an asset. A higher failure potential results in a higher risk score.	Urban Forestry

A series of conceptualized risk models for the Town's assets can be found in Appendix C. The risk scores of the assets have been incorporated in the excel-based asset lifecycle model to inform asset management, rehabilitation, and replacement within the Town.

4.2 Asset Deterioration Factors

Asset deterioration refers to the gradual decline or impairment of an asset's condition over time, leading to a decrease in its performance, reliability, or value. Various factors contribute to the deterioration of assets across different service categories and asset types. Understanding these factors is crucial for effective asset management and maintenance planning. Common factors that contribute to asset deterioration may include:

- Age:
  - **Description:** The natural aging process can lead to wear and tear, impacting the structural integrity and functionality of assets.
  - **Mitigation:** Implement proactive maintenance strategies and consider asset replacement or refurbishment when approaching the end of the useful life.
- Usage Intensity:
  - **Description:** Assets subjected to frequent or heavy usage are more prone to deterioration due to increased stress and fatigue.
  - **Mitigation:** Implement regular inspections, monitor usage patterns, and schedule maintenance based on asset usage metrics.
- Climate Hazards:
  - **Description:** Exposure to harsh environmental conditions, such as extreme temperatures, humidity, corrosive substances, or pollutants, can accelerate asset deterioration.
  - **Mitigation:** Implement protective measures, conduct regular inspections, and use materials resistant to environmental factors.
- Lack of Maintenance:
  - **Description:** Inadequate or infrequent maintenance practices can result in the accumulation of defects, leading to gradual asset deterioration.
  - **Mitigation:** Establish a proactive maintenance schedule, conduct regular inspections, and address identified issues promptly.
- **Improper Operation:**
  - **Description:** Incorrect operation or usage of assets, such as exceeding load capacities or improper settings, can contribute to deterioration.
  - **Mitigation:** Provide proper training for operators, implement usage guidelines, and conduct regular audits to ensure compliance.
- Corrosion and Rust:
  - **Description:** Exposure to corrosive substances, salt, or moisture can lead to corrosion and rust, particularly in metal components.

- **Mitigation:** Apply protective coatings, conduct regular inspections for signs of corrosion, and replace or repair affected parts.

- **Material Degradation**:
  - **Description:** Degradation of materials used in asset construction, such as fatigue in metals or degradation in composite materials, can impact performance.
  - **Mitigation:** Choose durable materials, monitor material conditions, and perform non-destructive testing to assess material integrity.
- Inadequate Design:
  - **Description:** Poor design, including weak structures, insufficient safety margins, or inadequate component sizing, can contribute to premature asset deterioration.
  - **Mitigation:** Ensure rigorous design standards, conduct thorough design reviews, and implement improvements based on lessons learned.
- Lack of Monitoring:
  - **Description:** Inadequate monitoring of asset conditions and performance can result in delayed detection of deterioration issues.
  - **Mitigation:** Implement continuous monitoring systems, use condition-based monitoring tools, and employ predictive maintenance techniques.

4.2.1 Deterioration Curve

The deterioration curve represents the gradual decline in an asset's condition over time, while the probability of failure indicates the likelihood that the asset will fail at a specific point in time. Figure 4-2 describes how an asset progresses along the deterioration curve before it reaches an inflection point where the rate of deterioration accelerates. In the accelerating deterioration phase of the curve, the asset experiences a rapid increase in the probability of failure. This phase is characterized by a higher risk of failure, and proactive maintenance interventions become crucial to manage the escalating risk.

Prior to reaching the accelerated phase, the asset may go through a renewal opportunity zone, which is described as the target condition for intervention. The renewal zone is defined as the threshold of acceptability, or state in which an asset is required to be rehabilitated/refurbished to avoid asset failure, minimize service disruption, and to optimize life cycle costs.

Figure 4-2 presents the deterioration curve, which shows the relationship between an asset's performance or reliability and its operational time. This tool is used to visualize how an asset's condition changes over time and aids in making informed decisions about maintenance strategies, repairs, or replacements.

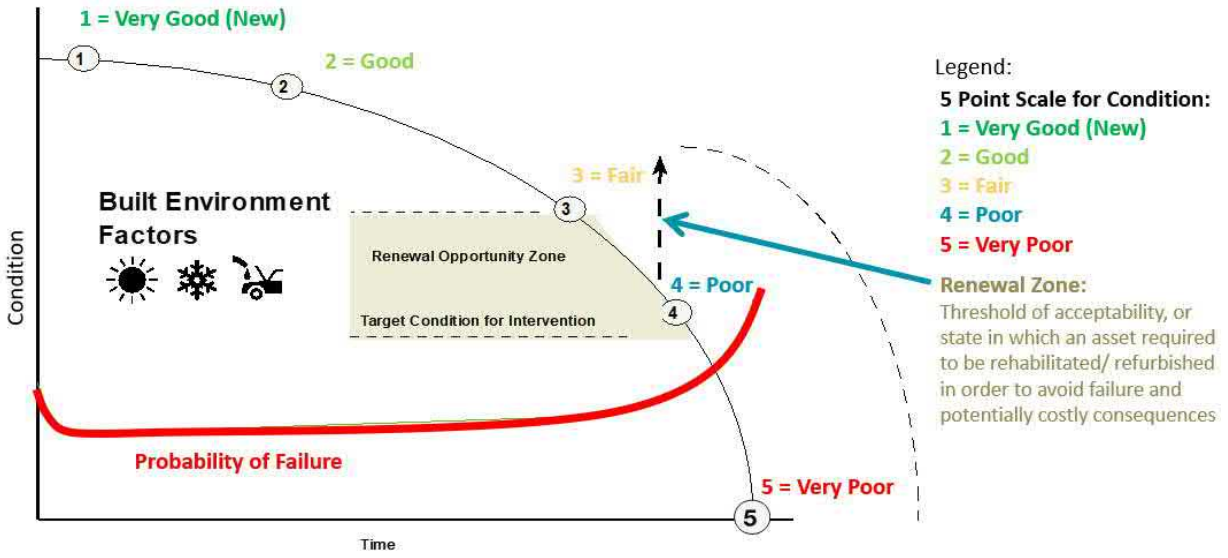
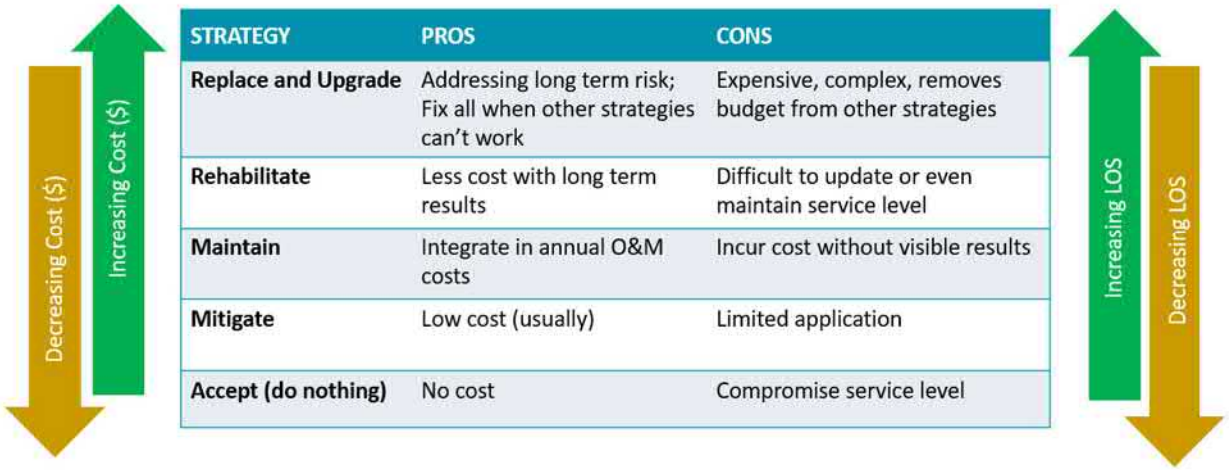


Figure 4-2: Deterioration Curve

4.2.2 Strategies for Addressing Risk

Addressing risk strategies involves implementing measures and actions to identify, assess, mitigate, and manage risks within an organization. Developing effective risk strategies is crucial for safeguarding assets, ensuring business continuity, and enhancing overall resilience.

Figure 4-3 illustrates the pros and cons to different strategies and the relationship between the LOS and economic cost. In general, the LOS increases when the cost to implement a strategy increases.



STRATEGY	PROS	CONS
Replace and Upgrade	Addressing long term risk; Fix all when other strategies can't work	Expensive, complex, removes budget from other strategies
Rehabilitate	Less cost with long term results	Difficult to update or even maintain service level
Maintain	Integrate in annual O&M costs	Incur cost without visible results
Mitigate	Low cost (usually)	Limited application
Accept (do nothing)	No cost	Compromise service level

Figure 4-3: Strategies to Address Risk

A literature review and consultation with the Town identified general and Town-specific factors that contribute to asset deterioration for each non-core service category. These factors are further listed and discussed in Table 4-6 to Table 4-13.

Table 4-6: General and Town-Specific Asset Deterioration Factors – Facilities

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Climate and Weather Conditions: Climate hazards such as extreme temperatures, humidity, rainfall, snow, and freeze-thaw cycles can accelerate the deterioration of facility assets by resulting in corrosion, structural damage and wear and tear on facility infrastructure. • Aging Infrastructure: The natural aging process of infrastructure components can lead to material degradation, decreased structural integrity, and increased maintenance requirements. • Environmental Exposure: Exposure to pollutants, chemicals, salts, and other environmental agents can lead to corrosion, discolouration, and material degradation. • Inadequate Maintenance: Lack of regular maintenance or deferred maintenance practices can result in the accumulation of issues, leading to more extensive and costly repairs.	Through consultation with the Town, future challenges identified during the workshop includes increasing expectations, aging infrastructure, and meeting environmental requirements in accordance with regulations and policies (i.e., have more net zero buildings).

Table 4-7: General and Town-Specific Asset Deterioration Factors – Parks

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Climate and Weather Conditions: Exposure to sun, rain, snow, and temperature fluctuations results in weathering, fading of colours, erosion and deterioration of park features and infrastructure. • Aging Infrastructure: Deterioration of park amenities over time result in structural instability, safety concerns and reduced functionality. • Foot Traffic and Usage: Heavy usage from visitors, sport activities, events and gatherings result in compacted soils, damaged turfs, and increased wear on park amenities. • Litter, Pollution and Vandalism: Acts of littering, vandalism, or intentional damage result in structural damage to park amenities, defacement, and increased maintenance costs.	The Town contains various parks that offer different amenities such as boat docks and beach parks adjacent to Lake Simcoe. Deterioration factors unique to the Town include water and irrigation issues, foot traffic and usage, and climate and weather-related factors which can result in accelerated erosion, flooding, turf damage, and increased wear and tear on park amenities.

Table 4-8: General and Town-Specific Asset Deterioration Factors – Fleet

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Vehicle Age and Usage: Aging of fleet vehicles over time can increase wear and tear, reduce fuel efficiency and result in a higher likelihood of mechanical issues. • Weather and Environmental Exposure: Exposure to harsh weather conditions, such as extreme temperatures, heavy rain and snow can lead to corrosion, fading of paint, and deterioration of exterior and interior components. • Lack of Preventative Maintenance: Inadequate or irregular preventive maintenance can lead to increased risk of breakdowns, higher repair costs, and decreased overall reliability. • Poor Road Conditions: Driving on poorly maintained roads can increase wear on suspension components, tires, and alignment issues. • Fuel Quality: Poor quality fuel or fuel contamination can lead to reduced engine efficiency, clogged fuel injectors and potential damage to the fuel system.	Lack of redundancy or spare units makes it more difficult to take an asset out of service for maintenance. Parts and labour not readily available for some fleets can lead to greater deterioration of assets.

Table 4-9: General and Town-Specific Asset Deterioration Factors – Equipment

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Usage intensity and Age: The natural aging of equipment over time as well as the frequency or intensity of equipment use can lead to increased wear and tear, accelerated component fatigue and higher likelihood of equipment failure. • Environmental Exposure: Exposure to extreme weather conditions can accelerate the impacts of corrosion, rusting and deterioration of exterior and interior components. • Poor Maintenance Practices: Inconsistent or deferred maintenance practices can increase the risk of breakdowns, higher repair costs and decreased overall reliability. • Employee Training: Lack of proper training for equipment operators can lead to increased risk of accidents, improper equipment uses and potential safety issues.	Assets within this service category are extremely diverse in terms of maintenance needs. Deterioration may be accelerated by more complex maintenance procedures and the need for additional staff.

Table 4-10: General and Town-Specific Asset Deterioration Factors – Active Transportation

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Weather and Climate Conditions: Exposure to sun, rain, snow, and temperature fluctuations can lead to erosion, surface degradation and deterioration of path materials. • Heavy Foot and Bicycle Traffic: High volume of pedestrians and cyclists can lead to greater surface wear, compaction of soil or aggregate, and accelerated deterioration of path materials. • Vegetation Growth: Natural growth of vegetation along the path can lead to encroachment, leading to reduced usable width and potential safety hazards. • Inadequate Drainage: Poor drainage leading to water accumulation on the path can lead to erosion, ponding, and water damage to the path surface. • Inadequate Maintenance: Lack of regular maintenance or deferred practices can lead to the accumulation of debris, surface damage, and reduced overall safety.	Current and future challenges experienced by the Town include meeting accessibility standards, conducting maintenance inspections and prioritizing maintenance costs. Multi-Use Paths located near watercourses or waterbodies (such as Lake Simcoe) are more susceptible to ground water saturation and climate hazards. Multi-Use Paths containing natural materials are at greater risk of erosion and deterioration.

Table 4-11: General and Town-Specific Asset Deterioration Factors – Roadway Appurtenances

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Weather and Climate Conditions: prolong exposure to sunlight, rain, snow, and extreme temperatures can lead to fading of colours, structural weakness, deterioration of reflective materials and overall reduced visibility. • Vandalism and Graffiti: Acts of vandalism, graffiti or intentional damage leads to defacement, reduced legibility, and increased maintenance costs. • Impact and Collision: Physical impact from accidents, vehicles or falling objects lead to bent or damaged signposts, warping of sign faces and potential safety hazards. • Age and Material Deterioration: Aging of sign materials over time leads to fading, peeling cracking, and reduced retro-reflectivity.	Current challenges experienced by the Town include extreme weather conditions, budget constraints, changing policies, natural aging of signs, sign pollution, narrow Right-of-Way (ROW), collisions as well as graffiti/vandalism. Future challenges include budget limitations, inventory forecasting, and changing regulations.

Table 4-12: General and Town-Specific Asset Deterioration Factors – Urban Forestry

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Soil Compaction: urban areas often experience sedimentation and soil compaction from construction activities, foot traffic and heavy equipment. This can lead to reduced soil aeration, nutrient uptake, and root growth. • Air Pollution: Elevated levels of air pollutants in urban environments lead to leaf damage, reduced photosynthesis, and overall tree stress. • Lack of Space: Limited space for root expansion and canopy growth leads to stunted growth, structural instability and increased susceptibility to invasive species, diseases, and pests. • Invasive Species: The spread of invasive species leads to competition of resources, displacement of native species and ecosystem disruption. • Climate Stress: Urban heat islands, temperature extremes and climate variability result in heat stress, leaf scorch and altered growth patterns.	Current challenges experienced by the Town include an incomplete Urban Forestry Index, a significant population of trees with a high fail potential, and the increasing frequency and severity of extreme weather events.

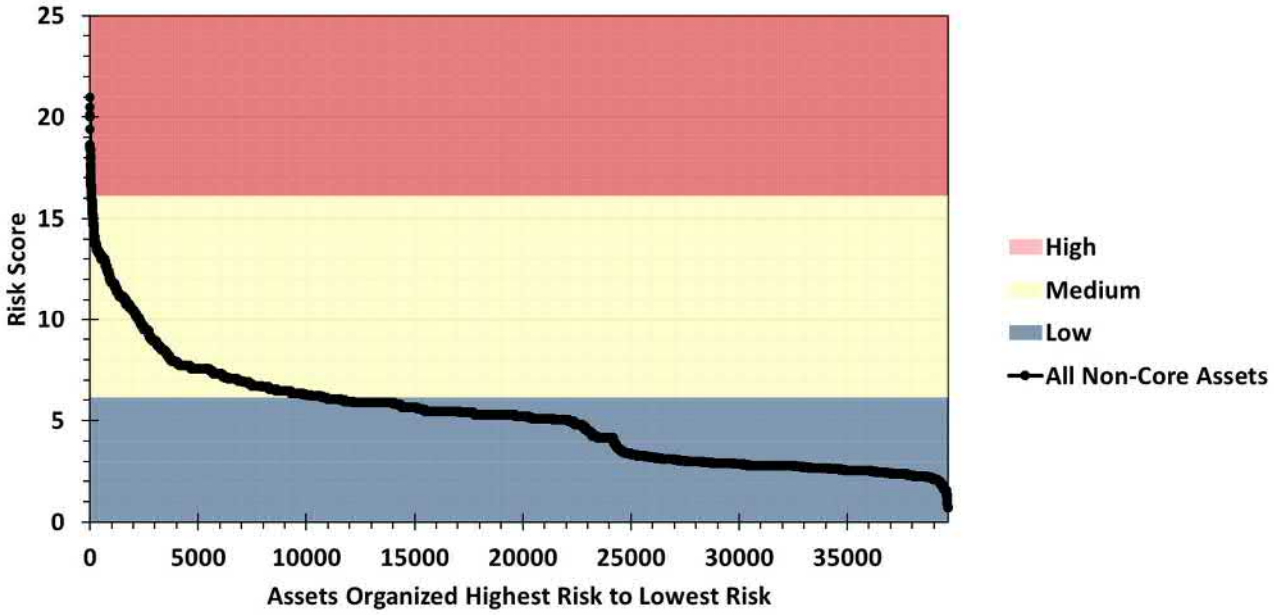
Table 4-13: General and Town-Specific Asset Deterioration Factors – IT Assets

Typical Asset Deterioration Factors	Additional Deterioration Factors within the Town of Georgina
• Technological Obsolescence: Rapid advancements in technology leading to the obsolescence of hardware and software. This leads to reduced compatibility, performance issues and increased vulnerability to security threats. • Physical Wear and Tear: Physical degradation of hardware components due to regular use can lead to hardware failures, decreased reliability, and increased likelihood of malfunction. • Environmental Conditions: Exposure to adverse environmental conditions such as extreme temperatures, humidity and dust can result in overheating, corrosion, and damage to sensitive electronic components. • Data Corruption: Corruption of data use to software bugs, malware or hardware issues lead to loss of data integrity, system errors and potential security vulnerabilities. • Cybersecurity Vulnerability: Exposure to cybersecurity threats, such as malware, ransomware and hacking can result in data breaches, unauthorized access, and compromised system security.	Limited vendor support and management, budget maintenance, subscription renewals, supply chain shortages, poor user training, staff turnover and limited procurement policies are deterioration factors currently faced by the Town.

4.2.3 Risk Assessment Results

Risk Assessment Profiles were completed for each service category to evaluate the level of risk associated with each asset. The Risk Assessment Profiles help the Town understand the potential risks and rewards associated with holding or investing in a specific asset. Assessing the Risk Profile of an asset is crucial for making informed investment decisions and managing a well-balanced asset portfolio to optimize the Town's performance, reliability, and lifecycle of their assets.

Figure 4-4 plots the risk scores of all non-core assets in descending order. At the time of this AMP, 70.3% of all assets are in the low-risk category, 29.5% are in the medium-risk category, and 0.2% are in the high-risk category. The average risk score of all assets is 5.1 (low). The asset category with the highest average risk score is Equipment (average risk score of 9.7). The asset category with the lowest average risk score is IT Assets (risk score of 3.0).



	Asset Count	Percent of Total
High Risk (16 to 25)	84	0.2%
Medium Risk (6 to <16)	11,679	29.5%
Low Risk (0 to <6)	27,882	70.3%
Average Risk Score	5.1	

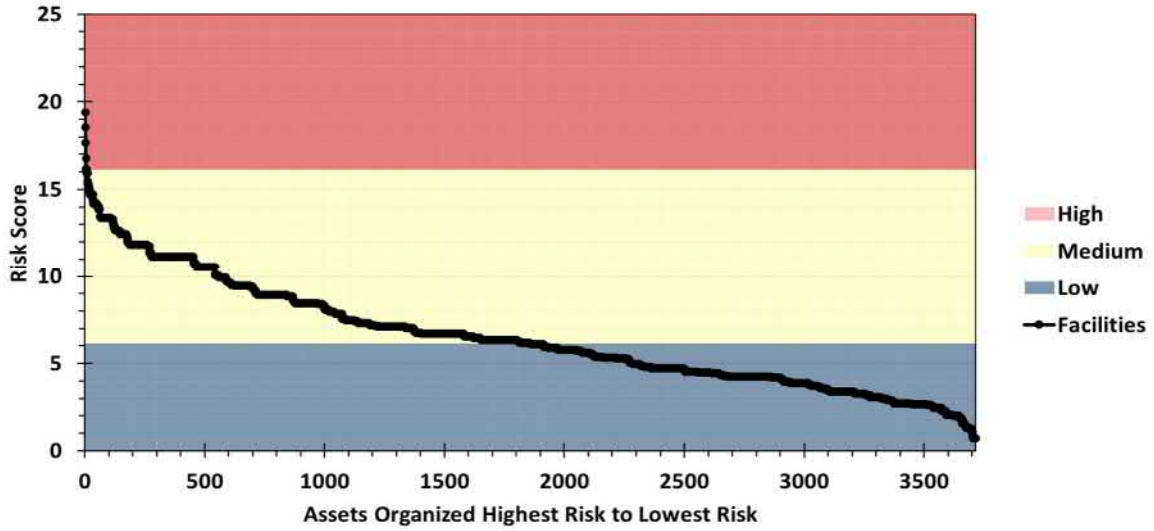
Figure 4-4: Risk Profile for all Non-Core Assets

The overall risk profile for each non-core asset category is presented below where it applies the risk models as reviewed in the risk assessment workshops and refined by the Town as required. The x-axis represents assets with unique IDs including subcomponents (i.e., large assets with multiple components recorded independently – like the ROC – do not have a single risk score but rather many). Each asset received a risk score, categorizing it as either 'low' (score of 1 to <6), 'medium' (score of 6 to <16) or 'high' (score of 16 to 25) risk.

4.2.3.1 Facilities

Based on discussion with the Town, three factors (revenue, total replacement cost and secondary costs) are used to determine the economic Consequence of Failure (CoF). If a facility generates higher revenue, is more expensive to replace and/or involves high secondary costs, therefore it would receive a higher economic CoF. To determine the social CoF, criticality and the number of people impacted are used. If the criticality of a facility is higher, and it impacts a larger number of people, it would receive a high social CoF. To assess the environmental CoF, the size of the facility and the presence of hazardous materials are used. As such, a larger facility or one with hazardous materials would result in a higher environmental CoF score.

To determine the Probability of Failure (PoF), condition rating or age-based condition and climate hazard score were used. Based on these factors, a facility that is more susceptible to climate hazards and/or has a lower condition rating receives a higher risk score. The Risk Profile for assets listed in the facilities asset category is presented below (Figure 4-5).



	Asset Count	Percent of Total
High Risk (16 to 25)	8	0.2%
Medium Risk (6 to <16)	1,939	52%
Low Risk (0 to <6)	1,769	48%
Average Risk Score	6.5	

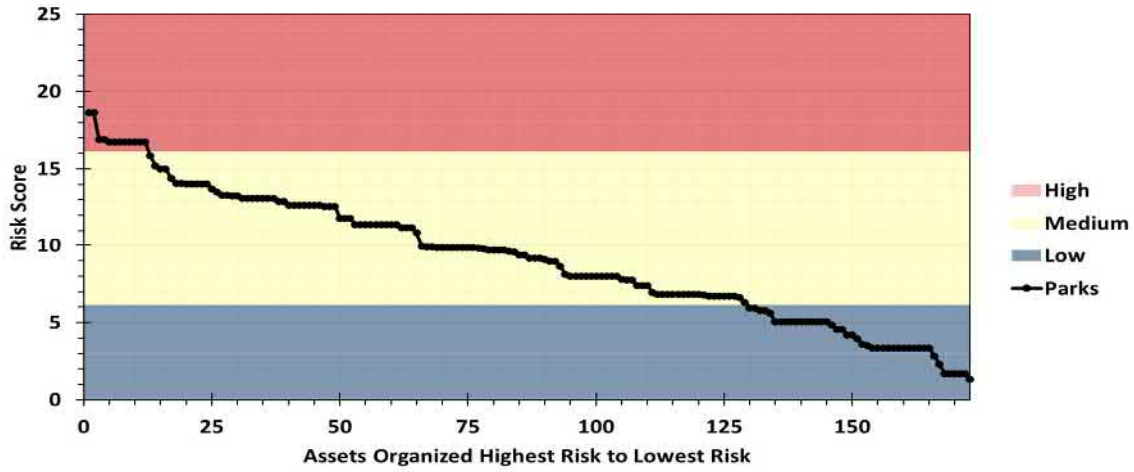
Figure 4-5: Risk Profile for Facilities

Based on the risk assessment, the three assets with the highest risk scores within the Facilities service category is the Georgina Sutton Arena – Parking Lot (risk score of 19.4), Virginia Community Hall – Cabinets & Casework (risk score of 18.6), and Ski Hill at the ROC – Playing Fields (risk score of 17.7). These recreational facilities have a high economic and social value to the Town, a higher risk to climate hazards, and received a low score for condition, increasing their PoF.

4.2.3.2 Parks

Based on the risk assessment workshop with the Town, factors used to determine the economic CoF for parks involved remediation (the presence of running water) and the total replacement cost. As a result, park assets that were more expensive to replace and had running water infrastructure received higher economic CoF scores. The social CoF was determined by using criticality, health and safety concerns and the number of people impacted as contributing factors. Park assets that had a higher criticality, the presence of health and safety concerns, and impacted a larger number of people received a high social CoF. To determine the environmental CoF, proximity to the provincial Natural Heritage System (NHS) was used. As such, park assets that were within 30 metres of the NHS received higher environmental CoF scores.

The age-based condition and climate vulnerability (climate hazard matrix) was used to determine the PoF. Assets that have a poor age-based condition and are more susceptible to climate hazards received a higher PoF score. The Risk Profile for all assets listed in the Parks asset category is presented below (Figure 4-6).



	Asset Count	Percent of Total
High Risk (16 to 25)	11	6.4 %
Medium Risk (6 to <16)	118	68.2 %
Low Risk (0 to <6)	44	25.4 %
Average Risk Score	9.2	

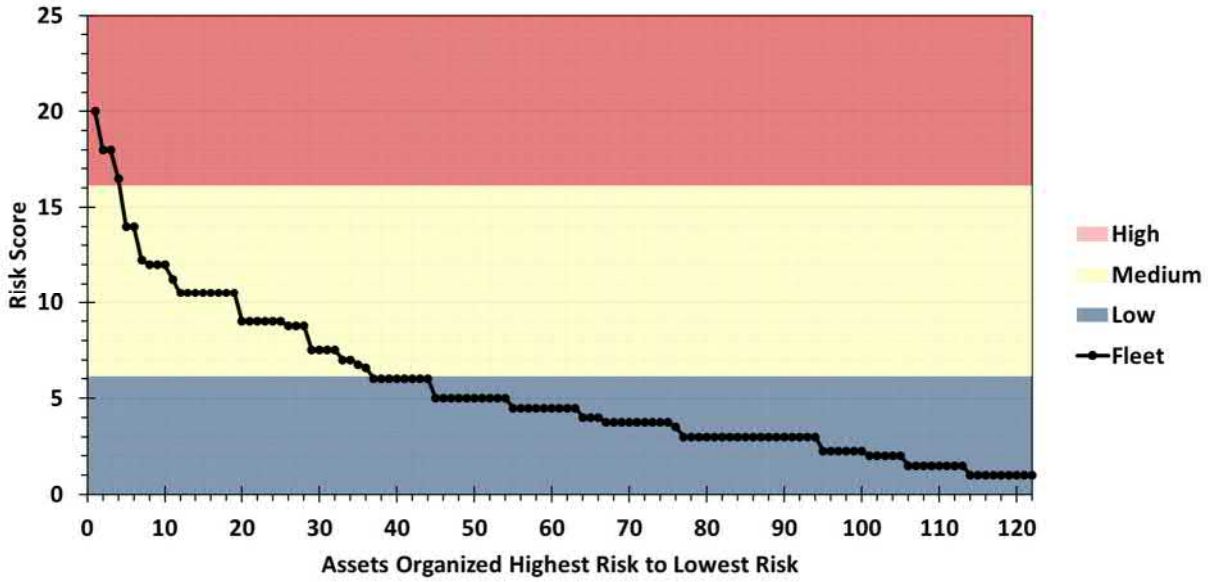
Figure 4-6: Risk Profile for Parks

Based on the risk assessment, the four assets that received the highest risk scores within the Parks service category were the Lit / Unlit Baseball Diamonds (18.6) and the Full / Mini Soccer Fields (16.9) located in West Park. These assets are expensive to replace, have high social value (recreational use), and are in close proximity to the NHS. Further, they are older (built in the 1990s) and have a low condition rating.

4.2.3.3 Fleet

The fleet risk model used various factors to determine the CoF based on the triple-bottom-line (economic, social and environment). Through discussion with the Town, the factors used to determine the economic CoF included the total replacement cost and resale value which have been combined into a single value to maintain consistency with the approach outlined in Section 4.1.3.1. Economic CoF was calculated by adding the resale value to the total replacement cost for any fleet assets in 'good' or 'excellent' condition. This is to reflect that vehicles in good condition can be resold strategically to prevent failure and reduce long-term maintenance costs. The social CoF was determined by using both criticality and the number of people impacted, while the environmental CoF used Disposal at End of Life. Accordingly, environmental damage was assigned a 1 (low) consequence score for all assets listed in the fleet asset category.

Three factors were considered to determine the PoF, the weighting of which are revised to accommodate available information. As such, the metrics used to determine PoF was weighted with condition assessment, usage (odometer reading), and presence of features. The usage score as a result of the odometer reading scales provided by the Town is unique to the following asset types: Light Vehicles, Medium Vehicles, Heavy Vehicles, Snowploughs and Fire Trucks. This information was incorporated in the risk model and is presented in the Risk Profile graph below (Figure 4-7).



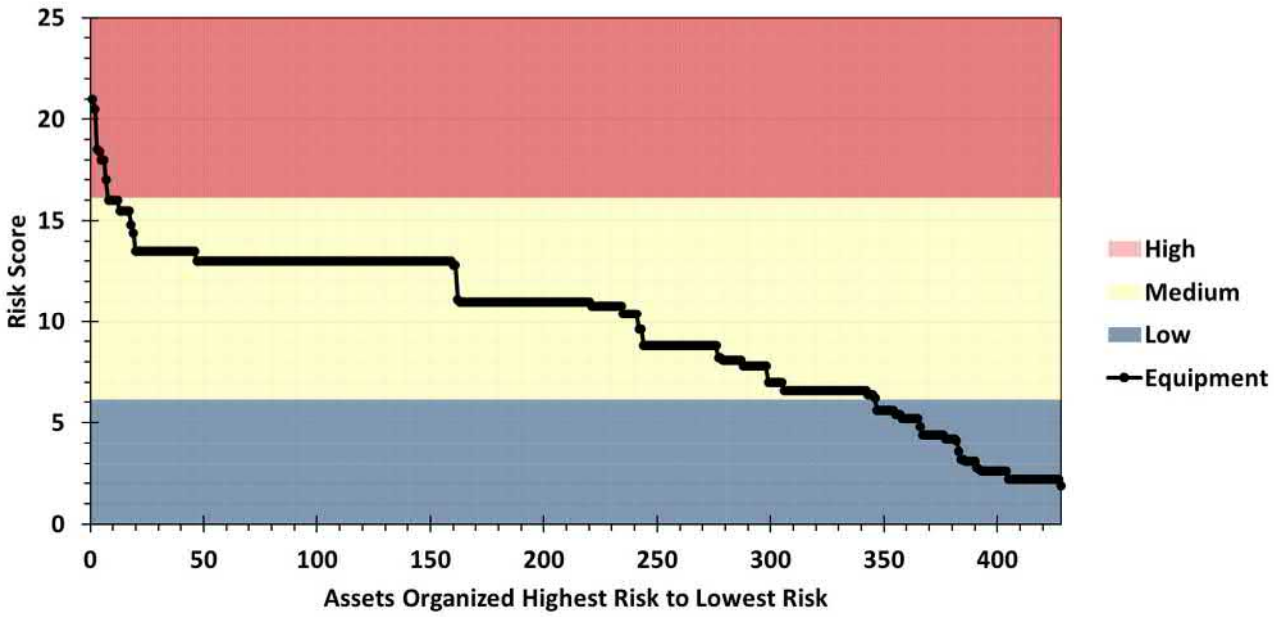
	Asset Count	Percent of Total
High Risk (16 to 25)	3	2%
Medium Risk (6 to <16)	41	34%
Low Risk (0 to <6)	78	64%
Average Risk Score	5.5	

Figure 4-7: Risk Profile for Fleet

The three vehicles with the highest risk scores in the Fleet service category are the Freightliner FL80 (risk score of 20), and both 2011 Crimson Spartans (risk scores of 18). These vehicles have a high total replacement cost, high social value, are in fair to poor condition, and have high usage (high odometer reading). As a result, these assets were identified as having a higher level of risk when compared to other assets within the fleet service category.

4.2.3.4 Equipment

The economic CoF was determined by using the total replacement cost of each asset listed within the equipment asset category. Assets with higher total replacement costs received higher economic CoF scores. To determine the social CoF, the criticality of each asset was used. Assets that had a higher criticality to Town staff or the public received a higher social CoF. To assess the environmental CoF, the Disposal at End-of-Life input was used. Accordingly, environmental damage was assigned a 1 (low) consequence score for all assets listed in the equipment asset category. The PoF was measured exclusively by the age-based condition or condition rating. As such, assets that were in poor condition received a higher PoF score. The results of the risk assessment are displayed using the Risk Profile for equipment below (Figure 4-8).



	Asset Count	Percent of Total
High Risk (16 to 25)	11	3%
Medium Risk (6 to <16)	335	78%
Low Risk (0 to <6)	82	19%
Average Risk Score	9.7	

Figure 4-8: Risk Profile for Equipment

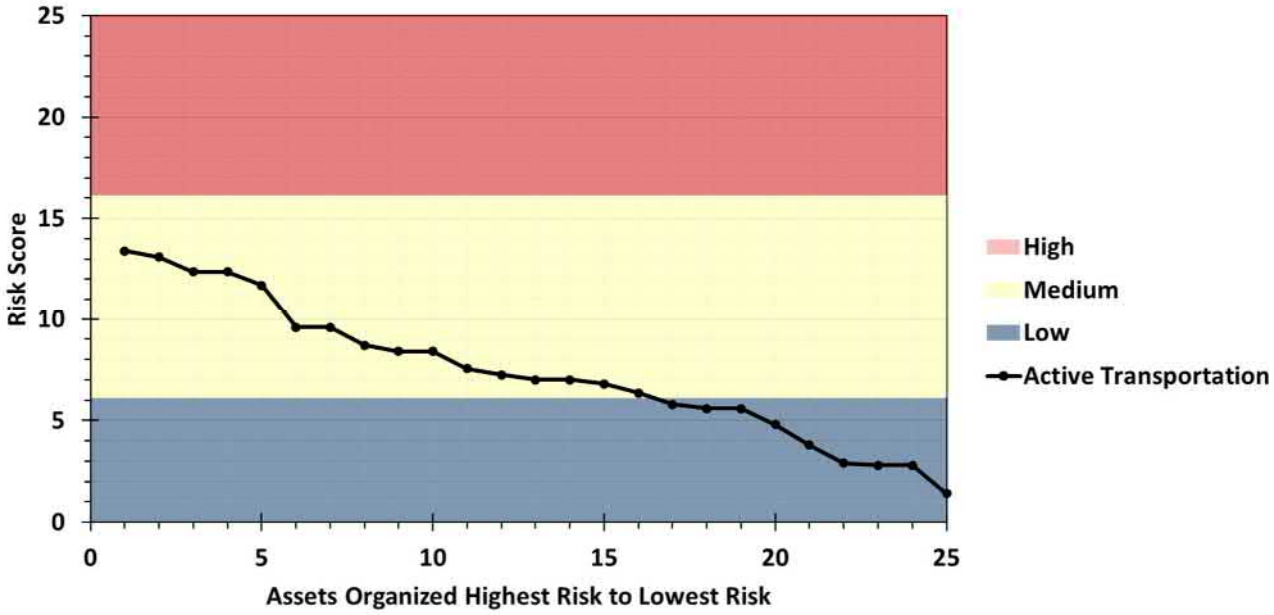
The three assets with the highest risk scores within the Equipment service category (excluding grouped assets) are the 1993 Champion Grader Series III (risk score of 20.5), 40W LED Canopy Fixtures (risk score of 18.5), and 2009 Gradall (risk score of 18.4). These assets were in very poor condition and received a medium to high PoF. Most of the assets that received a low-risk score were parks equipment used for maintenance activities as this type of equipment was bought recently, and as a result, received a low PoF.

4.2.3.5 Active Transportation (Multi-Use Paths)

Through discussion in the risk assessment workshop, the total replacement cost (weighted at 95%) and revenue (weighted at 5%) were discussed as potential factors to determine the economic CoF. However, information on how much revenue a multi-use path generates for the Town was limited. As such, the economic CoF was determined by exclusively using the total replacement cost where multi-use paths that were more expensive to replace received a higher economic CoF score. To determine the social CoF, factors such as health and safety concerns, viability alternatives and the concentration of amenities were used. As such, multi-use paths that had health and safety concerns, low alternative routes and high concentration of amenities received a high social CoF. The proximity to the provincial Natural Heritage Systems (NHS) was incorporated within the risk model to determine the environmental CoF. If a path

failed, there would be a need for construction materials and equipment to access the path, causing potential environmental damage. As such, paths that were closer to the NHS received a higher environmental CoF score.

To determine the PoF, the condition rating, usage, and climate vulnerability (climate hazard matrix) were used. A multi-use path that had a low condition rating, high usage and are more susceptible to climate hazards received a high PoF score. The results of the risk assessment for multi-use paths are presented in the risk profile below (Figure 4-9).



	Asset Count	Percent of Total
High Risk (16 to 25)	0	0%
Medium Risk (9 to <16)	16	64%
Low Risk (0 to <9)	9	36%
Average Risk Score	7.4	

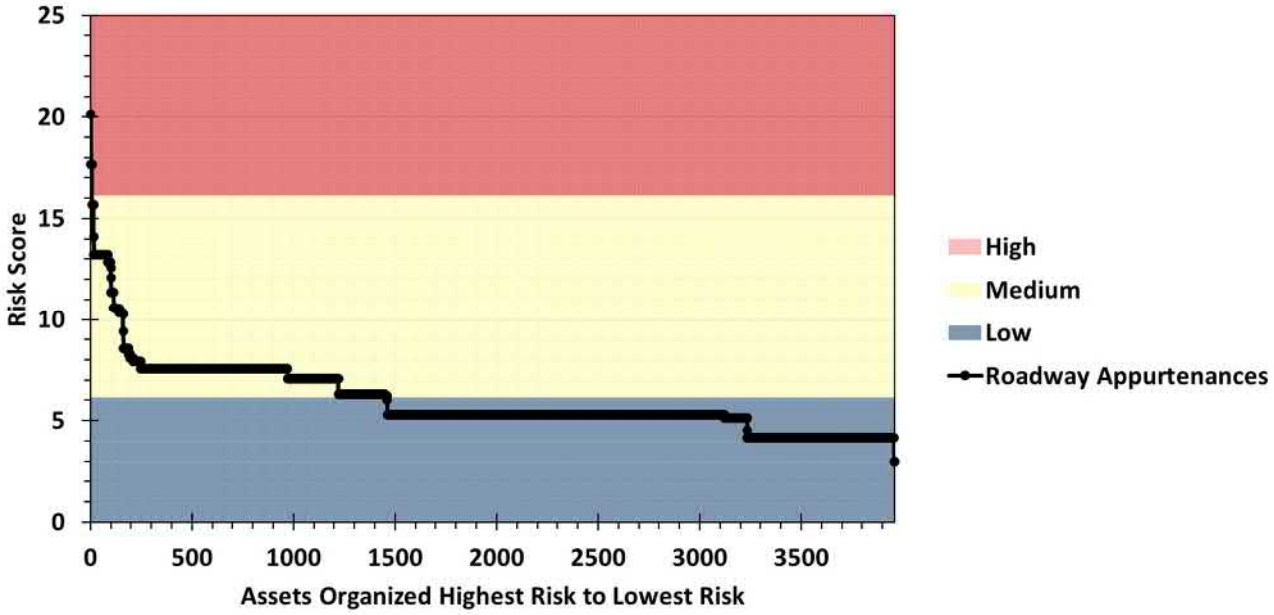
Figure 4-9: Risk Profile for Active Transportation (Multi-Use Paths)

All assets within the Active Transportation (multi-use paths) service category scored below a 15, indicating they fall within the low to medium risk levels. The two assets with the highest risk scores (13) are the Hodgson and Jacksons Point Parkette Trails, which are both in poor condition. In addition, they both have a characteristic that inflates their CoF score, namely being in close proximity to a natural heritage system and being part of an evacuation route respectively.

4.2.3.6 Roadway Appurtenances

The economic CoF was determined by using the total replacement cost (weighted at 20%) and secondary costs (weighted at 80%). The cost to replace road signs are relatively similar, while the secondary costs that could arise from a road sign failing (i.e., legal and insurance implications due to car accidents or property damage) was weighted significantly higher. Secondary cost scores for each asset class (Warning, Regulatory, and Priority Signs) were developed in collaboration with municipal staff after considering the potential economic consequences of failure. The social CoF was calculated using the criticality and number of people impacted, where a road sign that had a higher criticality and impacted a larger number of people received a high social CoF score. To assess the environmental CoF, the proximity to the provincial NHS was used. Accordingly, environmental damage was assigned a 1 (Low) consequence score for all assets listed in the roadway appurtenances asset category.

The PoF was measured exclusively by the assessed condition. As such, assets that have low condition ratings received higher PoF scores. The results of the risk assessment are presented in the Risk Profile for roadway appurtenances below (Figure 4-10).



	Asset Count	Percent of Total
High Risk (16 to 25)	6	0.2%
Medium Risk (6 to <16)	1,456	37%
Low Risk (0 to <6)	2,498	63%
Average Risk Score	6.0	

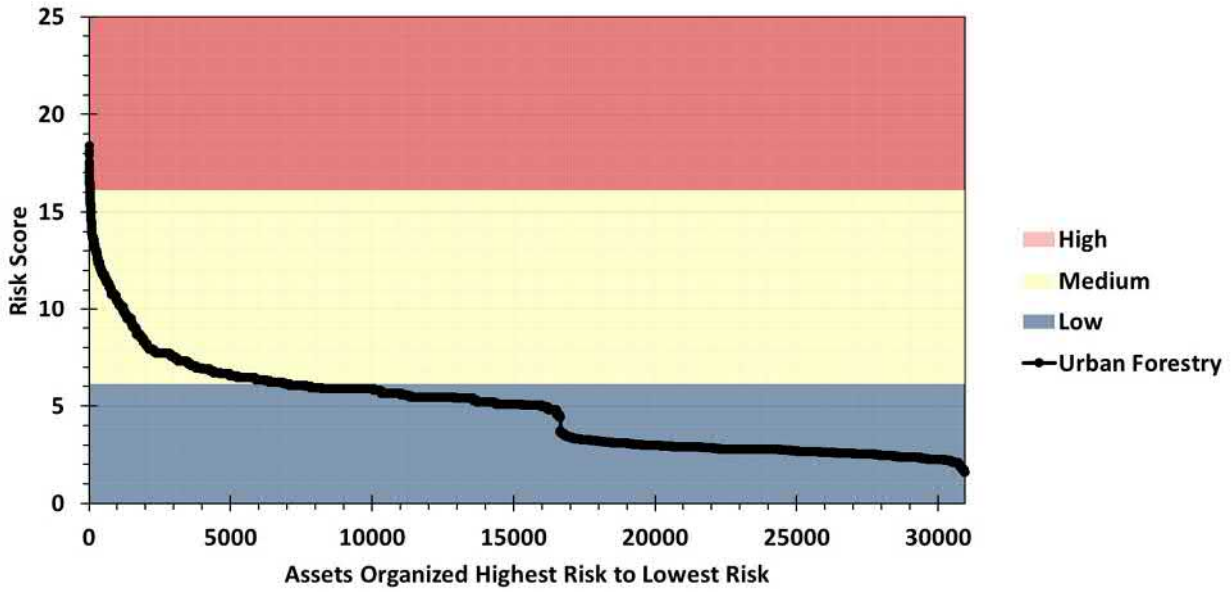
Figure 4-10: Risk Profile for Roadway Appurtenances

Overall, most assets received low to medium risk scores. A total of 6 assets received high risk score, which included Advisory Speed Tabs, Checkerboard and Reverse or Sharp curve signs. The asset that received the highest risk score (risk score of 20.2) is the Reverse Curve (Left) located on one of the Town's busiest streets (Lake Drive South)[1]. Signs that scored within the upper limits of the low risk level (risk score of 5-9) are STOP signs, which have a larger economic and social importance. The Town has established a rigorous road sign replacement system that does not allow their signs to reach a condition rating of 4 ('poor'). The condition rating scale is from 1 to 5 where 1 is 'very good', and 5 is 'very poor'. If condition data was missing, we assumed that they were in poor condition, and as a result, those assets would receive a condition rating of 5. Considering the Town's road sign replacement system, most assets within the Road Appurtenances had a generally low risk score in comparison to all other non-core asset categories.

4.2.3.7 Urban Forestry

Factors used to determine the economic CoF include the total replacement cost and impediments. As a result, assets with higher total replacement costs and greater impediments receive higher economic CoF scores. The social CoF is calculated using the presence of health and safety concerns, landscape value and location, while the environmental CoF was determined using several factors such as the overall health, nativity, size, and age class. The PoF was measured by the failure potential (physical condition) and climate hazard matrix (climate vulnerability). The results of the risk assessment are presented in the Risk Profile for urban forestry below (Figure 4-11).

[1] It should be noted that at the time of writing the condition of this sign is unknown and has therefore received a 5/5 for PoF until the condition can be confirmed. This rule holds true for all appurtenances with missing condition data.



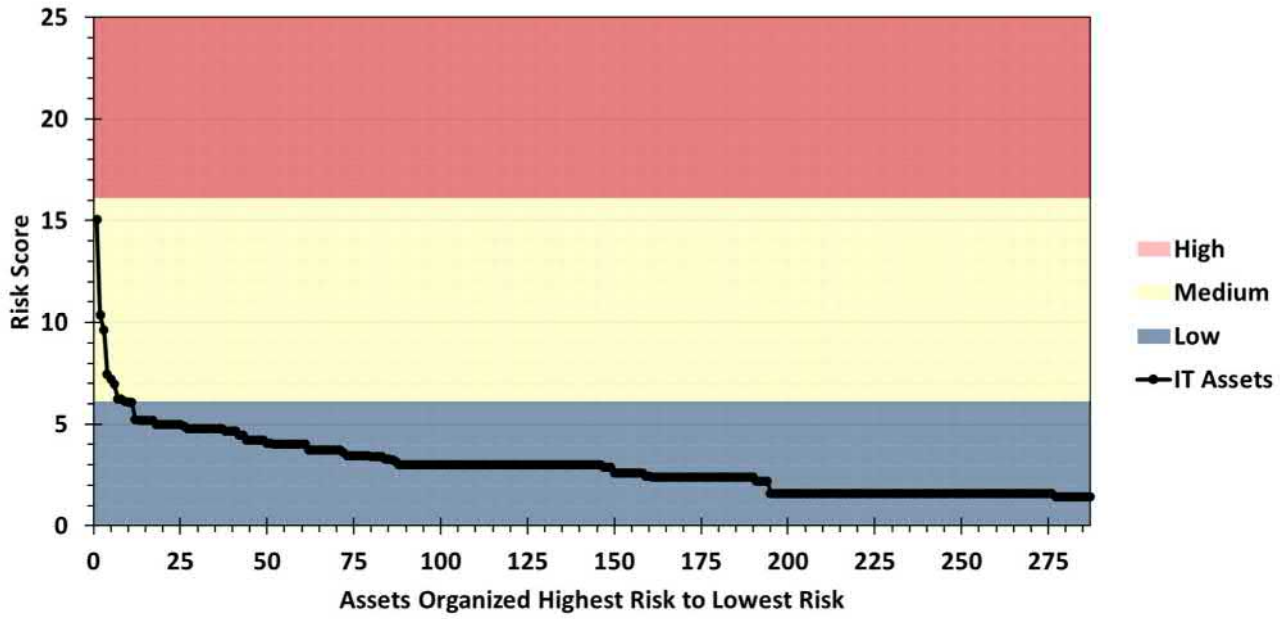
	Asset Count	Percent of Total
High Risk (16 to 25)	40	0.1%
Medium Risk (6 to <16)	7,801	25%
Low Risk (0 to <6)	23,093	75%
Average Risk Score	4.8	

Figure 4-11: Risk Profile for Urban Forestry

Trees that received a high-risk score (risk score of 16) are in heavy foot traffic locations and have a high likelihood of failure. These trees vary widely in overall health and shade-provided but generally have wider trunks indicating an older age.

4.2.3.8 IT Assets

Total replacement cost is used exclusively to determine the economic CoF for IT assets. As such, assets with higher total replacement costs have a higher economic CoF. To determine the social CoF, three factors were used: cybersecurity impact, productivity impact, and the number of people impacted. To assess the environmental CoF, Disposal at End of Life is used. In this circumstance, that is measured by the presence of absence of an Uninterrupted Power Supply (UPS). There are 14 assets with a 5 in Environmental CoF, the remainder are 1 or low. The PoF was measured by the obsolescence and vendor support. As such, assets that have a low condition rating, low obsolescence and high vendor support received a high PoF scores. Assets that fall under Broadband or Hardware use the same risk model. However, because physical condition cannot be measured for software, those assets have been reweighted to focus on technical condition. The results of the risk assessment are presented in the Risk Profile IT assets below (Figure 4-12).



	Asset Count	Percent of Total
High Risk (16 to 25)	0	0%
Medium Risk (6 to <16)	11	4%
Low Risk (0 to <6)	276	96%
Average Risk Score	3.0	

Figure 4-12: Risk Profile for IT Assets

Overall, most assets received low risk scores. The asset with the highest risk score is the Enterprise Resource Planning (ERP) solutions - Vadim iCity, Worktech Pearl, Noratek (risk scores of 15). This asset received a high risk score due to its high total replacement cost, significant impact to business operations in the event of a cybersecurity attack, and its high likelihood of becoming obsolete. Other risk scores varied across the three asset types (broadband, hardware, and software).

4.3 Operations and Maintenance Planning

Lifecycle operations and maintenance activities include inspections, preventative maintenance, and corrective maintenance. The goal of implementing operations and maintenance activities is to maximize the useful life of each asset, optimize the cost to deliver the service, and meet the desired LOS consistently. Disruptions to service are unavoidable, but with good operation and maintenance management and upkeep of lifecycle activities, disruptions can be reduced.

Throughout the lifecycle of an asset, operations and maintenance work will be a major component of the expected lifecycle activities. These maintenance activities keep the asset or system fit for the consistent and reliable delivery of important services. Lifecycle activities that fall under the operations maintenance category can be varied by response type and scale of maintenance requirements. Activities can be required through routine maintenance, response to poor asset condition or performance, or on an emergency basis. The expected types of lifecycle activities may include:

- **Inspection**: recurring activities at previously determined frequency that are undertaken to check the status of the asset, identify early signs of deterioration, and measure performance, where applicable;
- **Preventative maintenance**: activities that are undertaken to prevent failure or unreliable performance of a building component. These activities can be planned; and
- **Corrective (reactive) maintenance**: activities undertaken in response to an issue or fault in the system or the asset component to bring the asset back into service. These activities are not planned.

4.4 Current State of Operations and Maintenance

This section provides a summary of the maintenance processes employed by each non-core service category, a summary of the challenges and opportunities in existing maintenance processes, and a summary of the intervention outcomes as corrective versus preventative. This section was created to analyze the existing maintenance processes, how maintenance is performed, and provide suggestions on improvements to attain efficiency, enhance data collection, and minimize lifecycle costs in municipal operations.

4.4.1 Background Review

The primary computerized maintenance management system (CMMS) within the Town is the work order system WorkTech but it is not the only platform used to coordinate operations and maintenance (O&M) activities for all non-core service category. Other coordination tools are both software and manual record keeping in which maintenance interventions are identified, prioritized, and completed; however, the WorkTech and Fleet IO were the primary systems which acted as data sources for reviewing the maintenance data. The operations and maintenance processes include planned and unplanned activities that result in corrective and preventative interventions. The work order data provided by the Town for the years 2016 through 2023 was reviewed to characterize the current state of operations and maintenance of non-core assets. The CMMS data available for analysis does not provide enough information to characterize the standard work activities nor the frequency of activities.

In general, the WorkTech data limitations do not provide sufficient detail to track effort and material costs by asset intervention for a fulsome fiscal review of the maintenance processes and outcomes. Furthermore, the asset inventory management process (including creation and management of new asset data) is not defined for each of the non-core service areas. The development of methods and templates for capturing and modifying asset data for all of the non-core service areas is critically

important for the ongoing management of asset portfolios. It is recommended that the Town prioritizes the development of an asset data management strategy and improvements to tracking of O&M activities and costs, as outlined in continuous improvement initiatives identified in Section 6.1.3.

4.4.2 Operations and Maintenance Planning

The workshops conducted with divisional areas provided insight into the contemporary operation and maintenance process. A review of the available maintenance work order history was completed to summarize the nature of operations and maintenance interventions for each of the service categories. As a summary of the present processes, this section provides a snapshot of key processes and a high-level functional view of the non-core service categories. Current data limitations prevent a comprehensive insight into the current asset-related outcomes associated with existing maintenance processes, such as equipment lifecycle, Level of Service, condition management, and strategic performance. Specific recommendations are made in the following subsections and expanded on in the continuous improvement initiatives identified in Section 6.1.3.

4.4.2.1 Facilities

The Town of Georgina uses WorkTech to create and manage the work orders assigned to the facilities division. A summary of the maintenance processes is provided in Figure 4-13 below.

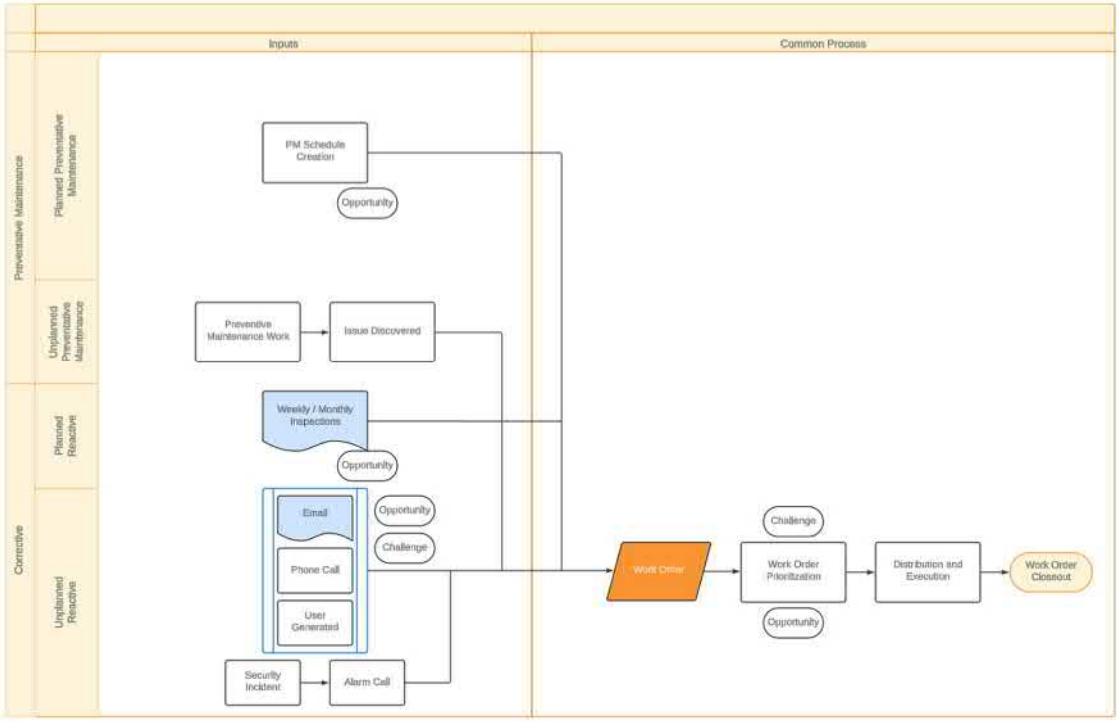


Figure 4-13: Facilities Maintenance Process

The Facilities Maintenance Process includes three types of maintenance work orders which are Inspections, Preventative Maintenance, and Corrective Maintenance. The work orders originate through multiple processes however they are then prioritized and distributed to the staff members for action and completion. Additional sources of O&M activities are adapted from the building condition assessment reporting. It is understood that these activities may not be employing the CMMS system. Process areas with challenges and opportunities are identified in the maintenance process workflow.

The work order data was provided by Town of Georgina's CMMS system (WorkTech) allowed for delineation into intervention types as corrective or preventative as summarized below.

Table 4-14: Facilities Maintenance Intervention Type by Year

Year	Corrective	Preventative	Total	% Corrective
2016	8	59	67	12
2017	749	545	1294	58
2018	388	556	944	41
2019	28	50	78	36
2020	6	0	6	100
2021	3	0	3	100
2022	32	0	32	100
2023	71	54	125	57

The facilities data indicates that there were few interventions during the COVID 19 shutdowns, which relates to years 2020 through 2021. As a result, it should be expected that a backlog may have accrued that would require aggressive response in the following years to maintain the expected levels of service. The number of work orders during year 2022 and 2023 has not yet matched the expected degree of backlog response. It should be noted that the data for 2023 only includes Q1 and Q2 data, hence, a maintenance and repair gap may be expected to materialize in either the O&M or capital expenditures in future years.

The Facilities Division is currently facing the following challenges pertaining to O&M:

- Service requests remain unmatched with available staff members due to lack of skilled trades;
- Some full-time equivalent capacity is over-estimated due to accrued vacation time; back-filling of staff availability, including resourcing with junior and intermediate staff, may be required to cover the equivalent capacity reduction due to vacation accruals;
- Work order process doesn't account for work order prioritization vs. proximity to staff working in the same asset or area;
- Facility Response Time to Security Related events are dependent on the third-party monitoring service which monitors the Fire Life Safety System 24/7 and alert the facility staff members; and
- Work order backlog alignment with available skills can cause unanticipated intervention delay.

The Facilities Division has the following opportunities to improve how they deliver O&M services:

- Assistance with Operations and Inspections;
- Skilled trades contract to provide necessary resources during significant demand periods; and
- Work orders (PSRs) could be delivered directly to staff via the CMMS system.

Table 4-15 below describes the *most recurring* current maintenance activities undertaken by the Town to manage facilities assets. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders.

Table 4-15: Maintenance Activities for Facilities Assets

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Buildings	• Roof drain (weekly) • Sprinkler inspection • Septic inspection • Fire/life safety system inspection • HVAC unit inspection • Electrical Safety Authority (ESA) inspection (annual)	• Sensor calibration • Pump summer and winter maintenance • Ice resurfacer regular maintenance	• Maintenance cleaning (includes floor care, specialized cleaning, grounds cleaning) • Replacement (includes replacing filters, light bulbs, batteries,
Generator	• General inspection (monthly) • Backup generator (annually) • Portable generator (monthly)	• Performed by third-party contractor	• Performed by third-party contractor
Outdoor Facilities		• Sweep parking lots • Snow and ice removal	• Paint yellow markings/curbs • Remove graffiti • Remove, hang, or replace banners and advertisements • Staining fence

4.4.2.2 Parks

The parks division primarily uses Filehold for managing O&M and includes both customer feedback as well as inspection results to populate the work order. A summary of the maintenance process is provided in Figure 4-14 below.

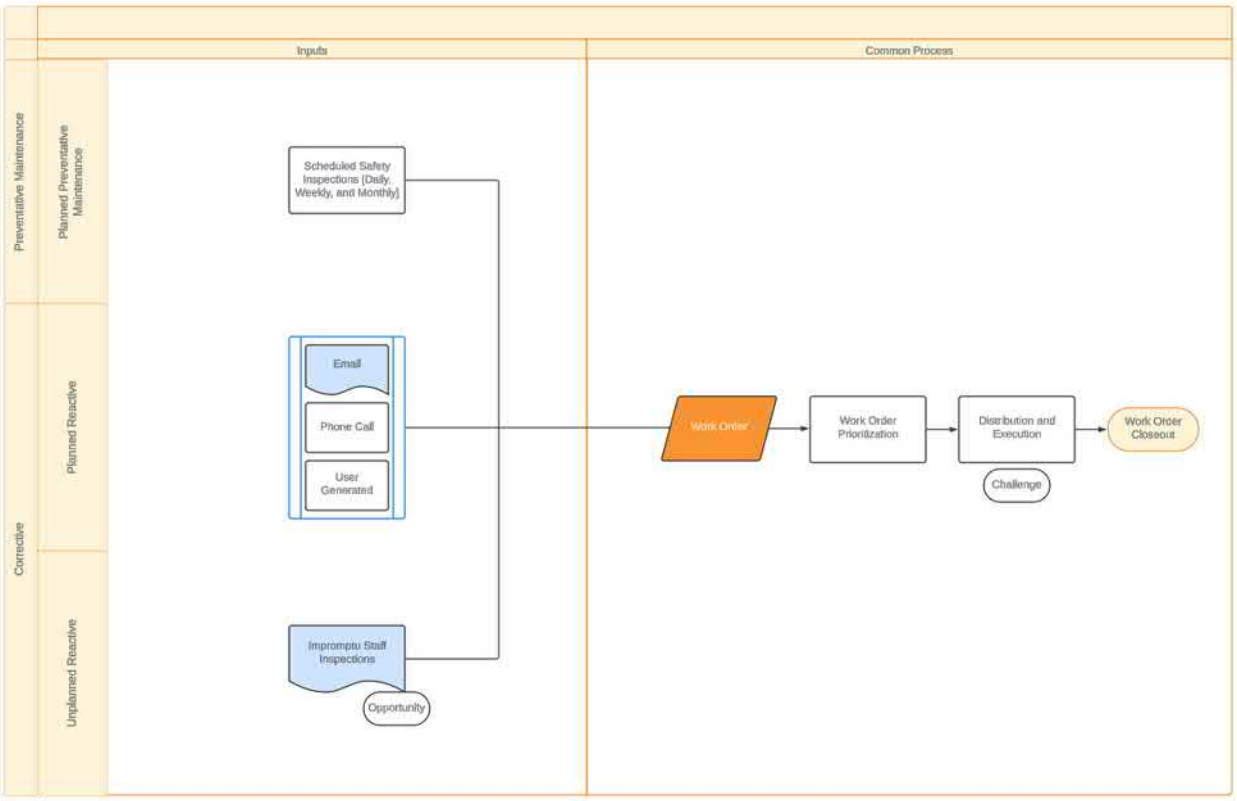


Figure 4-14: Parks Maintenance Process

The Parks Maintenance Process includes four types of Maintenance work orders which are Preventative [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. Work orders originated through the various input processes are prioritized and distributed to the staff members for action. Process areas with challenges and opportunities are identified on the flowchart figure.

The data for this analysis was received from the Town of Georgina from their work order system, FileHold. The available CMMS data allowed for delineation into intervention types as corrective or preventative as summarized below.

Table 4-16: Parks Maintenance Intervention Type by Year

Year	Corrective	Preventative	Total	% Corrective
2017	1	1	2	50
2018	364	15	379	96
2019	21	3	24	88
2020	20	8	28	71
2021	55	19	74	74
2022	53	30	83	64
2023	39	81	120	33

It is understood that the Town of Georgina responded to maintenance intervention backlog during 2018. Therefore, the intervention rates dropped during the following years due to the backlog processed in 2018. It should be noted that the data for 2023 only includes Q1 and Q2 data.

The Parks Division is currently facing the following challenges pertaining to O&M:

- Work order prioritization is exposing resource limitations which in turn delays the actioning of important work;
- The portfolio growth isn't supported by parallel staffing growth which is negatively impacting the asset condition;
- Equipment limitations are potentially impacting work order delay; and
- Funding limitations are linked by the stakeholders to both the staffing and equipment challenges noted above.

The Parks Division has the following opportunities to improve how they deliver O&M services:

- Adding periodic inspections and preventive maintenance pre-scheduling in the CMMS, complete with resource expectations (labour, equipment, materials);
- Improving procurement of required equipment and parts including spare parts which are aligned with maintenance policies;
- Coordination with other business units for resource sharing; and
- Coordination with the Urban Forestry service for the identification of capital investment needs related to Parks tree planting activities.

Table 4-17 below describes the *most recurring* current maintenance activities undertaken by the Town to manage parks assets. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders.

Table 4-17: Maintenance Activities for Parks Assets

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Grass	• Roof drain (weekly) • Sprinkler inspection • Septic inspection • Fire/life safety system inspection • Electrical Safety Authority (ESA) inspection (annual)	• Sensor calibration • Pump summer and winter maintenance • Ice resurfacer regular maintenance	• Grass cutting
Trees	• General inspection (monthly)	• Tree watering	• None currently identified

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Sports fields	• Light inspections • Splash pad inspection (daily) • Playground structure inspection (monthly)	• Aeration • Fertilizing • Install shade structure • Field lining • Top dressing	• Garbage collection • Cleaning and debris removal
Beaches	• None currently	• None currently identified	• Beach grooming • Beach cleanup

4.4.2.3 Fleet

The Fleet division employs various CMMS systems including WorkTech, and FleetIO along with Geotab which facilitates tracking of vehicles, and manual hard-copy processes to track the maintenance work orders for both the fleet and the equipment that the Town owns. A summary of the maintenance processes in which the CMMS and manual systems generate work orders are provided in Figure 4-15 below.

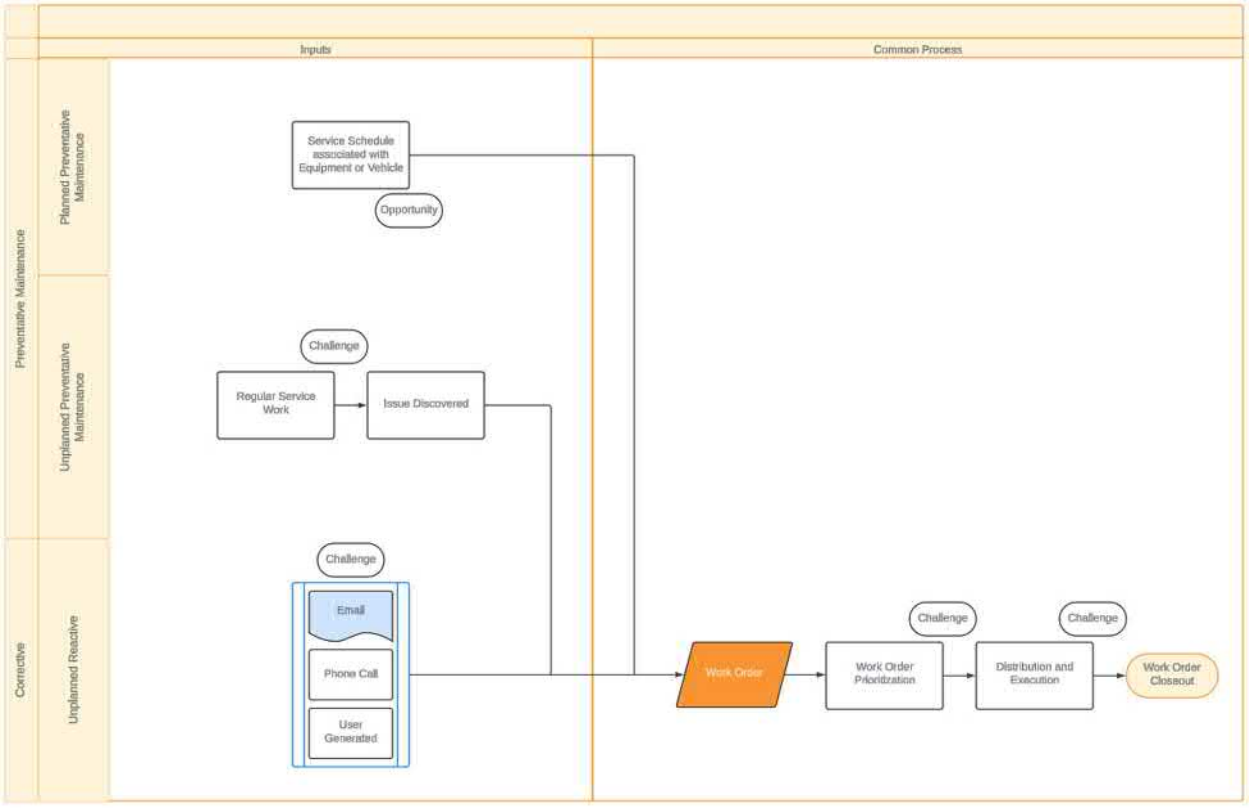


Figure 4-15: Fleet Maintenance Processes

The Fleet Maintenance Process includes four types of Maintenance work orders which are Preventative [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. The work orders originated through multiple processes are prioritized and distributed to the staff members for action. Process areas with challenges and opportunities are identified within the workorder process flow diagram.

The work order data was provided by Town of Georgina from the Town's CMMS including WorkTech, Geotab, and FleetIO. The available CMMS data allowed for delineation into intervention types as corrective or preventative as summarized below; however, due to the combination of both Fleet and Equipment maintenance data into one dataset, the following is a combined review of the fleet and equipment maintenance interventions together.

Table 4-18: Fleet and Equipment Maintenance Intervention Type by Year

Year	Corrective	Preventative	Total	% Corrective
2016	100	222	322	31
2017	549	247	796	69
2018	579	298	877	66
2019	482	235	717	67
2020	406	164	570	71
2021	344	287	631	55
2022	712	294	1006	71
2023	554	67	621	89

The CMMS intervention data suggest that the maintenance interventions remained relatively unchanged during the COVID 19 pandemic. From these data, it is expected that the asset portfolios for fleet and equipment would demonstrate a stable asset portfolio condition. It should be noted that the data for 2023 only includes Q1 and Q2 data.

The Fleet Division is currently facing the following challenges pertaining to O&M:

- CMMS systems overlaps, including duplication of schedule management between manual and Geotab methods;
- Staff resource limitations impacting the throughput of work order completion;
- Supply chain logistics impeding work order completion;
- The maintenance is mainly handled in a corrective manner and the work order is generated manually; and
- Funding allocation process is expected to require changes to meet maintenance objectives.

The Fleet Division has the following opportunities to improve how they deliver O&M services:

- Pre-scheduled periodic inspections across all fleet asset classes;
- Automatic Vehicle Location and Telematics for condition monitoring and inspection scheduling;
- More complete tracking of equipment with Automatic Vehicle Locator within Geotab; and
- Geotab automation integration, including refinement to prevent false alerts to align with existing manual prioritization and management workflow.

Table 4-19 below describes the *most recurring* current maintenance activities undertaken by the Town to manage parks assets. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders.

Table 4-19: Maintenance Activities for Fleet Assets

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Fleet	• Commercial Vehicle Operator's Registration (CVOR) daily inspection before use • Commercial Vehicle Operator's Registration (CVOR) annual inspection • Semi-annual inspection • Pre-winter inspection • Summer seasonal inspection • New vehicle inspection	• Oil change • Install season-appropriate tires • Undercoating	• Repairs (includes issues related to electrical, powertrain, braking, and wheel components) • Repair of sustained body damage • Emission test • Repair fluid leaks • Replace battery

4.4.2.4 Equipment

The Equipment divisions employ the same various CMMS systems as the Fleet division, including WorkTech, and FleetIO along with Geotab which facilitates tracking of vehicles, and manual hard-copy processes to track the maintenance work orders for the fleet and the equipment that the Town owns. A summary of the maintenance processes in which the CMMS and manual systems generate work orders are provided in Figure 4-16 below.

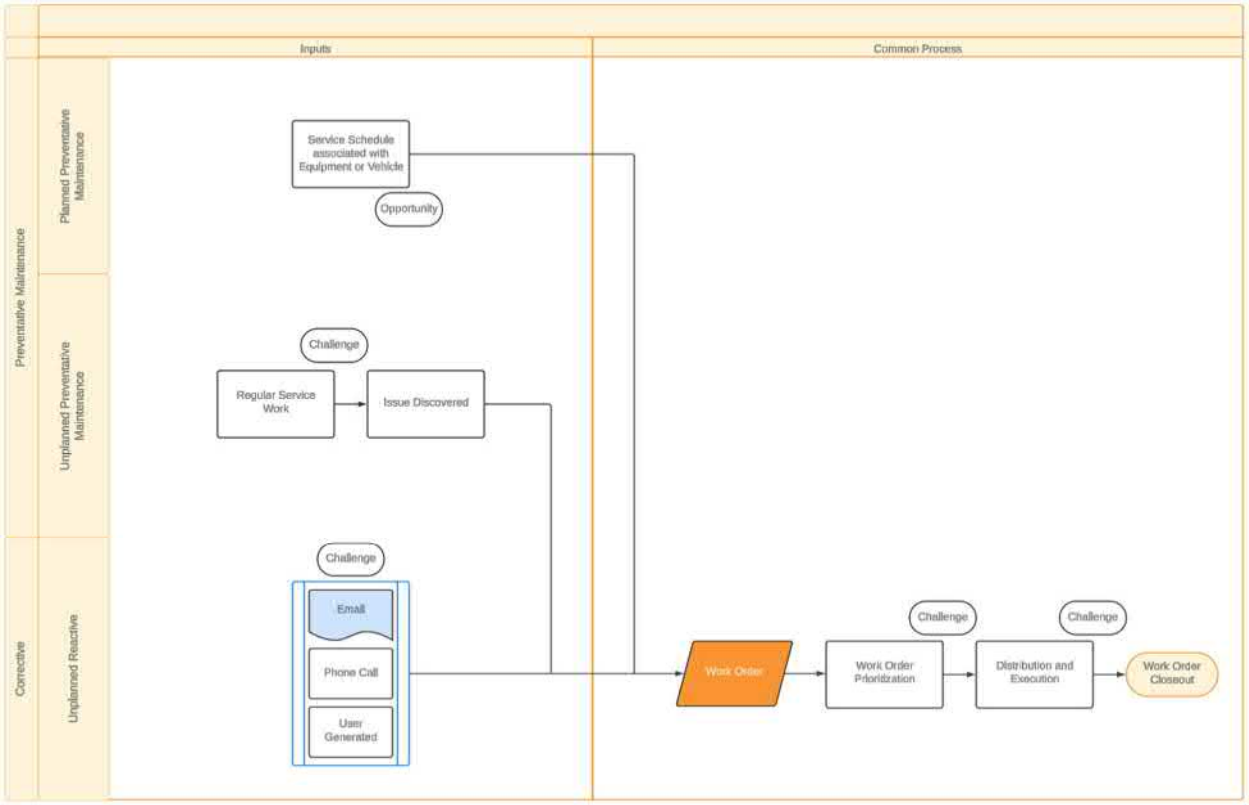


Figure 4-16: Equipment Maintenance Processes

The Equipment Maintenance Process includes four types of Maintenance work orders which are Preventative [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. The work orders originated through multiple processes are prioritized and distributed to the staff members for action. Process areas with challenges and opportunities are identified within the workorder process flow diagram.

The work order data was provided by Town of Georgina from the Town's CMMS including WorkTech, and FleetIO are combined with Fleet. For a review of the combined Fleet and Equipment maintenance interventions refer to Table 4-16.

The Equipment Division is currently facing the following challenges pertaining to O&M:

- Maintenance management systems overlap, including duplication of schedule management between manual and Geotab methods;
- Staff resource limitations impacting the throughput of work order completion;
- Supply chain logistics impeding work order completion;
- The maintenance is mainly handled in a corrective manner and the work order is generated manually;

- Funding allocation process is expected to require changes to meet maintenance objectives; and
- It is understood that some Equipment may be receiving maintenance from other divisions in an undesirable manner that bypasses Fleet and Equipment.

The Equipment Division has the following opportunities to improve how they deliver O&M services:

- Scheduled monthly inspections across all equipment asset classes;
- Divesting of equipment that is not suitable for intended tasks (e.g., opportunity to realize equipment value and re-invest in new equipment); and
- Equipment rental strategy for supporting shared resource availability and central cost management.

Table 4-20 below describes the *most recurring* current maintenance activities undertaken by the Town to manage parks assets. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders.

Table 4-20: Maintenance Activities for Equipment Assets

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Equipment	• General inspection (monthly) • Backup generator (annually) • Portable generator (monthly)	• Oil change • 500-hour service • Supply hydraulic filters	• Replace hydraulic filters • Repair of sustained body damage • Repair fluid leaks • Replace battery

4.4.2.5 Active Transportation (Multi-use Paths)

The Active Transportation (Multi-use Paths) service area is using the same work order process as the Roadway Appurtenances service, including Drives and Geotab to create and manage the work orders. A summary of the maintenance processes is provided in Figure 4-17 below.

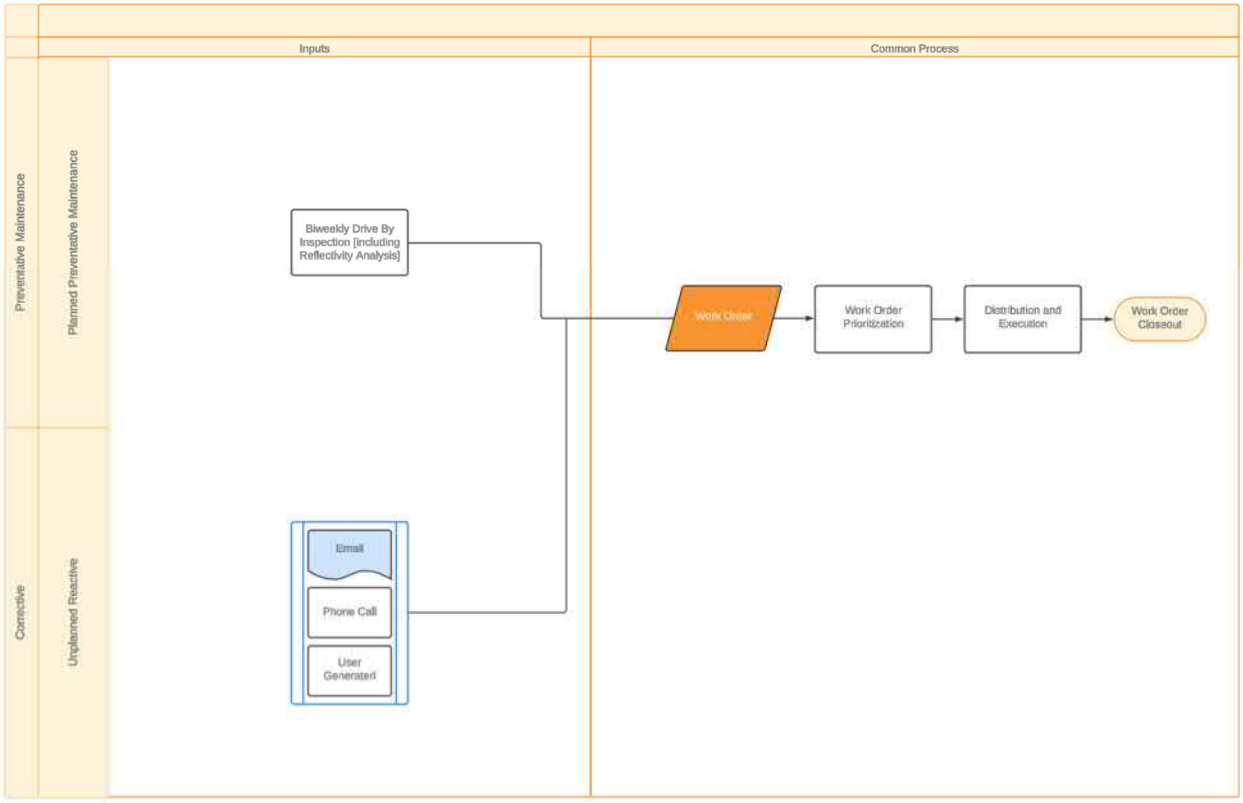


Figure 4-17: Active Transportation Maintenance Processes

The Active Transportation (Multi-use Paths) Process includes four types of Maintenance work orders which are Preventative [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. Work orders originated through multiple processes are prioritized and distributed to the staff members for action.

The Active Transportation Division is currently facing the following challenges pertaining to O&M:

- Tracking of corrective and preventative maintenance activities is limited.

The Active Transportation Division has the following opportunities to improve how they deliver O&M services:

- Coordination of inspections with Parks service for trails that cross designated right-of-way; and
- Coordination with Parks equipment including trucks (pickups) or ATVs with plow front for routine O&M activities.

The ongoing work management process could not be reviewed in detail as past workorder information was not available for review to distinguish corrective and preventative interventions. See Section 6.1.3 for details on continuous improvement initiatives.

4.4.2.6 Roadway Appurtenances

The Roadway Appurtenances service is understood to primarily use Worktech to create and manage the work orders (The process is shared with the Active Transportation service). A summary of the maintenance processes is provided in Figure 4-18 below.

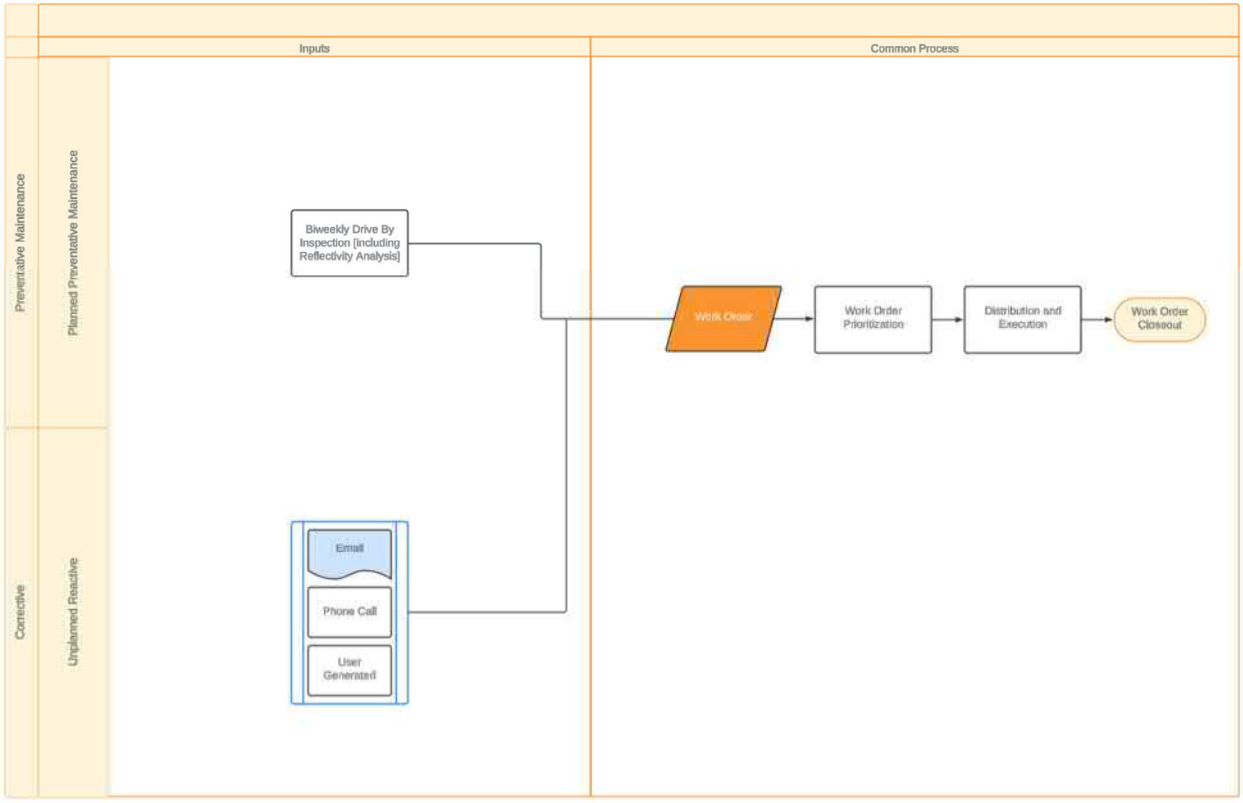


Figure 4-18: Roadway Appurtenances Maintenance Processes

The Roadway Appurtenances process includes four types of Maintenance work orders which are Preventative [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. Work orders originated through multiple processes are prioritized and distributed to the staff members for action. The O&M workshop for roadways did not identify ongoing challenges nor opportunities.

The Roadway Appurtenances Division is currently facing the following challenges pertaining to O&M:

- Tracking of inspections, corrective and preventative maintenance activities is limited.

The Roadway Appurtenances Division has the following opportunities to improve how they deliver O&M services:

- Further develop the informational signs inventory including approximately 7,000 additional informational signs known to stakeholders, see continuous improvement initiative SOTI-4 in **Section 6.1.1**;

- Coordination of inspections with Parks service for signs within the designated right-of-way;
- Parking signs, including no parking signs, require inventory development; and
- Inspections should follow MMS regulations as described in the condition assessment plan for roadway appurtenances in Appendix D.

Table 4-21 below describes the *most recurring* current maintenance activities undertaken by the Town to manage Roadway Appurtenances. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders. The ongoing work management process could not be reviewed in detail as past workorder information was not available for review to distinguish corrective and preventative interventions.

Table 4-21: Maintenance Activities for Roadway Appurtenances

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Road Signs	• Annual Condition and Retro-reflectivity Assessments as per MMS	Not Currently Tracked	Not Currently Tracked

4.4.2.7 Urban Forestry

The Town of Georgina utilizes WorkTech to track work orders to related to the Urban Forestry division. A summary of the maintenance process is provided in Figure 4-19 below.

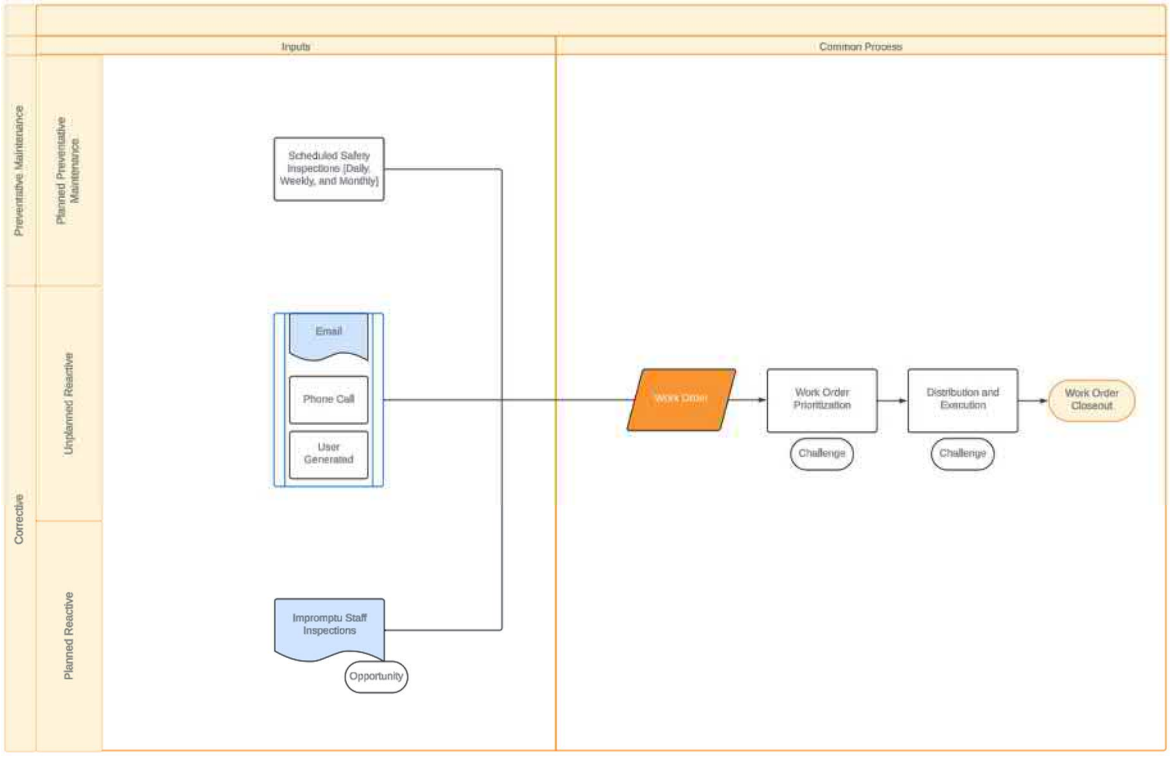


Figure 4-19: Urban Forestry Maintenance Process

The Urban Forestry Process includes four types of Maintenance work orders which are Preventive [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. Work orders originated through multiple processes are prioritized and distributed to the staff members for action. Process areas with challenges and opportunities are identified on the maintenance process flowchart. The data for this analysis was received from the Town of Georgina from their work order system, WorkTech. The available CMMS data allowed for delineation into intervention types as corrective or preventative as summarized below in Table 4-22.

Table 4-22: Urban Forestry Maintenance Intervention Type by Year

Year	Corrective	Preventative	Total	% Corrective
2016	186	97	283	66
2017	524	281	805	65
2018	289	153	442	65
2019	387	127	514	75
2020	222	285	507	44
2021	375	170	545	69
2022	371	175	546	68
2023	148	58	206	72

The CMMS data suggests that the maintenance interventions were largely unaffected by the pandemic in 2020. It should be noted that the data for 2023 only includes Q1 and Q2 data. It is expected that the consistent O&M intervention through the pandemic period may result in future positive performance of the asset portfolio, particularly with regard to the long-term success of new plantings during this period as a result of consistent maintenance activities. Future assessments of the asset performance over time will be useful to confirm the success of O&M activities.

The Urban Forestry Division is currently facing the following challenges pertaining to O&M:

- Inefficient prioritization of the work order could end up in causing delays in completing the workorders which are important to be completed in a timely fashion (e.g., pruning of trees to avoid obstructing the view of road signs);
- Resourcing issues are presently driving the time frame for completion of some work orders, such as tree planting, removals, and some inspections;
- Climate externalities including weather damage, insect infestation, flooding, and other environmental factors directly impact both the asset condition, service, and maintenance intervention workload;
- Equipment limitations prevent or impair some work orders, such as stumping; and
- Budget availability may cause some deferral of maintenance and replacement activities determined by the prioritization strategy.

The Urban Forestry Division has the following opportunities to improve how they deliver O&M services:

- Potential for the development or shared use of arboretum for planned plantings;
- Lake Simcoe Region Conservation Authority resource sharing for funding, tree planting, and program development;
- Pre-scheduled assessment and pruning on the 5-to-7-year schedule; and
- Improve resource planning (staff, equipment, O&M prioritization, and scheduling) with other departments such as planting and management activities and equipment with level of service outcomes.

Table 4-23 below describes the *most recurring* current maintenance activities undertaken by the Town to manage Urban Forestry assets. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders.

Table 4-23: Maintenance Activities for Urban Forestry

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
Forestry	• Tree inspection/health assessment • Emerald Ash Borer tree assessment	• Roadway crown raise • Tree trimming	• Removal of dead/fallen trees • Removal of stumps • Tree branch removal • Replacing dead trees • Tree pruning

4.4.2.8 Information Technology

The Information Technology [IT] division primarily uses Track IT as a ticketing system to track issues reported by the various customer categories. A summary of the maintenance process is provided in Figure 4-20 below based on workshop discussions.

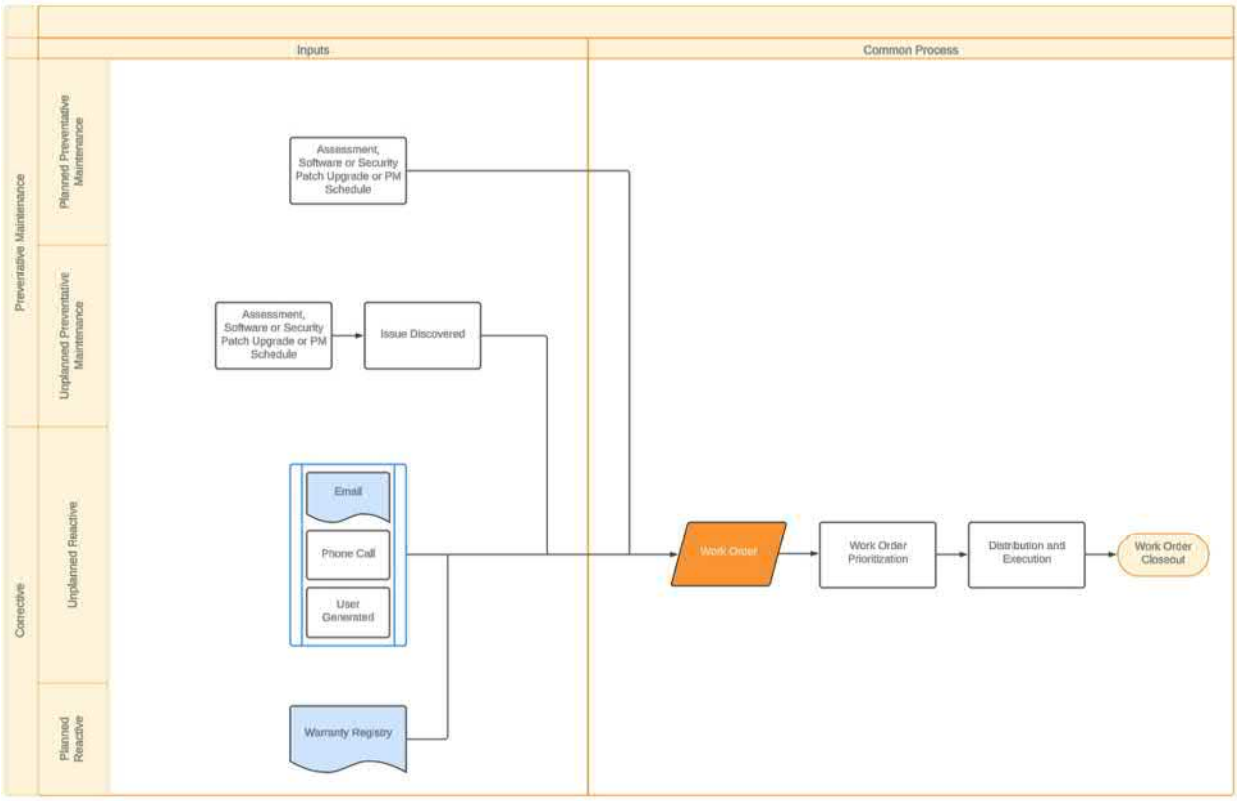


Figure 4-20: Information Technology Maintenance Process

The IT Maintenance Process includes four types of Maintenance Workorders which are Preventative [Planned Preventive Maintenance, Unplanned Preventive] and Corrective [Planned Corrective, and Unplanned Corrective]. The work orders originate through multiple processes; however, they are then prioritized and distributed to the staff members for action and completion.

The work management process could not be reviewed in detail as work orders were not available for review to distinguish corrective and preventative interventions. The existing CMMS system for Information Technology is based on a ticket system that may affect multiple assets; consequently, the individual workorders are not tracked against individual assets. The Information Technology asset hierarchy may benefit from restructuring individual line assets into an asset service group such that workorders can be tracked against tangible assets by proxy.

The IT Division is currently facing the following challenges pertaining to O&M:

- Asset portfolio growth and intervention planning occasionally reveals limitations in the number of available staff; and
- Number of staff versus availability is a challenge identified by stakeholders for the completion of work tasks.

The IT Division has the following opportunities to improve how they deliver O&M services:

- Consistent use of the ticket system to provide improved visibility regarding interventions and outcomes; and
- Improved delineation of service responsibility between Information Technology and other service categories (e.g., facilities security systems).

Table 4-24 below describes the *most recurring* current maintenance activities undertaken by the Town to manage IT assets. Dillon identified the maintenance activities based on a keyword analysis of the WorkTech work orders and based on input from Town staff.

Table 4-24: Maintenance Activities for IT Assets

Asset Type	Inspections	Preventative Maintenance	Corrective Maintenance
IT Assets	• Weekly Inspection of Server Room • Visual Operation Health Check	• Software updates	• Replacement of components on predetermined schedule

4.4.3 Summary Observations

The available data from the CMMS is a partial view of operations and maintenance interventions for the non-core divisional asset portfolios. This is due to a combination of factors, including limited CMMS data available for review at the time of this memorandum, the use of various CMMS software and non-software solutions, and the data coding and identification within the CMMS platform(s). Additional CMMS integration with asset levels of service metrics may provide future insight into maintenance interventions versus asset performance. In addition, the availability of historic asset condition data combined with historic maintenance interventions would provide for additional analysis of asset longevity performance.

The operations and maintenance planning processes are supported by CMMS tracking. The evolution of these CMMS processes to align with the asset management framework will provide strategic integration of the lifecycle management process. These evolutions may include tracking of additional attributes in the maintenance work order process to include asset level of service metrics, identification of interventions at the asset component/element hierarchy level, and labour and expense tracking to further refine intervention value into the asset portfolio. The additional data collected in the O&M process can be used to inform the Town's LOS and improve asset lifecycle models.

4.5 Proposed Operations and Maintenance Plan

4.5.1 Approach

The Operations and Maintenance (O&M) plan provides asset managers with a plan for O&M activities to achieve asset longevity, and leverage budget resources to achieve the Town's LOS Objectives through the successful implementation of O&M activities. The operations and maintenance plan approach shall assist the Town to achieve the following:

1. Adopt a budget category for each of the non-core asset service areas to manage and track expenditures.
2. Adopt a consistent workorder system in each of the service areas that tracks investment expenditures against assets.

The present budgeting process does not clearly delineate the non-core asset service areas as departments with identifiable budget planning. Some services areas (e.g., such as fleet and equipment) are spread amongst core asset service area departments. Clearly defining non-core asset service areas by department will assist with both service responsibility clarity, as well as budget development and performance monitoring.

The non-core asset service areas would each benefit from several improvements to meet the key goals. These include:

- Develop a uniform procedure for workorder processing in which each request is assigned to an asset. Re-defining the asset hierarchy for some service areas may be required to associate interventions against tangible assets. For example, Urban Forestry may define the asset hierarchy into functional areas (such as canopy areas consisting of individual species) in order to track common intervention tasks against levels of service goals;
- Review budgets based on desired level of service outcomes, and completion rates of O&M activities against assets. This will allow for more informed budget projections against asset management priorities; and
- Develop standard operating procedures that describe the common O&M interventions, complete with typical labour requirements, skill / trade requirements, expense, and material costs. Using SOPs in the workorder process will provide a means of estimating budget expense by combining SOP costs against O&M projections.

The approach described above is an ideal outcome of the maintenance planning process. Each of the actions represent opportunities to adapt existing and familiar practices into formal processes and continue to build the non-core asset service area delivery. The O&M intervention reinvestment process is an important target for continual improvement and can take several years to implement.

4.5.2 Methodology

The Town's proposed operations and maintenance plan was developed through a detailed review of the available workorder data, workorder generation and completion rates, and historic actual budget expenditure. The budget expenditure was assessed through a categorization of budget department and expense account descriptions, and association of budget line assets to non-core asset categories. The non-core assets, at the present time, do not have industry benchmarking initiatives that provide guidance on expected reinvestment rates. As a consequence, the proposed budget is based on historic expenditures and an analysis of workorder completion rates for the non-core asset areas available to analyze. The analysis provides insight into historic reinvestment expenditure as a proportion of capital value and a review of the variation in expenditure. These data are combined with historic workorder completion performance metrics to identify potential for expenditure bottlenecks (i.e., staff or funding capacity to achieve desired interventions).

The proposed operations and maintenance reinvestment plan is based on a conservative forecast of the expected reinvestment rates for each non-core asset service category. The projections are based on an estimation of historic investment performance.

4.5.3 Proposed CMMS Revisions

The following section proposes refinements to the CMMS system for all non-core service areas to align with the maintenance management goals under the asset management plan framework. The fields summarized below in Table 4-25 represent specific recommendations related to workorder records that are not used consistently between the non-core service classes.

Table 4-25: CMMS Record Fields and Purpose

CMMS Workorder Field	Use
Workorder	Unique action or task identifier scheduled against an asset. These exists in Worktech to distinguish individual actions. A unique number should be generated automatically in all CMMS systems in use.
Request Date	Time and date of the workorder request or entry into the CMMS. This should be automatically generated for all workorders
Asset ID	All workorders should be traceable to an asset in the asset management inventory for the non-core service category. Some service categories may benefit from a reorganization of the asset hierarchy in order to associated individual maintenance actions to tangible assets
SOP	The request should be based on a Standard Operating Procedure activity from a selection list pre-defined in the CMMS with written SOPs
Request	A free-form description of the scope or specific issue. If an SOP is not applicable, then the request should be an instructive actionable task
Scheduled Date	The intended date of completion for the workorder record. (Standardized language should be used in lieu of variations on "due date" or "scheduled date" and not confused with "request date")

CMMS Workorder Field	Use
Completion Date	The workorder closeout process should include updating the workorder record to indicate that the task is complete.
Completion Notes	The CMMS system should include feedback on the task indicating exceptions to completing the SOP, confirmation of the units of completion (e.g., 30 trees trimmed, vehicle parts replaced), extenuating circumstances related to the action, or observations regarding the asset

In addition to a uniform application of the CMMS system(s) between the non-core service categories, each of the service areas should create SOPs for the most common activities. Examples of activities that are presently in the workorder system and that benefit from SOPs to standardize resource allocation are provided in the Section 4.4. A typical SOP should include the elements summarized in Table 4-26.

Table 4-26: CMMS Standard Operating Procedure Information Sample

Element	Description
SOP	SOP-####
Description	Septic inspection – visual review of holding tank(s), diverter valves, distribution box, and inspection ports
Purpose	Provide condition information and recommendations for additional actions if required
Frequency	Annual
Procedure	1. Holding Tank 1.1. Open holding tank(s) inspection hatches and look for obstructions or foreign debris 1.2. Flush toilet(s) and fixtures and confirm free discharge into holding tank(s) chamber(s) 1.3. Examine plumbed system for signs of leaks (surface staining, standing water) 1.4. Check the water level and measure the depth – confirm water level is below the outlet pipe and not overfull (potential drain field problem) 1.5. Measure and record solids depth, measure, and record scum/sludge depth 1.6. Check baffles for solids obstructions and clear obstructions if possible 1.7. Test and confirm level alarm function 2. Distribution 2.1. Examine diverter valve positions and record open/closed status 2.2. Examine diverter box for damaged outlets or restrictions, examine for structural integrity, record evidence of tilting or other uneven distribution 3. Examine holding tank(s), diverter box, and field for wetness, sinkholes that may be indications of problems.
Labour	1. General labour: 1 hour per unit
Equipment	None
Materials	No consumables
Expense	None
Unit of Measure	Each septic system up to 2000 Litres holding capacity, 100 m^2

4.5.4 Analysis of Operations and Maintenance Reinvestment Rates

The performance of the workorder processing was reviewed from the available Worktech data. The completion rate is estimated from the number of opened workorder requests and a completion date. It is possible that completion is under-reported, suggesting that O&M closeout processes require additional oversight. A summary of the workorder completion rate variability year over year is summarized in Table 4-27. It is important to note that no workorder performance data was available from Worktech or other existing data sources for the service categories of Active Transportation, Roadways Appurtenances, and IT.

Table 4-27: Summary of Workorder Completion Rate (Worktech)

Service Category	2016	2017	2018	2019	2020	2021	2022	2023
Facilities	70.1%	94.5%	96.0%	93.6%	33.3%	0.0%	0.0%	29.6%
Parks	-	0.0%	12.2%	8.7%	81.5%	75.3%	54.3%	39.4%
Fleet and Equipment	26.0%	97.5%	53.3%	95.7%	94.4%	19.2%	26.0%	7.2%
Urban Forestry	88.7%	89.7%	97.7%	79.4%	64.3%	69.7%	50.2%	82.5%
Average	42.0%	84.6%	67.2%	91.2%	79.7%	31.1%	29.8%	38.0%

The average completion rate over the available data ranged from 30% to above 90% on a year-over-year basis from 2016 through 2023. The general trend suggests that completion rates are falling, particularly in the post-pandemic period. This may be due to a combination of factors, including:

- Incomplete workorder generation and closeout procedures;
- Activities may be spread into other asset service areas and bypassing the workorder process; and/or
- Staff shortages may be preventing logging or completion of activities.

These data are consistent with observations made during workshop meetings, in which challenges were described in meeting desirable interventions due to resource constraints. For this reason, a conservative approach is adopted for the purpose of forecasting O&M budget requirements.

The O&M reinvestment rates were reviewed using the available historic budget data provided by the Town. Each of the non-core asset service areas were extracted from the annual budget data using the expense descriptions associated with only the non-core asset service areas. Expenses that were excluded from the calculation were any expenses that did not associate with a fixed asset, or an asset in the asset inventory. The budgets were reviewed line by line to determine inclusions and exclusions from the calculations. The budget categorization required some interpretation, as noted:

- Expenses for all service categories were determined except for Active Transportation (Multi-use Paths) Paths which were not identifiable for specific assets in the historical budgets; and

- The service categories for Fleet and Equipment should be better labelled to avoid overlap with core asset budgets.

In general, the municipal non-core asset services do not have reliable industry benchmarks for projecting reinvestment expectations. In lieu of available industry data, the proposed method for projecting O&M budget expectations is based on a review of past expenditure and the past O&M activity for each service area. The forecast metrics are developed from a review of the budget for each individual service category determined by reviewing the actual budget expenditure for the years 2018 through 2022. This data was compared to the capital replacement value for the asset inventory in each of the non-core service areas[2]. The resulting metrics represent the historic O&M reinvestment rate for each of the non-core asset portfolios. These metrics are the best available forecast feature for projected O&M budgets.

The O&M reinvestment rate, as a percentage of asset portfolio capital replacement value, is summarized in Figure 4-21.

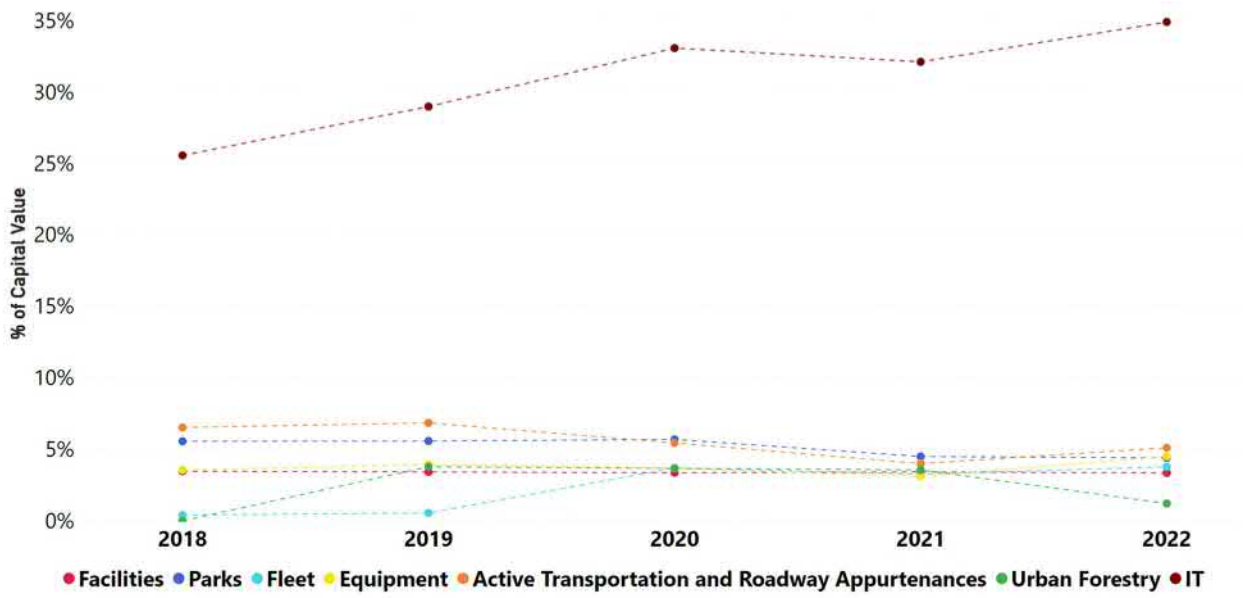


Figure 4-21: Historic Operations and Maintenance Reinvestment Rate by Service Area

[2] The asset portfolio capital replacement value for each service category was adapted from the inventory value and deflated by the same annual rate identified in the state of the infrastructure section to estimate the previous capital values back to year 2018.

The proposed O&M budget forecast metrics are adapted from the observed peak reinvestment rate for each of the non-core service areas. This conservative approach is adopted based on workorder projection constraints noted above, as well as uncertainty in adapting the available budget data into the non-core service area categories. The conservative approach proposed follows key considerations related to the asset management levels of service priority for change in action, specifically:

- Generalized reduction in rate of reinvestment observed (refer to Figure 4-21) may impair future LOS; and,
- Generalized reduction in apparent completion rate of interventions (refer to Table 4-27).

The proposed forecast metrics for each of the non-core service areas are summarized in Table 4-28.

Table 4-28: Operations and Maintenance Reinvestment Rate Projection Metrics

Non-Core Service Area	Projection Metric [% of Capital Value]	Observed Year
Facilities	3.4	2019 - 2021
Parks	5.7	2020
Fleet	3.8	2022
Equipment	4.5	2022
Active Transportation and Roadway Appurtenances	6.8	2019
Urban Forestry	3.8	2019
Information Technology	34.9	2022

4.5.5 10-Year O&M Funding Forecast

The average annual O&M budget estimate for the Town's non-core service areas is $22.8 M over the next 10 years, assuming 3% average annual inflation. This is equivalent to approximately $227.8 M for the 10-year period, as summarized in Figure 4-22. The estimated budgets are forecast on the basis of the present service category inventories and the historic reinvestment metric estimates. These budgets should be continuously revised with new insights obtained from the feedback from O&M process management improvements recommended in this section.

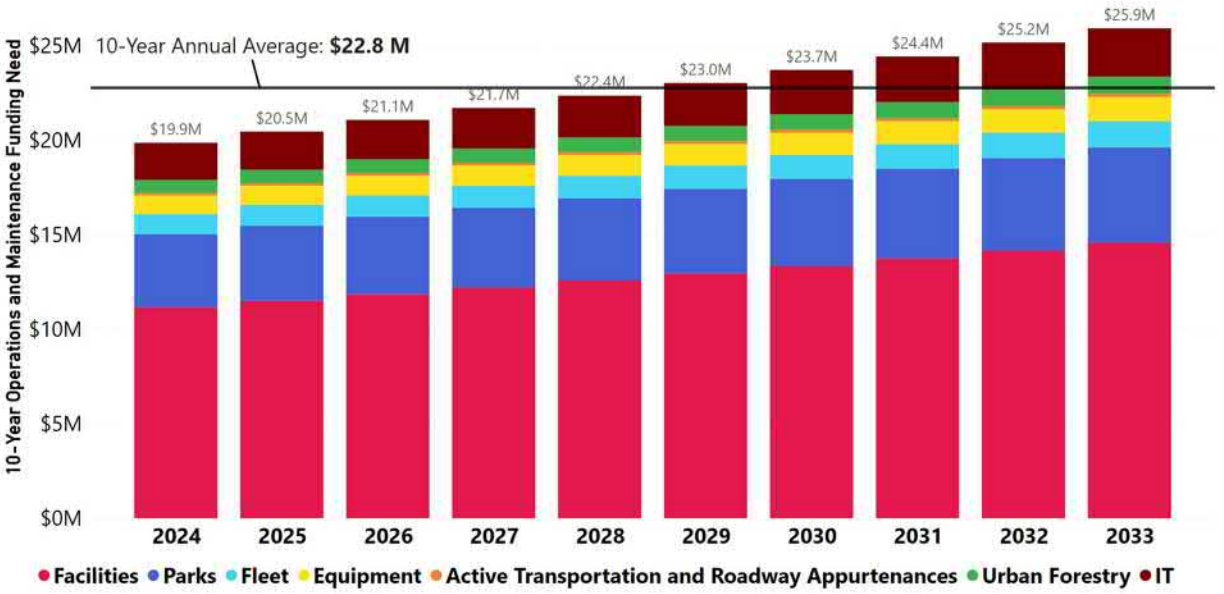


Figure 4-22: 10-Year Operations and Maintenance Budget Projection

The O&M budget estimation for each non-core service category is summarized in Table 4-29. The average budget estimate should be interpreted as a straight-line average based on the asset portfolio inventories presently identified. Average budgets should be interpreted as including variability from year-to-year. Future improvement of the budget categorization aligned with non-core asset service categories, and improved development of SOPs as maintenance management "units" of activity will provide refined budget estimation year-over-year.

Table 4-29: 10-Year O&M Budget Summary by Non-Core Service Category

Service Category	Annual Average Need	10-Year Total
Facilities	$12,817,030	$128,170,300
Parks	$4,424,790	$44,247,900
Fleet	$1,219,880	$12,198,800
Equipment	$1,122,460	$11,224,600
Active Transportation and Roadway Appurtenance	$160,140	$1,601,400
Urban Forestry	$781,790	$7,817,900
Information Technology	$2,250,020	$22,500,200
Total	$22,776,110	$227,761,100

4.6 Condition Assessment Strategy

4.6.1 Condition Assessment Plan

Conducting regular asset condition assessment, is essential for asset owners to be able to maintain safe, efficient, and sustainable assets. Regularly assessing asset condition helps to keep asset information up to date, identify asset deterioration, measure performance, and determine the need for maintenance, rehabilitation, or replacement. Without regular assessments, asset management programs must rely on age-based projections of asset conditions which can be projected from asset installation dates or historical condition assessment information.

Specifically, the benefits of regular asset condition assessments include:

- The proactive identification of existing and potential problems, allowing for timely interventions to be scheduled and continuous operation of the service delivered by the assets. This may lead to increasing public satisfaction by minimizing sudden disruptions and ensuring quality service delivery;
- The possibility to extend the useful life of the asset by ensuring existing deterioration is well understood and addressed;
- Evidence-based financial planning that is informed by up to date and accurate information regarding the extent and cost of necessary maintenance or rehabilitation interventions;
- The enhancement of safety by reducing asset-related risks;
- The ability to inform on compliance with regulatory standards and avoid legal implications; and
- The reduction of unexpected and often high costs associated with emergency repairs or replacements of assets.

A condition assessment plan allows asset owners to define what conducting regular asset condition assessments look like and sets forth expectations for different asset categories or asset types.

The components of the condition assessment plan include:

- **Defining Objectives:** Outlining the goals and objectives of the condition assessment plan. This may include improving safety, extending asset useful life, optimizing performance, or achieving a defined level of service;
- **Identifying the Assets:** Identify all physical infrastructure assets that need to be assessed or software assets that need to be reviewed, which may be inclusive of all inventoried assets within a category or of a certain type or may be a strategic sample size of the total inventory at defined intervals;
- **Developing Condition Assessment Procedures:** Creating guidelines or procedures for carrying out asset condition assessments. This includes what to look for, what condition rating system to employ, what methodology and/or technology can be utilized, and how often condition assessments should occur; and
- Determining Probable Costs to Implement: Determining the anticipated costs to carry out condition assessment procedures to inform financial planning.

The Town employs a five-point condition rating system as detailed in Table 4-30.

Table 4-30: Condition Rating System

Condition Rating	Condition Grade	Remaining Useful Life	Description
1	Very Good	80% – 100%	Asset (or asset element) is physically sound, performing as intended and resembles "like-new" condition.
2	Good	60% – 80%	Asset (or asset element) is physically sound and performing as intended. Needs to be re-inspected in the medium term.
3	Fair	40% – 60%	Showing deterioration, with some elements physically deficient. Early stages of decay or dereliction are becoming evident.
4	Poor	20% – 40%	Major portion of asset (or asset element) is physically deficient. It is not functioning properly due to significant deterioration and is a candidate for replacement in the short term.
5	Very Poor	0% – 20%	Asset (or asset element) is physically unsound. There is a high probability it will fail, or it already has. Immediate replacement is required.

This rating system should be applied in a consistent manner for all assets. Some asset types may be subject to external condition assessment rating systems that align with industry best practices. For instances where an external condition assessment rating system is employed, the external rating system should be translated to the Town's five-point condition rating system in an appropriate and representative manner.

Please refer to Appendix D to review the Condition Assessment Plans developed for each asset category.

4.6.2 Condition Assessment Budget Forecast

For every service category, the estimated cost to implement the condition assessment procedures defined for each asset type was calculated. The calculation of estimated cost was based on lump sum costs or unit costs depending on the asset type, the quantity of assets being assessed, and the frequency of assessments.

The average annual cost of implementing the condition assessment plans for the Town's non-core assets over the next 10 years is $817,163, considering inflated dollar values with an inflation rate of 3%. This equates to a total of approximately $8.2 M over the next 10 years. Figure 4-23 depicts the annual cost of condition assessments for each asset category.

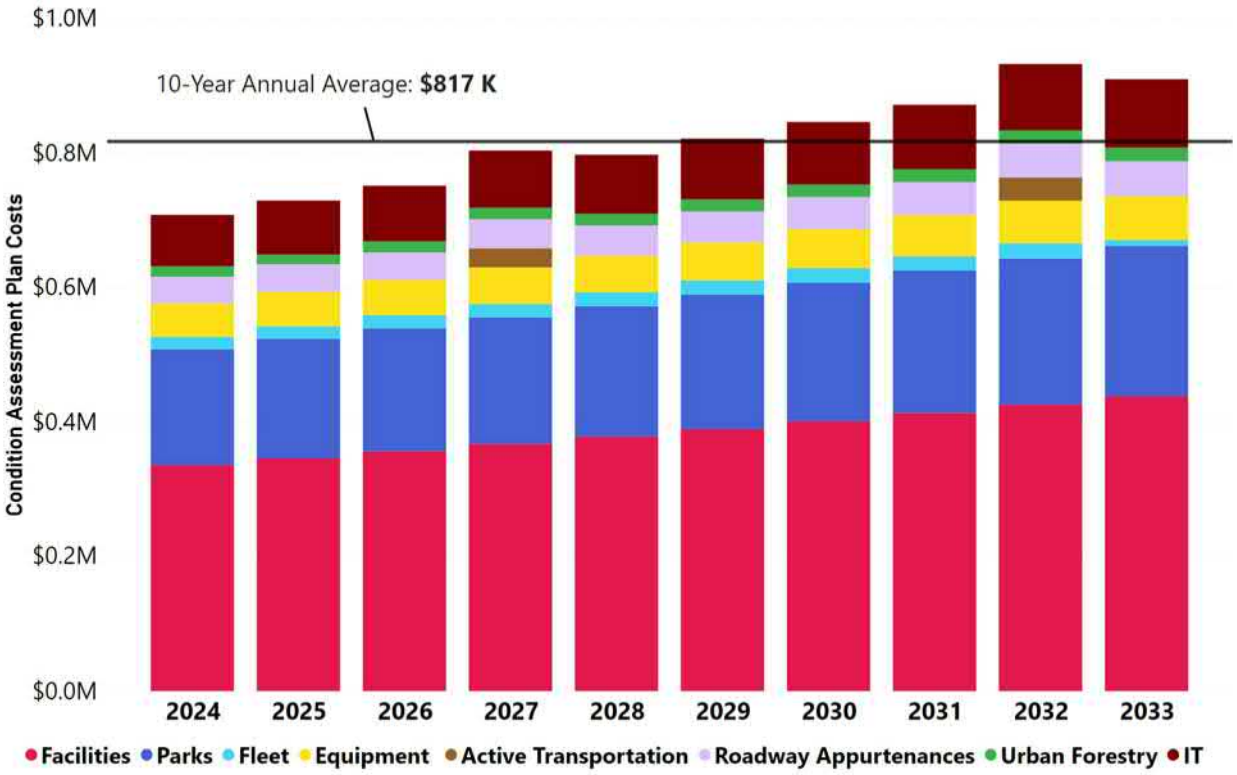


Figure 4-23: 10-Year Estimated Condition Assessment Cost for Non-Core Assets

A detailed breakdown of condition assessment cost for each asset category is provided in Table 4-31.

Table 4-31: Estimated Condition Assessment Costs

Asset Category	Annual Average Cost	10-Year Total Cost
Facilities	$385,187	$3,851,864
Parks	$197,179	$1,971,788
Fleet	$19,453	$194,524
Equipment	$56,999	$569,985
Active Transportation	$6,371	$63,707
Roadway Appurtenances	$45,397	$453,970
Urban Forestry	$17,735	$177,347
Information Technology	$88,846	$888,451
Total	$817,163	$8,171,631

5.0 Financial Analysis and Strategy

This chapter identifies the funding required to sustainably finance the lifecycle management strategies, including those presented in the previous sections and the capital replacement projections developed in the following section. This financial strategy should be examined and re-evaluated during the annual budgeting processes to ensure the sustainability of the Town's financial position as it relates to its assets.

O. Reg. 588/17 requires that municipalities have approved proposed LOS and the lifecycle management and financial strategy for 10-year period to achieve the proposed LOS by July 2025. Various financing options, including reserve funds, debt, and grants can be considered during the process of developing the financial strategy.

5.1 Asset Lifecycle Modeling

A core objective in asset management is to proactively extend the useful life of assets, by ensuring existing deterioration is well understood and properly addressed through timely maintenance, rehabilitation, and replacement activities. The provision of reliable infrastructure is crucial for ensuring that the Town can continue to deliver reliable services to its current residents. As the Town's existing assets age, significant reinvestment will be required for the replacement of deteriorated assets to ensure service delivery.

Figure 5-1 depicts the full lifecycle of an infrastructure asset and demonstrates the cumulative cost of ownership which increases throughout the asset's service life and amounts to far more than the initial investment. An infrastructure asset's lifecycle begins in the planning and design phase, where the need for the new asset is identified and a strategic plan is created. This is followed by the first asset-related expenditure which is the initial investment to construct or create the asset. Once the asset has been created, the asset enters the operational phase, requiring regular maintenance to keep it functional. Over time, as deterioration increases, capital reinvestment is required to extend the useful life of the asset and prolong service delivery through rehabilitation. After rehabilitation, the asset re-enters the operational phase, accumulating additional costs associated with operation and maintenance before reaching the end of its useful life and requiring replacement.

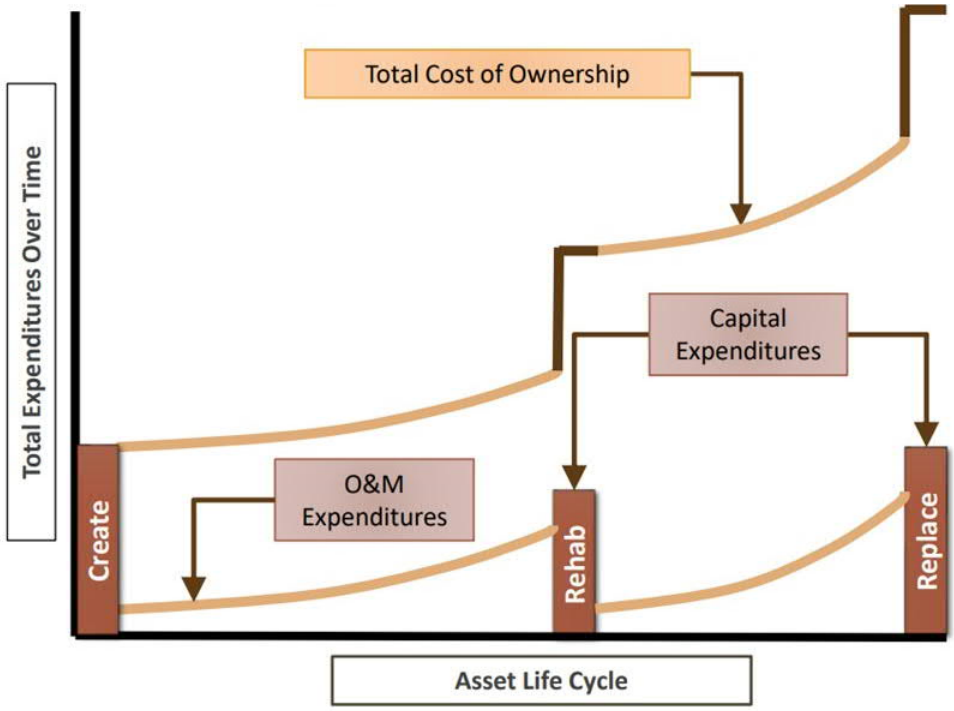


Figure 5-1: Cumulative Cost of Asset Ownership

Lifecycle modeling allows for the Town to understand the future reinvestment needs of their existing assets by generating a theoretical asset replacement forecast for the existing asset inventory. The age, EUL, replacement cost, condition, and risk score of each asset can be leveraged within the lifecycle model to proactively plan for reinvestment over a period of interest. Asset replacement forecasts within this chapter estimate the required reinvestment for assets within each service category over 10-year and 25-year outlooks. An average annual inflation rate of 3% has been assumed and applied to all future capital reinvestments.

Figure 5-2 presents the capital planning process which includes three steps known as identify, prioritize, and schedule. Each step is further described as follows:

1. Step 1: Identify – As the initial step in the capital planning process, projects related to existing assets are identified through a variety of methods including evidence-based methods such as lifecycle modeling, risk assessments, or condition assessments, and qualitative methods such as the need to meet levels of service requirements or Town standards. Projects identified in this step enter a project pool and are funneled into project categories including lifecycle replacement projects, levels of service projects, and backlog projects. Growth related projects including expansion of an existing assets, and upgrades to existing assets, are typically considered within the levels of service project category.

2. Step 2: Prioritize – In the prioritization step, projects related to existing assets are prioritized based on each asset's calculated risk score, which is out of a maximum score of 25. Asset risk score is calculated for each asset based on the risk models developed as part of this AMP for each service category. Asset risk models use a variety of indicators to determine the probability of failure (PoF) and consequence of failure (CoF) of each asset. As risk scores are based out of 25, a 5 by 5 matrix aids in visually representing low, moderate, and high-risk zones. Projects related to assets that are high-risk should be prioritized. Chapter 4.1 of this AMP provides further insight on asset risk.
3. Step 3: Schedule – As the final step in the capital planning process, the scheduling step includes identifying the length of the capital planning period and the available annual capital budget for the Town. The highest priority projects as identified in Step 2 are scheduled first and projects of a lower priority that are not able to be scheduled in their recommended year are adjusted to the next year in the capital plan.

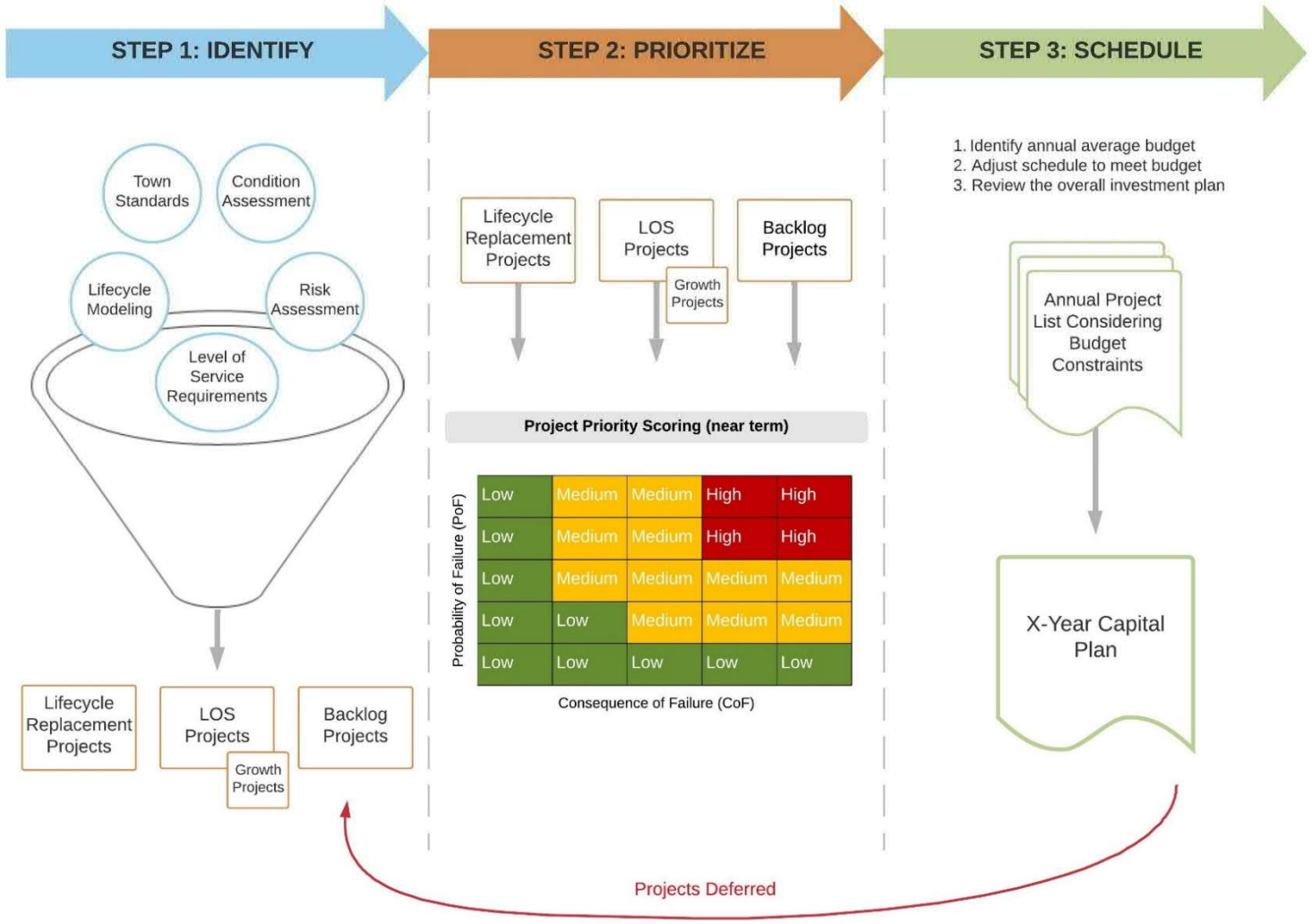


Figure 5-2: Capital Planning Process

5.1.1 Facilities

5.1.1.1 Asset Reinvestment Measures and Targets

Table 5-1 summarizes the reinvestment rate assumptions for Facilities assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets or asset elements will require replacement each year based on their current condition, EUL, and risk scores.

It is important to note that the Town's strategy for the existing Georgina Civic Centre is to stop reinvesting in the building in anticipation that the building will be demolished upon construction of the Georgina Replacement Civic Centre (GRCC) in 2026. Should the occupancy of the GRCC be delayed, there could be emergency reinvestment required in the existing Georgina Civic Centre until the building is taken out of service. Reinvestment needs for the existing Georgina Civic Centre are summarized separately from the reinvestment needs of the remainder of the Facilities inventory in this section.

Table 5-1: Facilities – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Corporate Offices	Percentage of Corporate Office asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.3%
	Percentage of Corporate Office asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Community Centres and Halls	Percentage of Community Centre and Hall asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	1.5%
	Percentage of Community Centre and Hall asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Fire Stations	Percentage of Fire Station asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	1.5%
	Percentage of Fire Station asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Pioneer Village	Percentage of Pioneer Village asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Pioneer Village asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	2.0%
Libraries	Percentage of Library asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Library asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	1.8%
Park Washrooms	Percentage of Park Washroom asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Park Washroom asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	2.4%
Picnic Shelters	Percentage of Picnic Shelter asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Picnic Shelter asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	3.4%
Recreational	Percentage of Recreational asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Recreational asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	0.8%
Booths	Percentage of Booth asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Booth asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	1.5%
Operations Yards	Percentage of Operation Yard asset elements with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Operation Yard asset elements with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	1.3%

5.1.1.2 10-Year Reinvestment Needs

There is a total of approximately $39.6 million to be reinvested into the Facilities assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $4 million, as presented in Figure 5-3.

It is important to note that there is significant reinvestment expected for 2024, a direct result of many building elements being assessed as Poor or Very Poor condition during the most recent BCAs. In the second half of the 10-year window, the Town should prepare for more significant reinvestment as building elements continue to age and deteriorate. The highest reinvestment needs from 2029 to 2033 are expected for the asset classes of Community Centres and Halls (approx. $9.9 M), Recreational (approx. $8.2 M), Libraries (approx. $3.6 M), and Fire Stations (approx. $2.7 M).

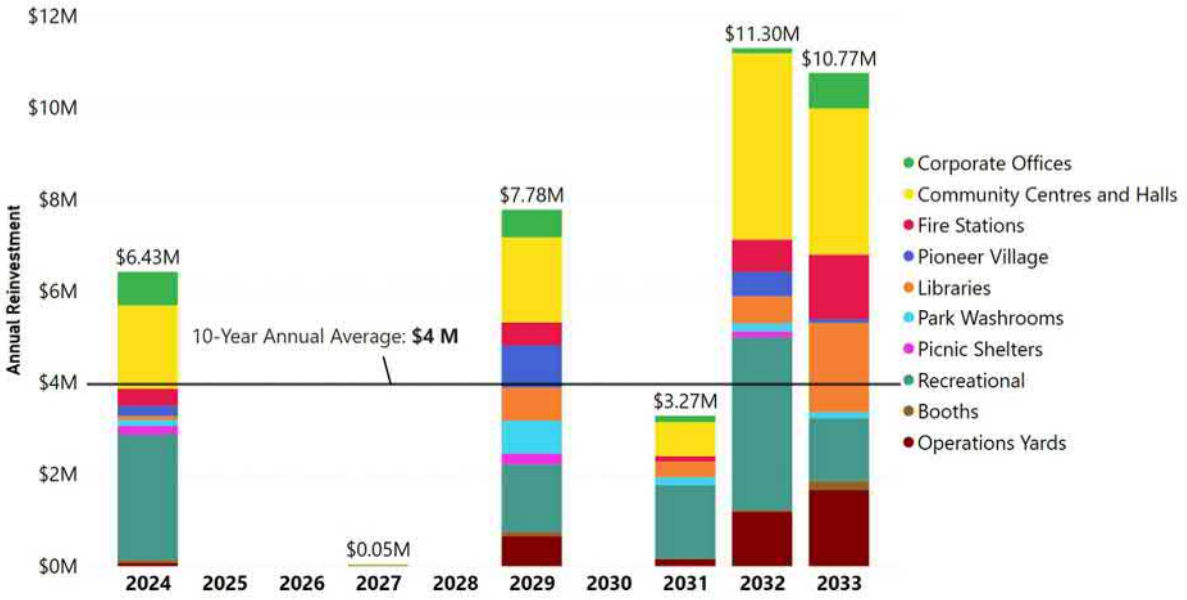


Figure 5-3: Facilities - 10-Year Reinvestment Needs

The Town's current strategy is to stop reinvestment in the existing Georgina Civic Centre in anticipation for its demolition upon completion of the GRCC. Should the occupancy of the GRCC be delayed, there could be reinvestment required for the existing Georgina Civic Centre until the building is vacated and demolished. Table 5-2 summarizes the reinvestment needs of the existing Georgina Civic Centre based on the lifecycle model, which were not included in 10-year reinvestment needs shown above.

It is important to note that there is significant reinvestment expected for 2024, a direct result of building elements being assessed as Poor or Very Poor condition during the most recent BCA. Additionally, the BCA identified the asset has surpassed its expected useful life. Significant reinvestment needs identified from 2029 to 2033 are expected for the existing Georgina Civic Centre should demolition be delayed, and the asset remains in service.

Table 5-2: 10-Year Reinvestment Needs for the Existing Georgina Civic Centre

2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
$579 K	$0	$0	$0	$0	$446 K	$0	$1.89 M	$1.08 M	$858 K

5.1.1.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $274.1 million is estimated to be reinvested into the Facilities assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $11 million, as presented in Figure 5-4.

In the second half of the 25-year window, forecasted expenses are estimated to increase significantly as many building elements will have exceeded their EUL. It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine replacement needs and that regular condition assessments of Facilities by the Town will assist at refining forecasted expenditures in the decades to come.

The highest reinvestment needs for the 25-year window are expected for the asset classes of Recreational (approx. $106 M), Community Centres and Halls (approx. $77.1 M), Operations Yards (approx. $23 M), and Fire Stations (approx. $21.1 M).

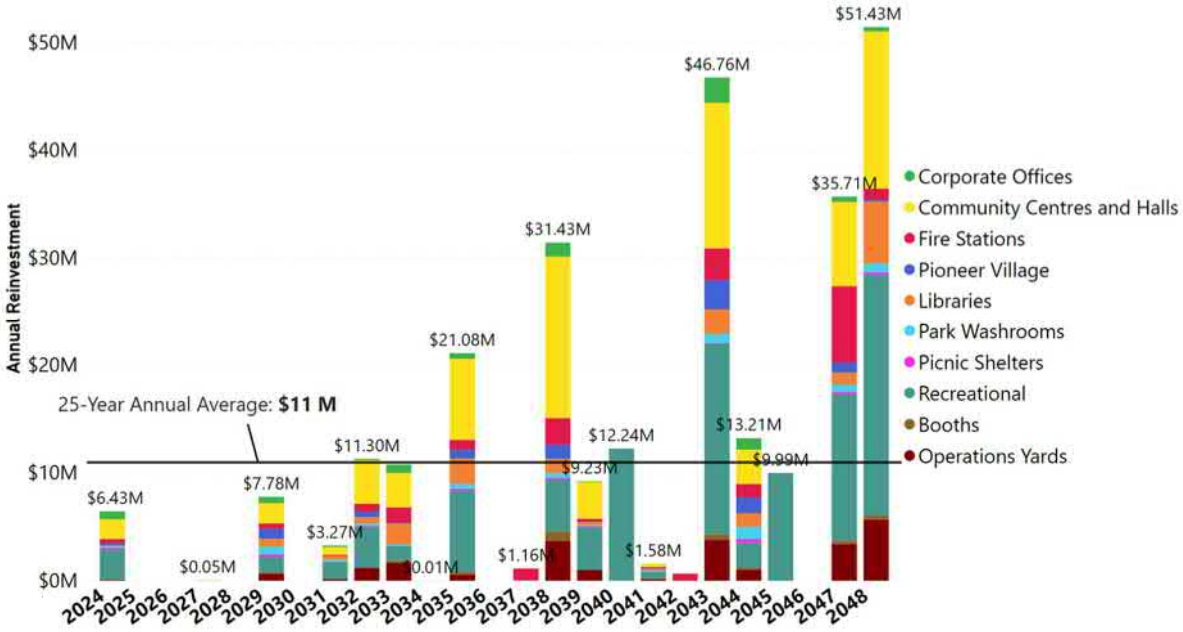


Figure 5-4: Facilities - 25-Year Reinvestment Needs

The Town's current strategy is to stop reinvestment in the existing Georgina Civic Centre in anticipation for its demolition upon completion of the GRCC. Should the occupancy of the GRCC be delayed, there could be reinvestment required for the existing Georgina Civic Centre until the building is vacated and demolished. Table 5-3 summarizes the reinvestment needs of the existing Georgina Civic Centre based on the lifecycle model, which were not included in 25-year reinvestment needs shown above.

The BCA identified the asset has surpassed its expected useful life. This is further supported by the lifecycle modeling results as significant reinvestment needs are identified starting in 2029 indicating most of the asset elements comprising the asset will require replacement.

Table 5-3: 25-Year Reinvestment Needs for the Existing Georgina Civic Centre

2024 - 2028	2029 - 2033	2034 - 2038	2039 - 2043	2044 - 2048
$579 K	$4.27 M	$8.97 M	$5.52 M	$3.11 M

5.1.2 Parks

5.1.2.1 Asset Reinvestment Measures and Targets

Table 5-4 summarizes the reinvestment rate assumptions for Parks assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores.

Table 5-4: Parks – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Neighbourhood Parks	Percentage of Neighbourhood Parks with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.0%
	Percentage of Neighbourhood Parks with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Community Parks	Percentage of Community Parks with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.0%
	Percentage of Community Parks with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Baseball Diamonds	Percentage of Baseball Diamonds with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.5%

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
	Percentage of Baseball Diamonds with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Basketball Courts	Percentage of Basketball Courts with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Basketball Courts with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Beach Volleyball Courts	Percentage of Beach Volleyball Courts with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Beach Volleyball Courts with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Soccer Pitches	Percentage of Soccer Pitches with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	4.6%
	Percentage of Soccer Pitches with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Splash Pads	Percentage of Splash Pads with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	5.0%
	Percentage of Splash Pads with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Tennis Courts	Percentage of Tennis Courts with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Tennis Courts with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Pickleball Courts	Percentage of Pickle Ball Courts with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Pickle Ball Courts with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Bleachers	Percentage of Bleachers with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Bleachers with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Picnic Shelters	Percentage of Picnic Shelters with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Picnic Shelters with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Foot Bridges	Percentage of Foot Bridges with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	2.9%
	Percentage of Foot Bridges with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Drinking Water	Percentage of Drinking Water assets with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Drinking Water assets with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Harbour Dock	Percentage of Harbour Docks with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	5.0%
	Percentage of Harbour Docks with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Parking Areas	Percentage of Parking Areas with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.2%
	Percentage of Parking Areas with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

5.1.2.2 10-Year Reinvestment Needs

There is a total of approximately $30.7 million to be reinvested into the Parks assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $3.1 million, as presented in Figure 5-5.

It is important to note that there is significant reinvestment expected for 2024, a direct result of all Parks asset conditions being age-based with many assets exceeding their EUL. The Town should prioritize condition assessments of Baseball Diamonds and Parking Areas to refine the required level of investment required for these asset classes, which represent the most significant expenditures with approximately $12.4 M and $4.8 M forecasted for 2024, respectively.

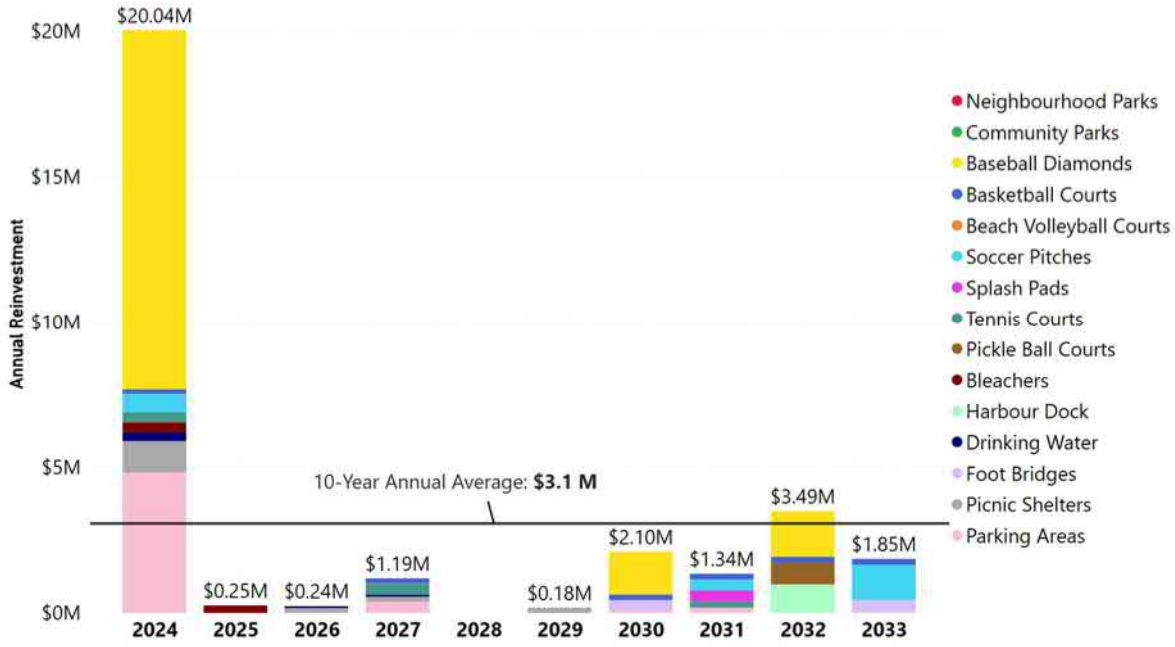


Figure 5-5: Parks - 10-Year Reinvestment Needs

5.1.2.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $58.6 million is estimated to be reinvested into the Parks assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $2.3 million, as presented in Figure 5-6.

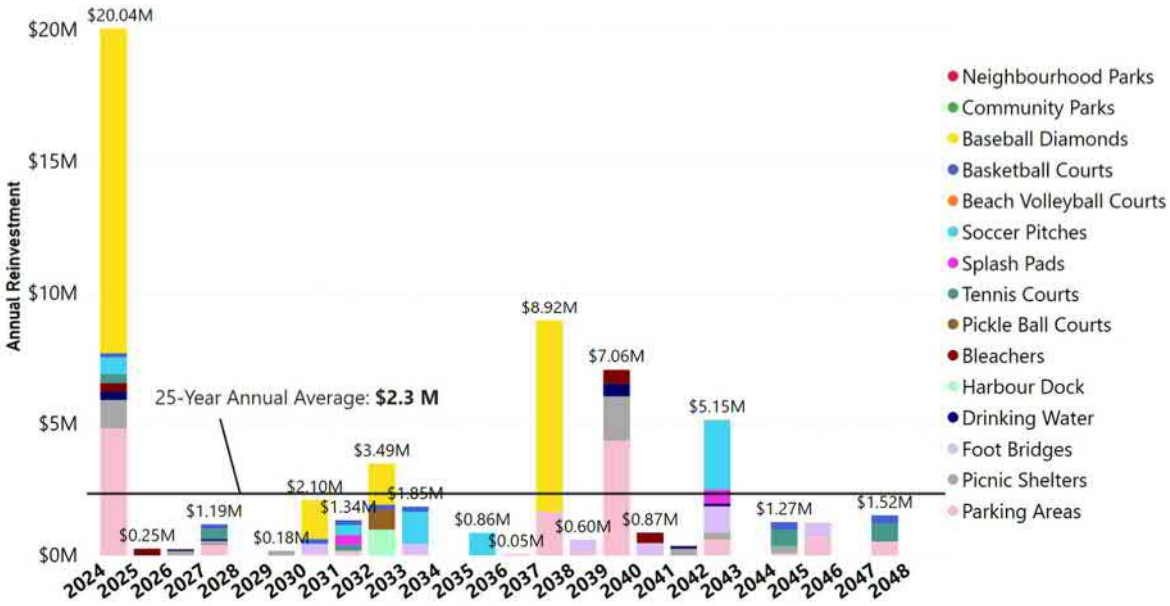


Figure 5-6: Parks - 25-Year Reinvestment Needs

5.1.3 Fleet

5.1.3.1 Asset Reinvestment Measures and Targets

Table 5-5 summarizes the reinvestment rate assumptions for Fleet assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores.

Table 5-5: Fleet – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Light Vehicles	Percentage of Light Vehicles with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	1.6%
	Percentage of Light Vehicles with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Medium Vehicles	Percentage of Medium Vehicles with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	6.1%
	Percentage of Medium Vehicles with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Heavy Vehicles	Percentage of Heavy Vehicles with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	2.7%
	Percentage of Heavy Vehicles with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Trailers	Percentage of Trailers with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.5%
	Percentage of Trailers with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Boats	Percentage of Boats with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	4.7%
	Percentage of Boats with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

5.1.3.2 10-Year Reinvestment Needs

There is a total of approximately $8.6 million to be reinvested into the Fleet assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $862.9 thousand, as presented in Figure 5-7.

It is important to note that there is significant reinvestment expected for 2024 related to the replacement of two heavy vehicles, a 2011 Crimson Spartan Metro Star Custom Fire Engine and a 2003 Freightliner FL80.

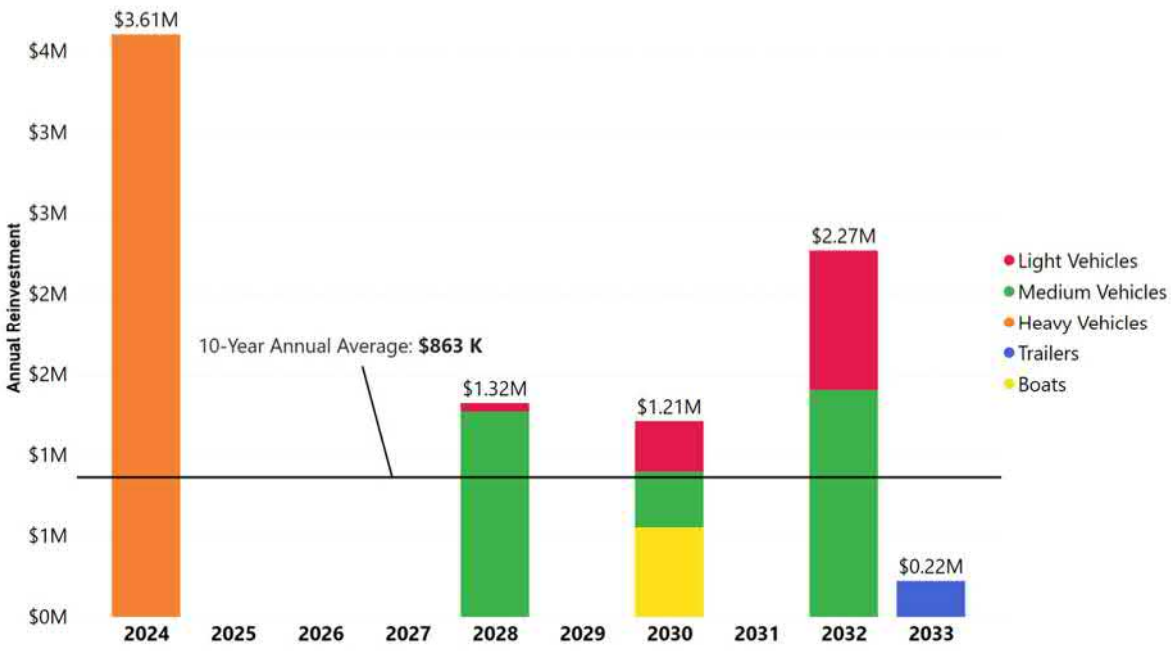


Figure 5-7: Fleet - 10-Year Reinvestment Needs

5.1.3.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $68.1 million is estimated to be reinvested into Fleet assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $2.7 million, as presented in Figure 5-8.

After 2033, forecasted expenses are estimated to increase significantly as many Fleet assets will begin to approach the end of their EUL. This is particularly the case in 2044 when a significant amount of Fleet assets will require replacement. It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine renewal or replacement needs and that regular condition assessments of Fleet assets by the Town will assist at refining forecasted expenditures in the decades to come.

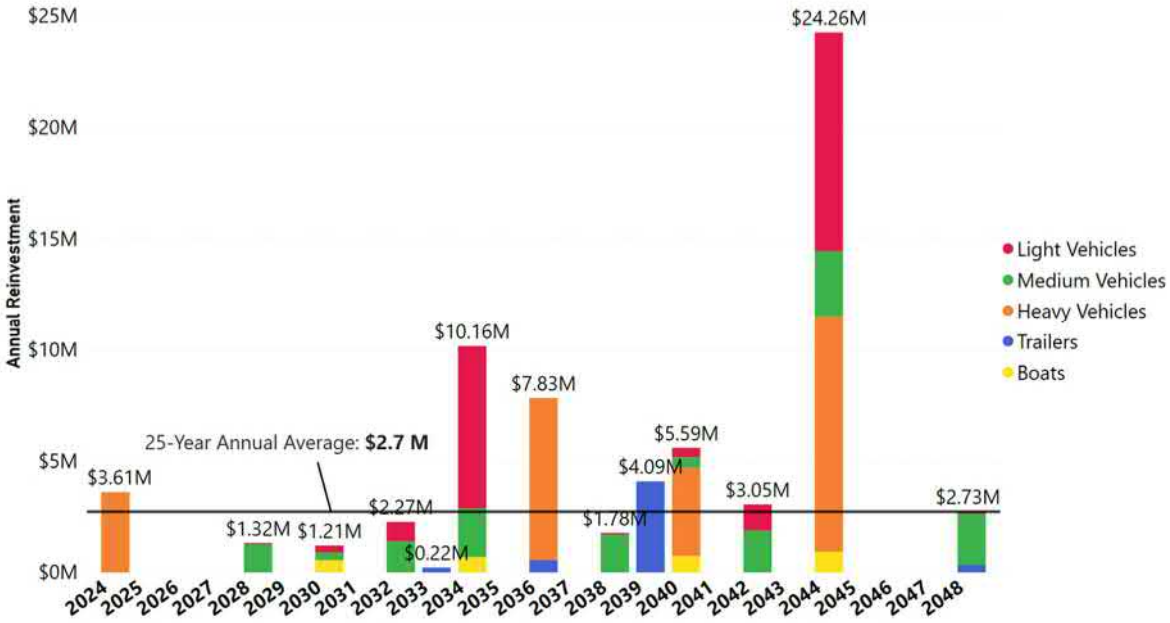


Figure 5-8: Fleet - 25-Year Reinvestment Needs

5.1.4 Equipment

5.1.4.1 Asset Reinvestment Measures and Targets

Table 5-6 summarizes the reinvestment rate assumptions for Equipment assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores.

Table 5-6: Equipment – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Fleet Equipment	Percentage of Fleet Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	1.2%
	Percentage of Fleet Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Roads Equipment	Percentage of Roads Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	6.8%
	Percentage of Roads Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Water Equipment	Percentage of Water Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.7%
	Percentage of Water Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Facilities Equipment	Percentage of Facilities Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.6%
	Percentage of Facilities Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Parks Equipment	Percentage of Parks Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.6%
	Percentage of Parks Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Recreation and Culture Equipment	Percentage of Recreation and Culture Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	4.4%
	Percentage of Recreation and Culture Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Administrative Services Equipment	Percentage of Administrative Services Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	8.4%
	Percentage of Administrative Services Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Public Works Equipment	Percentage of Public Works Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	8.7%
	Percentage of Public Works Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Fire and Emergency Services Equipment	Percentage of Fire and Emergency Services Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	6.0%
	Percentage of Fire and Emergency Services Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Library Services Equipment	Percentage of Library Services Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	6.4%
	Percentage of Library Services Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

5.1.4.2 10-Year Reinvestment Needs

There is a total of approximately $16.6 million to be reinvested into the Equipment assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $1.7 million, as presented in Figure 5-9.

It is important to note that there is significant reinvestment expected for 2024, a direct result of all Equipment asset conditions being age-based with many assets exceeding their EUL. The Town should prioritize condition assessments of Parks Equipment, Public Works Equipment, and Roads Equipment to refine the required level of investment required for these asset classes, which represent the most significant expenditures with approximately $3.5 M, $2.3 M, and $2.1 M forecasted for 2024, respectively.

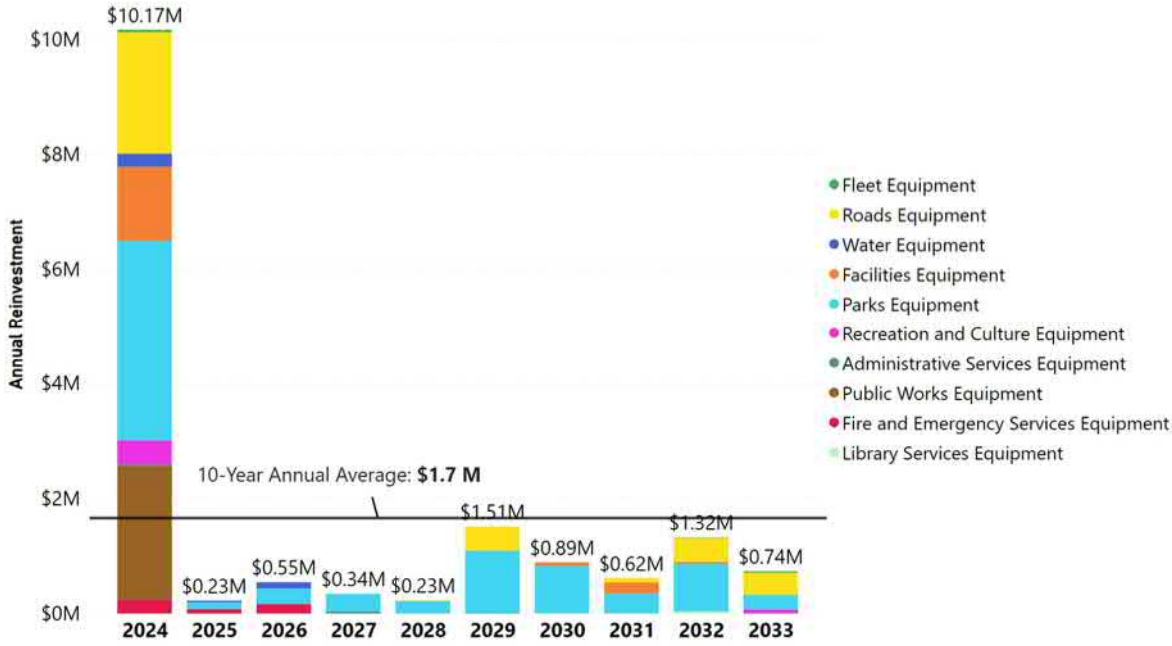


Figure 5-9: Equipment - 10-Year Reinvestment Needs

5.1.4.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $53.3 million is estimated to be reinvested into Equipment assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $2.1 million, as presented in Figure 5-10.

After 2033, forecasted expenses are estimated to increase significantly as many Equipment assets will begin to approach the end of their EUL. This is particularly the case in 2044 when a significant amount of Equipment assets will require replacement. It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine renewal or replacement needs and that regular condition assessments of Equipment assets by the Town will assist at refining forecasted expenditures in the decades to come.

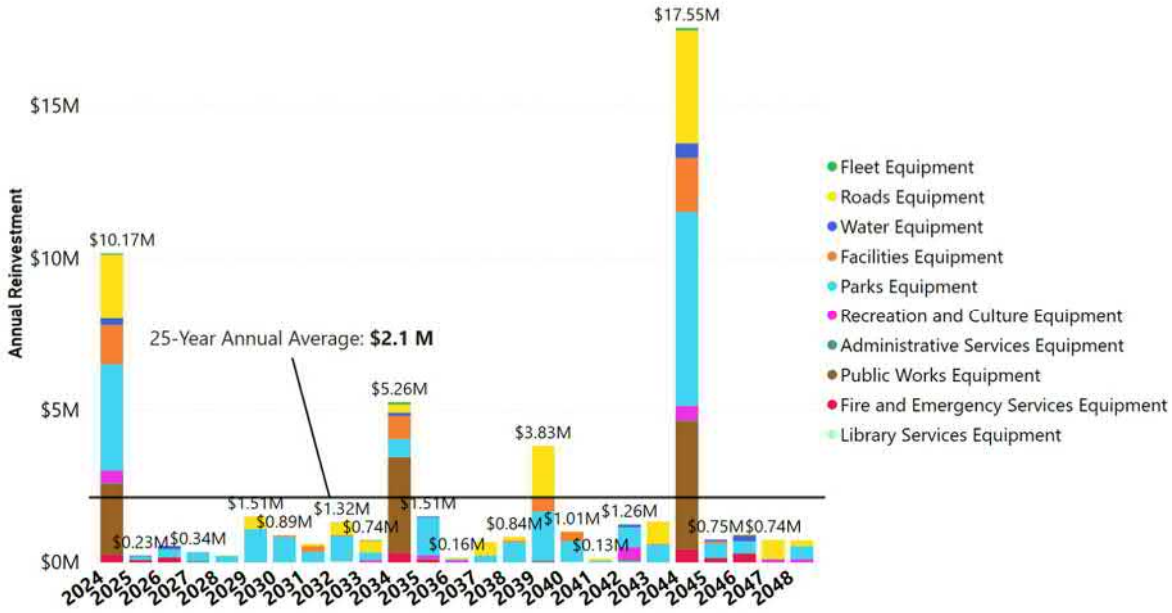


Figure 5-10: Equipment - 25-Year Reinvestment Needs

5.1.5 Active Transportation

5.1.5.1 Asset Reinvestment Measures and Targets

Table 5-7 summarizes the reinvestment rate assumptions for Active Transportation assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. It is noted that the only asset class included for the Active Transportation service category is Multi-Use Paths. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores.

Table 5-7: Active Transportation – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Multi-Use Paths	Percentage of Multi-Use Paths with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	4.2%
	Percentage of Multi-Use Paths with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

5.1.5.2 10-Year Reinvestment Needs

There is a total of approximately $421.6 thousand to be reinvested into the Multi-Use Path assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $42 thousand, as presented in Figure 5-11 by material.

It is important to note that there is significant reinvestment expected for 2024, a direct result of approximately 2.2 Km of Multi-Use Paths being rated as Very Poor condition in 2023. This is inclusive of 1.5 Km of crushed limestone paths, 122 m of asphalt/concrete paths, 316 m of gravel paths, and 229 m of paths constructed of various materials.

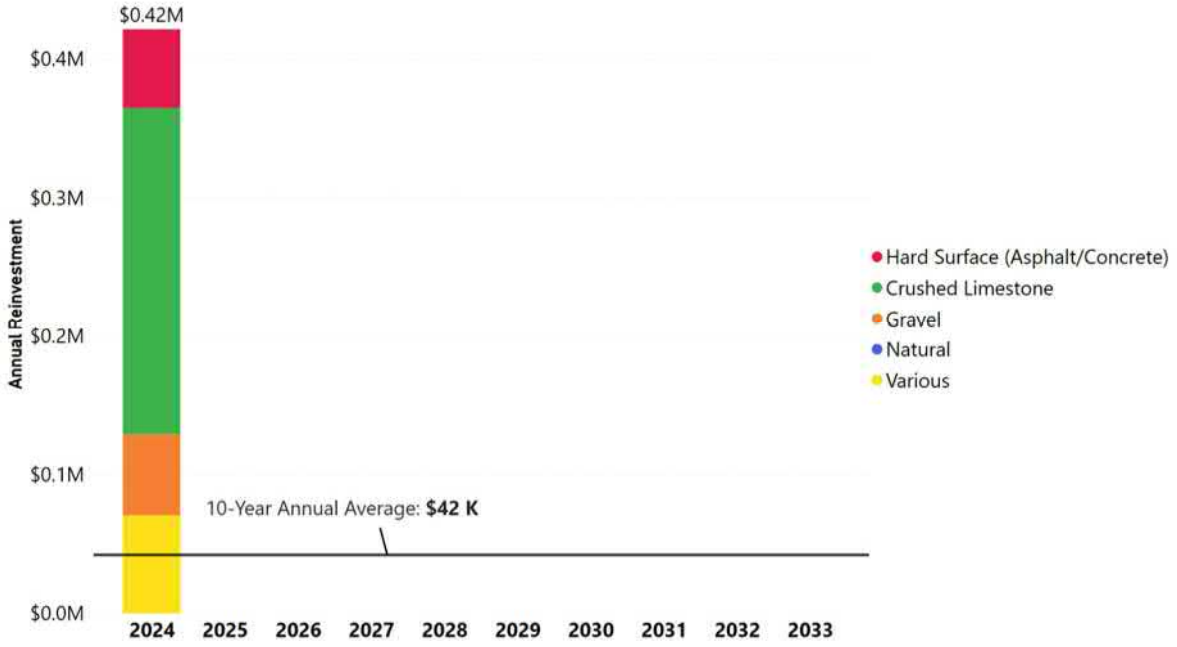


Figure 5-11: Active Transportation - 10-Year Reinvestment Needs

5.1.5.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $3.6 million is estimated to be reinvested into Multi-Use Path assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $142.8 thousand, as presented in Figure 5-12.

In 2039, 2044, and 2048, large reinvestments are forecasted as several multi-use paths will have exceeded their EUL. It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine renewal or replacement needs and that regular condition assessments of multi-use paths by the Town will assist at refining forecasted expenditures in the decades to come.

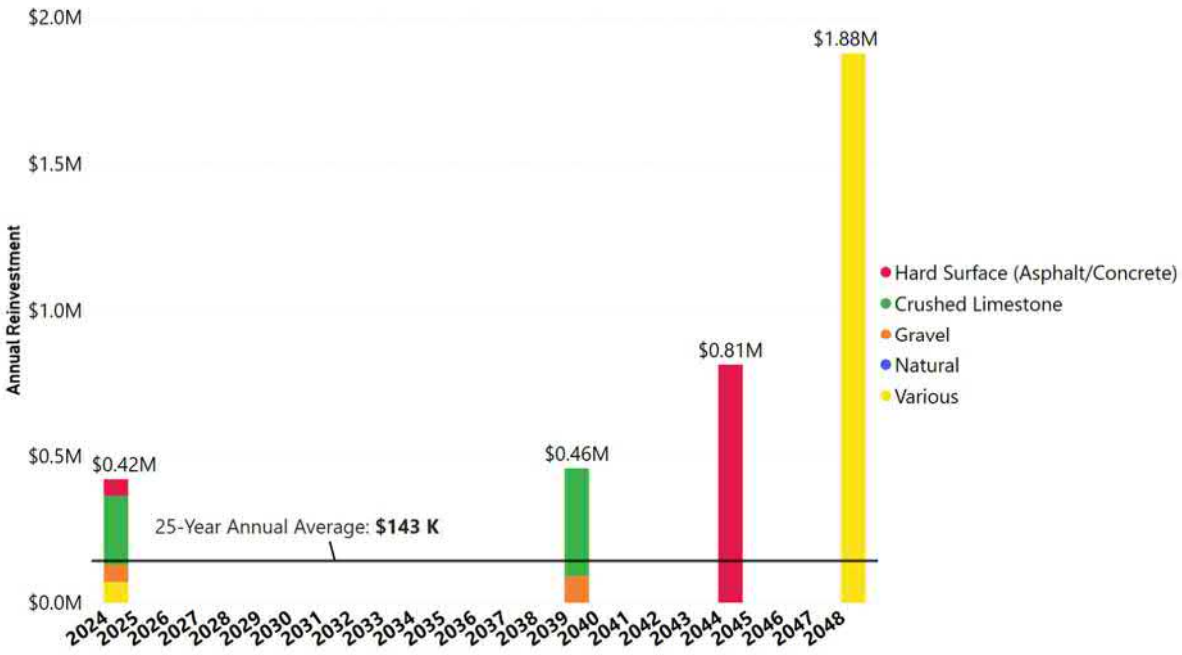


Figure 5-12: Active Transportation - 25-Year Reinvestment Needs

5.1.6 Roadway Appurtenances

5.1.6.1 Asset Reinvestment Measures and Targets

Table 5-8 summarizes the reinvestment rate assumptions for Roadway Appurtenance assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores.

Table 5-8: Roadway Appurtenances – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Priority Signs	Percentage of Priority Signs with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	9.9%
	Percentage of Priority Signs with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Regulatory Signs	Percentage of Regulatory Signs with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	9.6%
	Percentage of Regulatory Signs with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Warning Signs	Percentage of Warning Signs with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	9.6%
	Percentage of Warning Signs with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Informational Signs	Percentage of Informational Signs with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Informational Signs with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

5.1.6.2 10-Year Reinvestment Needs

There is a total of approximately $2.4 million to be reinvested into the Roadway Appurtenances owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $240 thousand, as presented in Figure 5-13.

In 2030 and 2031, a significant amount of the Town's Roadway Appurtenances will require replacement as they will exceed their EUL including priority signs, regulatory signs, and warning signs.

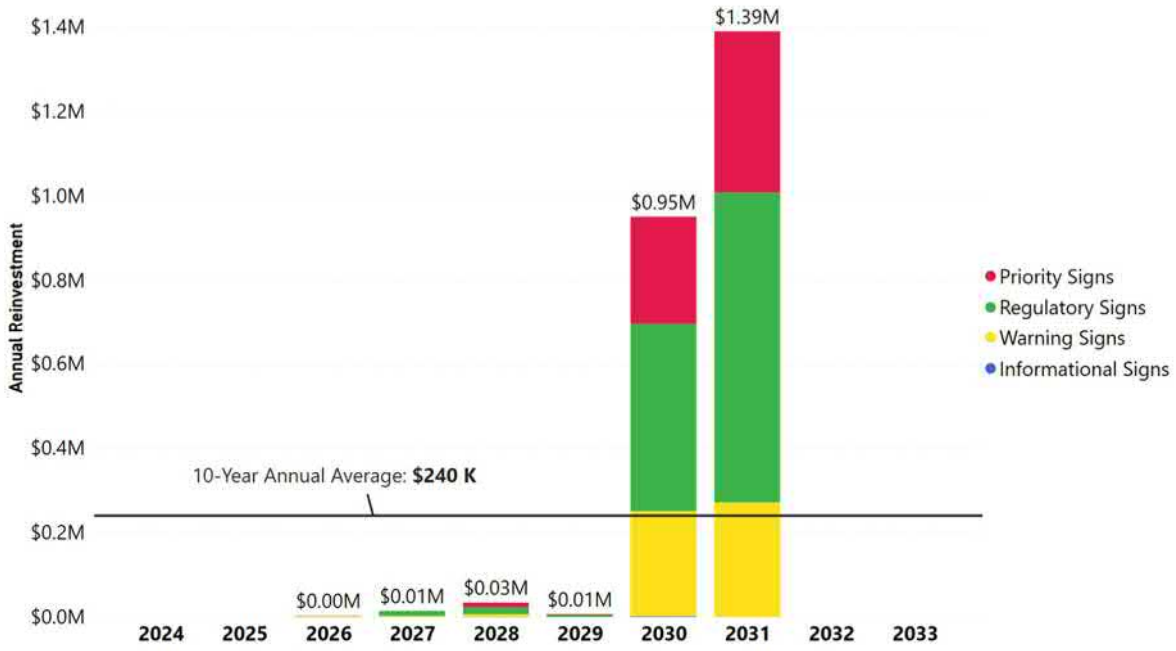


Figure 5-13: Roadway Appurtenances - 10-Year Reinvestment Needs

5.1.6.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $5.7 million is estimated to be reinvested into Roadway Appurtenances owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $571.9 thousand, as presented in Figure 5-14.

As seen in the 10-year window for 2030 and 2031, large reinvestments are forecasted in 2040 and 2041 as a significant amount of Roadway Appurtenances will have exceeded their EUL again. It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine renewal or replacement needs and that regular condition assessments of Roadway Appurtenances by the Town will assist at refining forecasted expenditures in the decades to come.

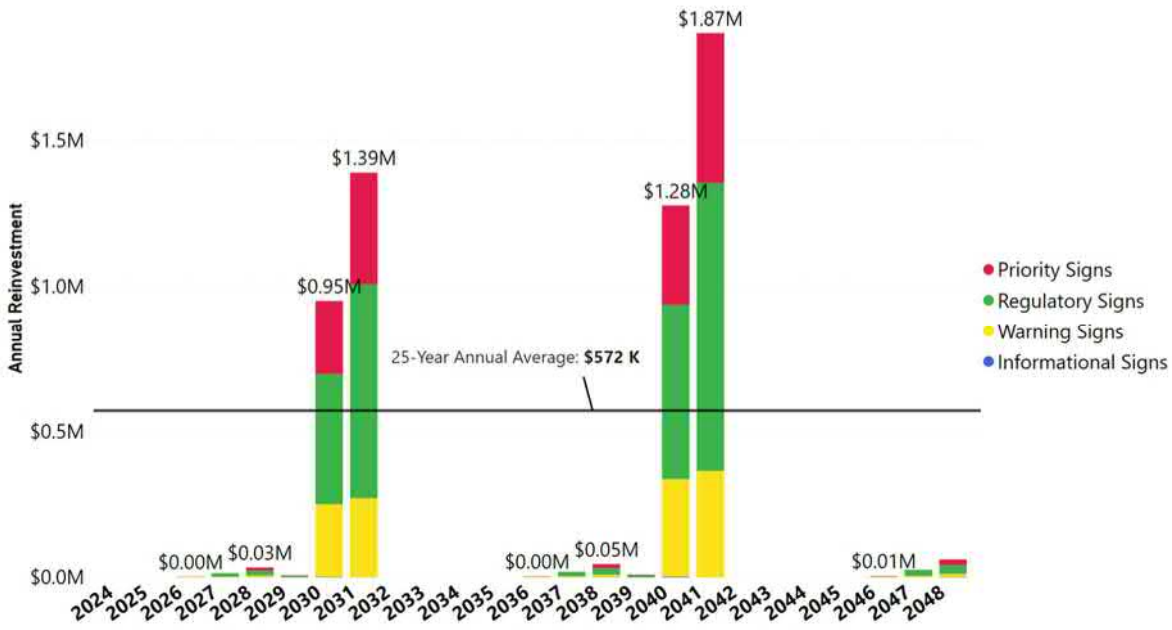


Figure 5-14: Roadway Appurtenances - 25-Year Reinvestment Needs

5.1.7 Urban Forestry

5.1.7.1 Asset Reinvestment Measures and Targets

For Urban Forestry, the Town has a Tree Preservation and Conservation Policy that was issued by the Operations and Infrastructure Department in 2016. As detailed in the Tree Preservation and Conservation Policy, the replacement of urban trees must follow a defined replacement ratio depending on whether the species of tree being replaced is invasive/pioneer, native ornamental, or non-native desirable ornamental.

The specific replacement ratios are defined as follows:

- 1:1 Ratio Replacement – Invasive or pioneer trees;
- 3:1 Ratio Replacement – Non-native, desirable ornamental trees; and
- 4:1 Ratio Replacement – Native, desirable ornamental trees.

Table 5-9 summarizes the reinvestment rate assumptions for Urban Forestry by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores. The replacement ratios per the Town's Tree Preservation and Conservation Policy were also incorporated.

Table 5-9: Urban Forestry – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Median	Percentage of Median trees with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.5%
	Percentage of Median trees with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Open/Unrestricted	Percentage of Open/Unrestricted trees with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.3%
	Percentage of Open/Unrestricted trees with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Raised/Planted	Percentage of Raised/Planted trees with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.7%
	Percentage of Raised/Planted trees with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Tree Lawn	Percentage of Tree Lawn trees with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0.5%
	Percentage of Tree Lawn trees with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Woodlot	Percentage of Woodlot trees with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Woodlot trees with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Other	Percentage of Other trees with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	1.3%
	Percentage of Other trees with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

5.1.7.2 10-Year Reinvestment Needs

There is a total of approximately $2.8 million to be reinvested into Urban Forestry assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $281.8 thousand, as presented in Figure 5-15.

It is important to note that there is significant reinvestment expected for 2024, a direct result of approximately 1,900 urban trees being rated as Very Poor condition as of 2023. In other words, approximately 1,900 urban trees in the Town's inventory were assessed by Town staff to be "Dead" according to the overall health attribute stored in the Town's GIS database.

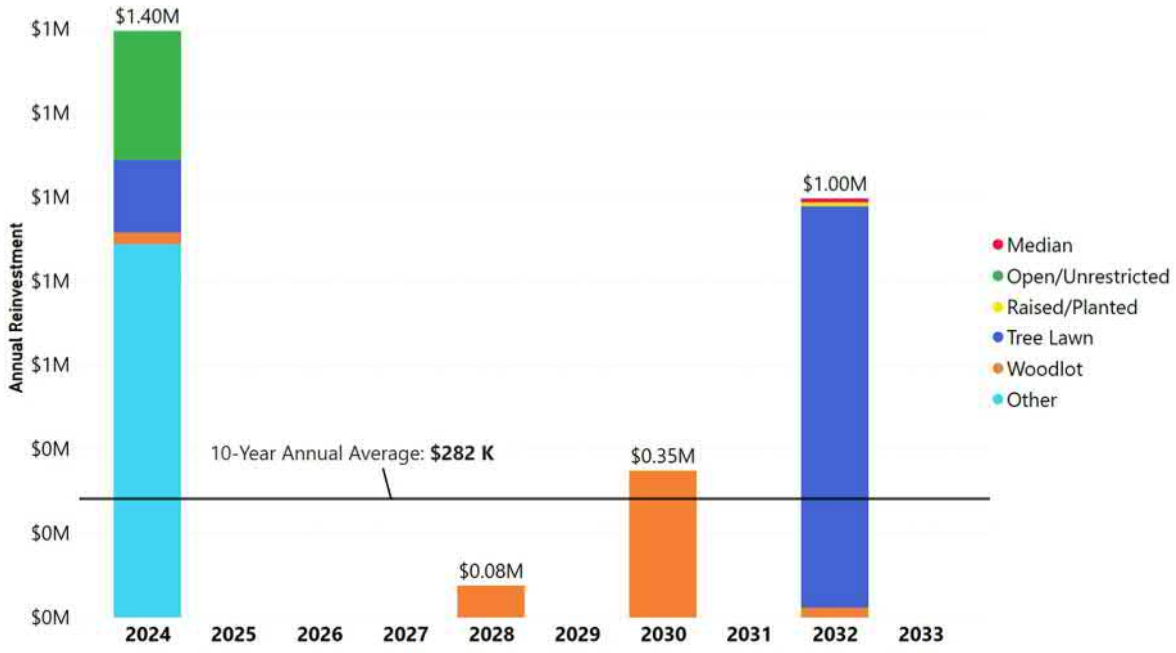


Figure 5-15: Urban Forestry - 10-Year Reinvestment Needs

5.1.7.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $41.5 million is estimated to be reinvested into Urban Forestry assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $4.2 million, as presented in Figure 5-16.

In 2040, the largest reinvestment is forecasted as a significant number of urban trees will have exceeded their EUL as defined in the AMP. It is important to note that forecasting in this lifecycle model relies heavily on the assessed condition of trees as documented in the Town's GIS database and EUL to

determine renewal or replacement needs. The EUL of tree assets is highly dependent on the species of tree and the environment in which it grows. Further, invasive species, insects, and climate considerations may alter the lifespan of certain tree species in a manor that is not easily predicted.

Regular condition assessments of Urban Forestry assets by the Town should be a priority to actively adjust lifecycle modeling and further refine forecasted expenditures in the decades to come.

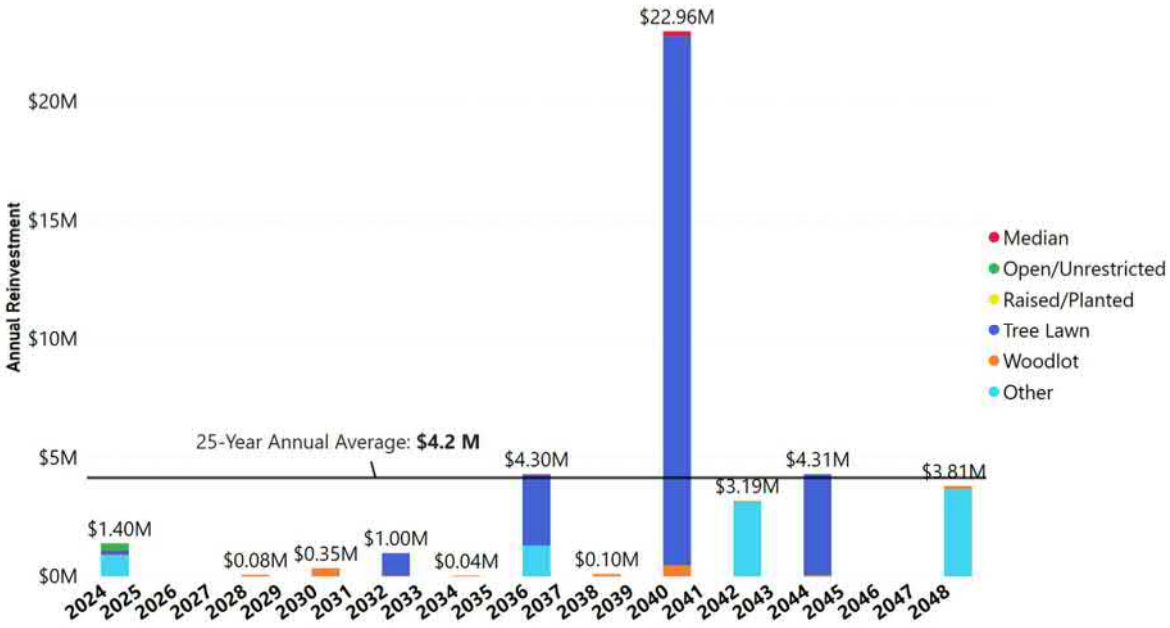


Figure 5-16: Urban Forestry - 25-Year Reinvestment Needs

5.1.8 IT Assets

5.1.8.1 Asset Reinvestment Measures and Targets

Table 5-10 summarizes the reinvestment rate assumptions for IT assets by asset class and the resulting 10-year annual average reinvestment rate as determined through lifecycle modeling. The reinvestment rate assumptions were incorporated into the lifecycle model to determine which assets will require replacement each year based on their current condition, EUL, and risk scores. It is important to note that asset inventory data for tower sites, which are vertical assets, is currently set up to pool the site, hut, and equipment into one inventory line item, respectively. To further refine the lifecycle modeling for tower sites it is recommended that the Town further develops their inventory to include individual asset elements per recommended practices pertaining to vertical assets.

Table 5-10: IT Assets – Reinvestment Rate Assumptions and Results

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Facility Equipment	Percentage of Facility Equipment with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Facility Equipment with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Tower Sites	Percentage of Tower Sites with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	0%
	Percentage of Tower Sites with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Wireless Links	Percentage of Wireless Links with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Wireless Links with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
On-Premises Servers	Percentage of On-Premises Servers with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of On-Premises Servers with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Endpoint Tech	Percentage of Endpoint Tech with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	10.0%
	Percentage of Endpoint Tech with a condition rating of 5 (Very Poor) replaced in year one and thereafter		
Security Systems	Percentage of Security Systems with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter	100%	7.8%
	Percentage of Security Systems with a condition rating of 5 (Very Poor) replaced in year one and thereafter		

Asset Class	Measure	Target	10-Year Annual Avg. Reinvestment Rate (2024-2033)
Network/Security Infrastructure	Percentage of Network/Security Infrastructure with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Network/Security Infrastructure with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	2.5%
Telephone Systems	Percentage of Telephone Systems with risk equal to or exceeding 16 and a condition rating of 4 (Poor) or 5 (Very Poor) replaced in year one and thereafter Percentage of Telephone Systems with a condition rating of 5 (Very Poor) replaced in year one and thereafter	100%	3.0%

5.1.8.2 10-Year Reinvestment Needs

There is a total of approximately $2.4 million to be reinvested into IT Assets owned by the Town in the next 10 years, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 10-year annual average of approximately $241.1 thousand, as presented in Figure 5-17.

It is important to note that there is significant reinvestment for software assets expected throughout the 10-year outlook due to costs associated with annual operation, maintenance, and warranties. In 2030, a significant reinvestment in Endpoint Tech is forecasted totalling approximately $886.7 thousand due to the structure of the current IT asset inventory for Endpoint Tech which features pooled assets such as laptops, desktops, and monitors. With assets being pooled in the inventory, lifecycle modeling results in pooled replacement. It is recommended that the Town expands their Endpoint Tech inventory to document individual Endpoint Tech assets and their associated attributes to increase the accuracy of lifecycle modeling.

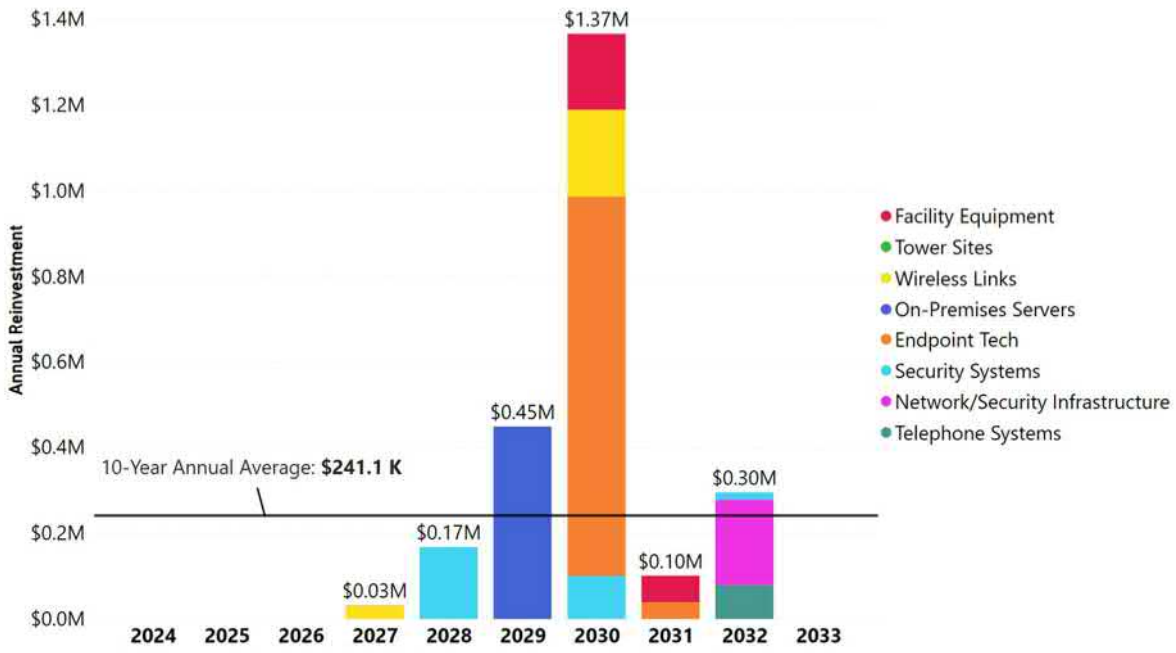


Figure 5-17: IT Assets - 10-Year Reinvestment Needs

5.1.8.3 25-Year Reinvestment Needs

Increasing the lifecycle modeling outlook to 25 years, a total of approximately $10.9 million is estimated to be reinvested into IT assets owned by the Town, with respect to inflated dollar values (3% average annual inflation assumed). This translates to a 25-year annual average of approximately $436.1 thousand, as presented in Figure 5-18.

It is important to note that there is significant reinvestment for software assets expected throughout the 25-year outlook due to costs associated with annual operation, maintenance, and warranties. Like the 10-year outlook, significant reinvestment in pooled replacement of Endpoint Tech is forecasted in the years 2037 and 2044 as the assets complete two more cycles of their EUL.

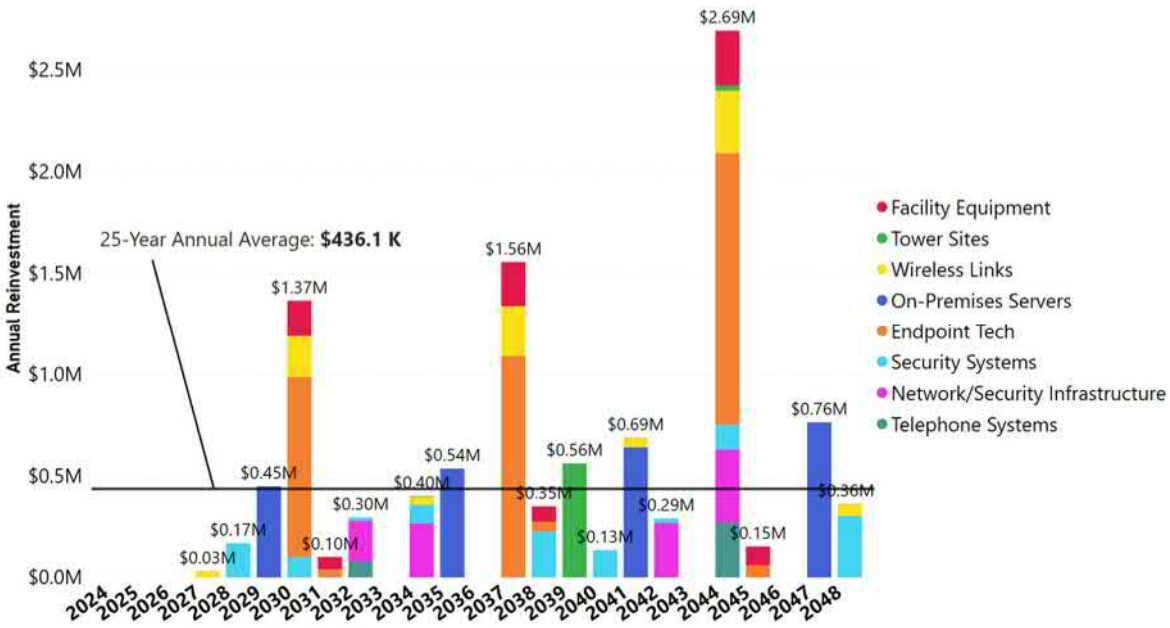


Figure 5-18: IT Assets - 25-Year Reinvestment Needs

5.2 Capital and Operational Expenditures and Funding

5.2.1 Capital Forecast

5.2.1.1 Funding

The Town currently funds non-core capital projects through user fees, taxes, infrastructure levies, and capital reserves. At present, the Town carries debt to fund capital expenditures for a select few ongoing large projects. Due to this, the Town has noted that they are nearing their debt repayment limit. Therefore, the option to fund non-core asset capital expenditures through debt is limited and not a preferred option for capital expenditures within the horizon of this asset management plan. For this analysis, the annual inflation rate was assumed to be 3% in the lifecycle costing. This financial strategy should be examined during the annual budgeting processes to ensure the sustainability of the Town's financial position as it relates to its non-core assets.

Table 5-11 summarizes the current baseline funding that the Town has for non-core capital investments, based on information gathered from the *2024 Town of Georgina Budget* and *Financial Strategy Workshops*. This baseline capital funding capacity is not intended to reflect the Town's maximum available funding; rather, it is intended to represent the standard amount of funding the Town will typically have each year if they maintain the status quo. This baseline funding may be subject to change; additional funding sources, such as additional project-specific and timing-specific grants are expected to supplement this baseline funding where needed. Table 5-12 summarizes the key reserves pertinent to the financial strategy of capital non-core asset projects, as highlighted by the Town's financial team. The baseline funding capacity includes the portion of the infrastructure levy that is dedicated to non-core assets, including the approved increases to this fund of 5.5% per year over the next 10 years.

Table 5-11 : Current Capital Funding Sources[3]

Funding Source	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Infrastructure Levy (Non-Core Allocation; 1.25% compounded annually)	$3,700,000	$4,391,250	$5,120,519	$5,889,897	$6,701,592	$7,557,929	$8,461,365	$9,414,490	$10,420,037	$11,480,889
Total	$3,700,000	$4,391,250	$5,120,519	$5,889,897	$6,701,592	$7,557,929	$8,461,365	$9,414,490	$10,420,037	$11,480,889

[3] The capital funding values are adapted from the Town's 2024 Budget Summary and the Financial Strategy workshops

Table 5-12: Capital Reserve Opening Balances 2024

Reserve	2024 Opening Balance[4]
Reserve Corporate Capital/New Infrastructure	$ 3,422,160
Reserve Facilities - Repair & Replacement	$ 8,121,130
Reserve Fleet & Equipment - Repair & Replacement	$ 5,422,250
Reserve Keswick Cemetery	$ 2,230
Reserve Library Capital	$ 267,580
Reserve Parks - Repair & Replacement	$ 142,790
Reserve Waterfront Parks	$ 3,178,360
Total	$ 20,556,500

5.2.1.2 Lifecycle Activities & Expenditures

Table 5-13 summarizes the 10-year forecast of capital expenditures required to achieve the capital asset lifecycle management strategy identified in the earlier sections of this plan.

[4] Reserves and 2024 Opening Balances were directly extracted from the Town of Georgina's publicly available 2024 Budget.

Table 5-13: Capital Expenditure Forecast

Asset Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Facilities	6,430,659	0	0	45,849	0	8,229,887	0	5,161,387	12,387,687	11,624,484
Parks	20,039,103	254,616	240,400	1,185,161	0	179,108	2,101,429	1,341,510	3,490,258	1,854,221
Fleet	3,605,000	0	0	0	1,321,572	0	1,210,051	0	2,270,305	221,746
Equipment	10,166,283	225,246	545,271	342,155	232,434	1,514,237	891,218	615,650	1,324,305	736,130
Active Transportation	421,604	0	0	0	0	0	0	0	0	0
Roadway Appurtenances	0	0	3,278	14,632	34,199	7,164	950,692	1,389,647	0	0
Urban Forestry	1,395,444	0	0	0	75,817	0	349,038	0	997,369	0
IT Assets	0	0	0	31,505	168,095	448,675	1,366,156	101,034	295,518	0
Condition Assessments	708,590	729,848	751,743	803,799	797,524	821,450	846,094	871,476	931,823	909,283
Totals	42,766,683	1,209,709	1,540,692	2,423,100	2,629,641	11,200,521	7,714,678	9,480,704	21,697,265	15,345,864

5.2.2 Capital Budget Financial Analysis

Figure 5-19 shows the lifecycle capital requirements compared to the baseline capital funding capacity over the 10-year period to assess if there are any anticipated funding gaps and assess if the proposed financial strategy allows the Town to adequately invest in its capital assets. The baseline capital funding capacity includes non-core allocation of the infrastructure levy, and user fees and service charges related to facilities, parks, cemeteries, and horticulture (i.e., excluding reserves).

The 10-year annual lifecycle cost average was estimated at $11.6 M. The baseline capital funding capacity starts at an approximate $3.7 M **which is anticipated to increase** annually with increases in the infrastructure levy. With an annual average capital funding capacity being estimated at $7.3 M, there is an annual average shortfall of approximately **$4.3**M.

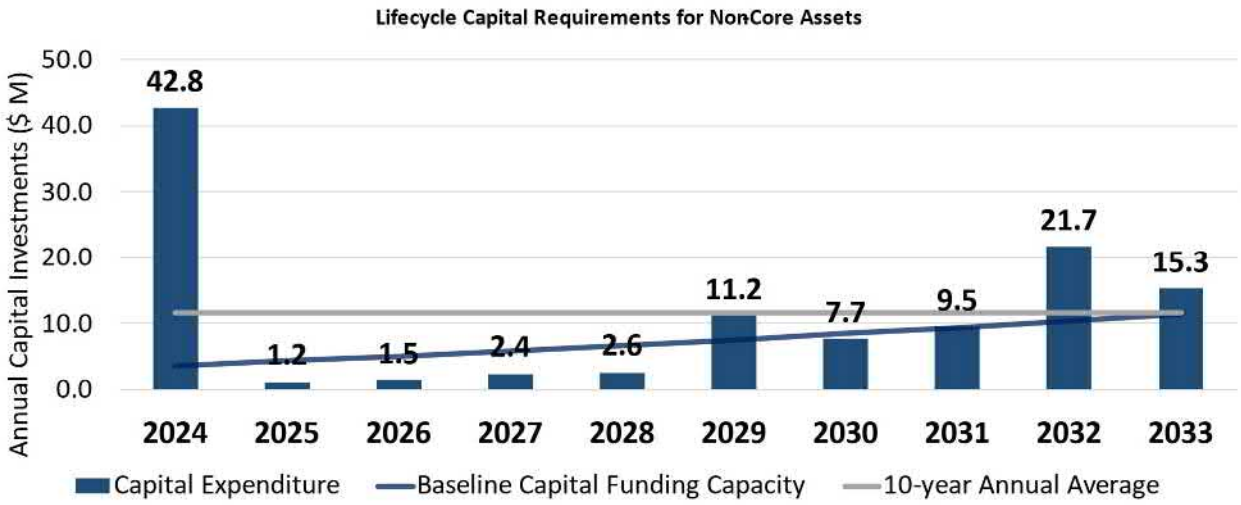
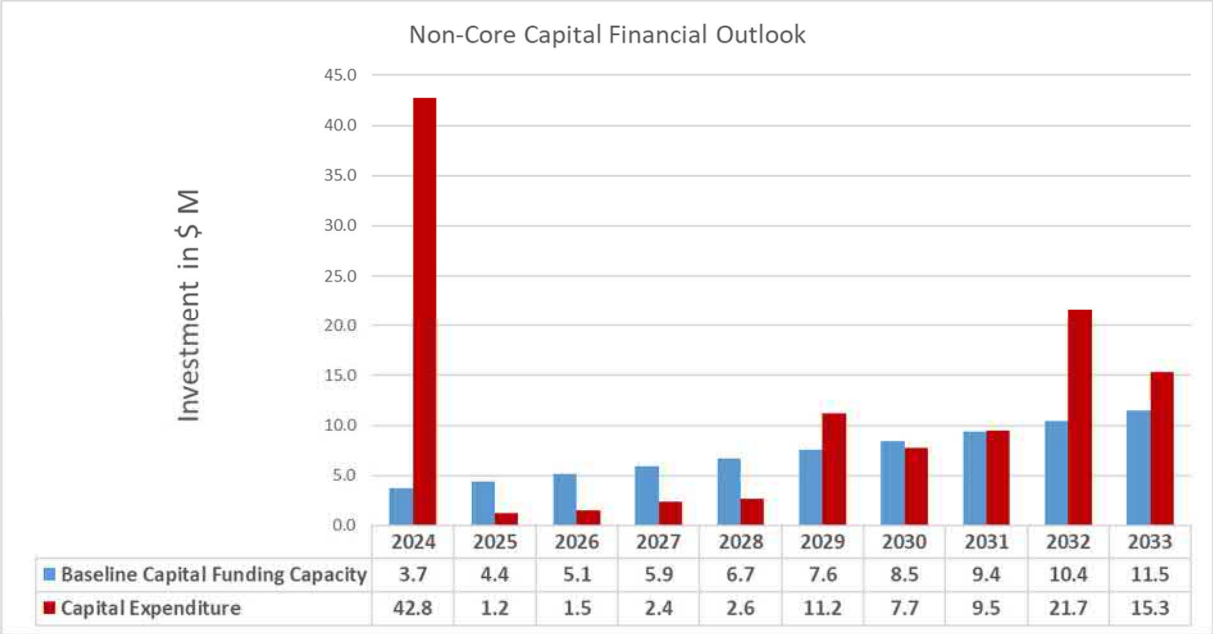


Figure 5-19 : Forecasted Annual Capital Expenditures, 10-Year Annual Average, and Baseline Capital Funding Capacity (2024 to 2033)

Figure 5-20 presents the lifecycle capital expenditures projected from 2024 to 2033 compared with the baseline capital funding capacity in each year. In five of the years, there is adequate funding available; however in the remaining five years the requirements far outweigh the capital funding capacity. If the backlog of lifecycle requirements in 2024 did not exist, the baseline funding capacity would be adequate going forward.

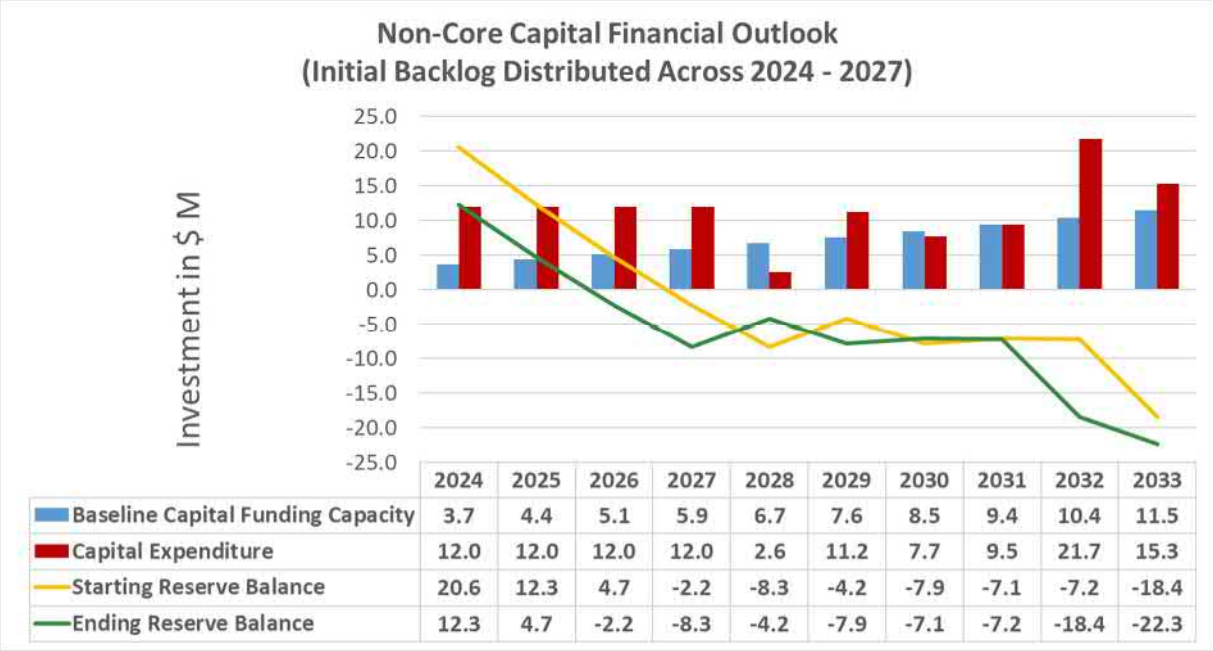
If the financial strategy includes the use of reserve funds to offset the shortfalls in non-core capital funding, the current reserve of $20.6 M is depleted with the 2024 backlog.



	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Baseline Capital Funding Capacity	3.7	4.4	5.1	5.9	6.7	7.6	8.5	9.4	10.4	11.5
Capital Expenditure	42.8	1.2	1.5	2.4	2.6	11.2	7.7	9.5	21.7	15.3

Figure 5-20: Non-Core Capital Financial Outlook

Alternatively, Figure 5-21 depicts a funding scenario where the lifecycle activities of the first four years (2024 – 2027) are scheduled in a way to evenly distribute the lifecycle costs. Under this scenario, reserve balances will see an overall decrease from 2024 through 2033, with the ending reserve balance projected to go into a deficit by 2026 as shown below.



	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Baseline Capital Funding Capacity	3.7	4.4	5.1	5.9	6.7	7.6	8.5	9.4	10.4	11.5
Capital Expenditure	12.0	12.0	12.0	12.0	2.6	11.2	7.7	9.5	21.7	15.3
Starting Reserve Balance	20.6	12.3	4.7	-2.2	-8.3	-4.2	-7.9	-7.1	-7.2	-18.4
Ending Reserve Balance	12.3	4.7	-2.2	-8.3	-4.2	-7.9	-7.1	-7.2	-18.4	-22.3

Figure 5-21: Non-Core Capital Financial Outlook (Initial Backlog Distributed Across 2024 - 2027)

Although theoretical, Figures 5-20 and 5-21 demonstrate that there is a need for additional funding and that Town may not be able to sustainably fund the non-core lifecycle activities over the 10-year assessment period if no additional revenue sources are identified.

If the Town prefers to avoid using reserves to fund their annual average shortfall of $4.3 M, they could instead increase their tax levy. Based on the 2024 tax levy of $55.3 M stated in the Town's 2024 Budget Summary, funding the shortfall in one year would require a one-time increase of 7.5%.

Taking into consideration taxpayer affordability, three options were considered to phase-in the required annual contribution over a period of 10, 15, 20 years as presented in Table 5-14. The estimated annual impact on the tax levy is shown in Table 5-14. Should a 10-year phase-in be implemented, this would result in an annual levy rate increase of 0.75% each year over the next 10 years. Under a 15-year phase-in, this would increase the annual levy by 0.50% in each of the next 15 years. A 20-year phase-in would result in an annual increase in the levy of 0.37% in each of the next 20 years. These phase-ins aim to eliminate the funding gap in 10/15/20 years, meaning that that gap will still exist albeit shrinking, for the period leading up to the end of the 10/15/20 year phase-in.

Table 5-14: Non-Core Capital Contribution Options

Annual Average Baseline Funding Capacity	Annual Average Lifecycle Activities Cost	Shortfall	10-Year Annual Levy Impact	15-Year Annual Levy Impact	20-Year Annual Levy Impact
$7,314,000	$11,600,000	$4,286,000	0.75%	0.50%	0.37%

5.2.3 Operating Budget Financial Analysis

Table 5-15 summarizes the 10-year forecast of operational expenditures required based on 2018 and 2019 actual operational values and 2018 to 2023 operational budgets. The Operations & Maintenance (O&M) expenditure projections are expressed in 2024 dollars.

Table 5-15: Lifecycle Operational & Maintenance Costs (In 2024 Dollars)

Asset Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Facilities	11,180,400	1,008,400	1,038,700	1,069,900	1,102,000	1,135,100	1,169,200	1,204,300	1,240,400	1,277,600
Parks	3,859,800	11,515,800	11,861,300	12,217,100	12,583,600	12,961,100	13,349,900	13,750,400	14,162,900	14,587,800
Fleet	1,064,100	1,096,000	1,128,900	1,162,800	1,197,700	1,233,600	1,270,600	1,308,700	1,348,000	1,388,400
Equipment	979,000	2,021,600	2,082,200	2,144,700	2,209,000	2,275,300	2,343,600	2,413,900	2,486,300	2,560,900
Active Transportation and Roadway Appurtenances	139,700	3,975,600	4,094,900	4,217,700	4,344,200	4,474,500	4,608,700	4,747,000	4,889,400	5,036,100
Urban Forestry	681,900	143,900	148,200	152,600	157,200	161,900	166,800	171,800	177,000	182,300
IT Assets	1,962,700	702,400	723,500	745,200	767,600	790,600	814,300	838,700	863,900	889,800
Totals	19,867,600	20,463,700	21,077,700	21,710,000	22,361,300	23,032,100	23,723,100	24,434,800	25,167,900	25,922,900

The non-core O&M budget contribution in 2023 was approximately $19.3 M based projections extrapolated from the Town's 2018 and 2019 O&M actuals and 2018 to 2023 budgets. Based on the findings of the non-core AMP, there is a need to contribute $22.8 M annually towards non-core O&M activities leaving a projected funding shortfall of $3.5M annually.

An opportunity may exist in the future to introduce increases to user fees or service charges and allocate portions of the revenue collected towards O&M costs. At present the majority of user fees are understood to be directed to self-funding programs that operate within the non-core assets but do not explicitly contribute to asset O&M costs. Table 5-16 summarizes the 2024 budget revenue from user fees, service charges, and lease and rental for 'Facilities' and 'Parks, Cemeteries, and Horticulture".

Table 5-16: Present User Fees and Service Charges[5]

Funding Source	2024
Facilities User Fees & Service Charges; Lease & Rental	$ 2,200,830
Parks, Cemeteries, and Horticulture User Fees & Service Charges; Lease & Rental	$ 1,035,590
Total	$ 3,236,420

The impact to user fees would be very significant (doubling) if the O&M shortfall were to be recovered from programming. The typical approach for funding O&M would be through tax levy increases. Funding the shortfall in one year would result in an additional tax levy one time increase of 6.3%. Amortizing increases over longer periods is summarized below.

Table 5-17: Non-Core O&M Contribution Options

2023 O&M Budget	10-Year Annual Average O&M Cost	10-Year Annual O&M Shortfall	10-Year Annual Budget Increase	15-Year Annual Budget Increase	20-Year Annual Budget Increase
$19,300,000	$22,776,110	$3,476,110	0.63%	0.42%	0.31%

[5] The user fees and service charges values are adapted from the Town's 2024 Budget Summary and the Financial Strategy workshops

Taking into consideration taxpayer affordability, three options were considered to phase-in the required annual contribution over a period of 10, 15, 20 years. The estimated annual impact on the tax levy is shown in Table 5-17. Should a 10-year phase-in be implemented, this would result in an annual levy rate increase of 0.63% each year over the next 10 years to meet parity with the projected annual O&M operating expenditure for all non-core assets. Under a 15-year phase-in, this would increase the annual levy by 0.42% in each of the next 15 years. A 20-year phase-in would result in an annual increase in the levy of 0.31% in each of the next 20 years.

In addition to the increases in the tax levy explored above, several financial strategies could be implemented by the Town to mitigate the projected funding shortfalls for non-core assets:

- Grants and subsidies: Government grants and subsidies should be used where possible as a supplemental source of capital funding to reduce reliance on user fees and infrastructure levies and potentially redirect portions of these fees to operating costs (where applicable);
- E**ffi**ciency Improvements: Efficiency improvements such as selection of components with longer useful lifespans, more energy efficient systems (e.g., LED replacements, variable frequency drives in pumps, etc.), and strategic planning of staff allocation can help the Town achieve operational budget surpluses;
- Capital Reserves: It is important for the Town to sustain capital reserves with annual budgeted contributions to build up healthy balances that can sustainably contribute to capital investments, recognizing that capital expenditures will fluctuate from year-to-year; and
- **Coordination of Strategic Interventions**: The business planning process may include additional considerations for synergies between asset investments. For instance, non-core service categories may coordinate on strategic maintenance plans for cross-category assets that display a service dependence (e.g., playground structures and urban forestry interventions may be bundled into a single contract; facility component replacements may be coordinated to occur under one contract by deferring some replacements to align with more significant activities under a single contract or task).

The lifecycle investment strategy is predicated upon adequate O&M funding to achieve the expected asset longevity, and timely lifecycle replacements to maintain asset service. Inadequate funding can be expected to result in prolonged underperformance or premature failure. The resulting unplanned impacts to levels of service and/or risk is undesirable. The alternative is ongoing investment review, including level of service and risk monitoring, to revise the asset levels of service and risk metrics. Future asset management strategies may consider planned LOS target changes in response to asset service performance. Targeting a lower LOS can be a strategy to reduce capital expenditures by deferring some replacements and accepting additional risk in the asset portfolios. However, this strategy requires more comprehensive LOS and performance data to implement and is not presently recommended.

6.0 Continuous Improvement

The importance of continuous improvement within an asset management program cannot be overstated. It facilitates the ability to match pace with advancements in technology, new industry standards, and evolving community demands. Moreover, continuous improvement can lead to minimized risk, enhanced service delivery, elongated asset lifespans, and more robust financial sustainability. In essence, investing in continuous improvement strategies demonstrates a forward-thinking approach to organizational success, reliability, and agility.

6.1 Improvement Initiatives

This section focuses on improvement initiatives that were identified through the AMP project, based on experience with limited or outdate data, gaps or barriers to reporting on levels of service and performance, or seeking to apply global best practices to advance asset management at the Town. The following subsections outline the improvement initiatives, with each subsection dedicated to specific chapters of this AMP. There are 11 improvement initiatives that were identified for the Town to consider. In moving forward, also refer to the implementation plan in Section 6.2 for activities and projects to advance asset management practices.

6.1.1 State of Infrastructure Improvement Initiatives

Data collection and monitoring is an essential part of asset management. The SOTI chapter, developed based on available asset data, sets the stage for the remainder of the AMP chapters by providing a summary the existing asset inventory. The five improvement initiatives related to the SOTI chapter focus on improving asset data to better inform future SOTI reporting.

6.1.1.1 [SOTI-1] Adopt a Global Unique Asset ID System for All Assets

- Currently, the asset inventory features some assets with unique IDs used by the Town and many without. Unique IDs in the Town's asset data exist primarily for the assets that have been captured within the WorkTech platform, supplemented by some unique IDs garnered from third-party assessments and reports such as the retro-reflectivity assessment reporting for road signs. Dillon assigned a generic unique ID to all assets in the creation of this AMP to aid in summarization and reporting;
- The Town's asset management program should adopt a global unique ID system including a standardized unique ID structure. A unique ID system for asset inventories can bring significant advantages including:
  - *Improved Accuracy*: The unique ID system can prevent errors occurring due to duplication or incorrect identification. This reduces discrepancies between digital records and physical assets. It becomes easier to carry out regular checks and balances, ensuring that all assets are accounted for;

- *Increased Efficiency*: It can significantly speed up the process of locating, tracking, and managing assets, thus making workflows more efficient. Further, assets can be identified and linked across different data sources such as Worktech, the asset inventory, and GIS;
- *Enhanced Asset Visibility*: It helps in keeping track of the location, condition, and additional attributes that can be vital for strategizing the use and lifecycle management of the assets; and
- *Enabling Scalability*: As the Town's asset portfolio grows, having a global unique ID system in place allows for easy integration of new assets into the asset management system.

6.1.1.2 [SOTI-**2**] Eliminate Pooled Asset Inventories

- Currently, there are several instances where vertical or point assets are pooled within existing asset inventory data. For example, the tower sites, which are vertical assets within the IT assets inventory, pool together all tower elements, all hut elements, and all equipment under singular inventory items, respectively. Further, the Parks asset inventory features unique Worktech IDs EQUIPT000190 and EQUIPT000207, which pool together 27 and 19 individual bleachers, respectively;
- The Town's asset management program should phase out the practice of pooling of assets where groups of individual assets or asset elements are recorded under a singular unique ID. This action will greatly enhance the visibility of the individual condition of each asset, or asset element, and facilitate a more accurate SOTI report and reinvestment projection. Furthermore, it will lead to a more structured asset management approach, thereby boosting the efficacy and efficiency of asset maintenance and management activities;
- A reasonable definition of asset for the purpose of decoupling asset pools may be to consider an asset as independently providing a customer service, representing a significant capital value, be composed of systems or components that include actionable maintenance or lifecycle replacement investments; and
- Important exceptions to the elimination of pooled assets include the urban forestry asset inventory, in which individual trees are identified as assets; however, workorders do not typically represent interventions on existing trees. A redefined asset hierarchy for urban forestry may include service-level definition of an asset, such as canopy area, windbreak function, or align with environmental land classifications. Such an urban forestry asset may then represent a significant group of individual trees, and standard work procedures may be written that provide workorder tasks associated with these stands of trees with each task including resource and expense unit rates.

6.1.1.3 [SOTI-**3**] Refine Asset Data

- The Town's existing asset inventory exhibits gaps in asset data that reduce the accuracy of the AMP. For example, the elemental inventory for the Pefferlaw Fire Station (excluding the Administration Building on the same site for which a BCA was completed) has been derived based on the elements of a similar vertical asset, the Sutton Fire Hall. Additionally, the elements comprising the GRCC, a future Town asset planned for 2026, are currently unknown eliminating the ability for lifecycle modeling of this asset within this AMP; and

- The Town should pinpoint and resolve prevailing data gaps, which include unknown vertical asset elements, asset construction or installation years, replacement costs, and conditions. A comprehensive and well-structured asset inventory complete with reliable asset data will enable a more meticulous tracking of each asset and enhance the precision in SOTI reporting and planning for asset maintenance and replacements.

6.1.1.4 [SOTI-4] Development of the Informational Sign Inventory

- The existing asset inventory for Roadway Appurtenances comprises of only 5 informational signs. During this AMP project, Town staff expressed the need to further develop the informational sign inventory suggesting a significant portion (approximately 7,000) of Town owned informational signs are not accounted for in the existing asset inventory; and
- Continued focus on developing the informational sign inventory is recommended. This will ensure all sign assets owned by the Town are captured accurately, enhancing their management.

6.1.1.5 [SOTI-5] Develop an Asset Condition Assessment Program

- The Town is urged to implement the condition assessment strategy as outlined in **Section 4.6 and** Appendix D of the AMP. This includes allocating a budget of $0.8M per year on average, for condition assessment expenditures over the next decade; and
- The benefits of executing this comprehensive condition assessment strategy are numerous, including enhanced visibility of existing asset conditions, optimal usage of funding mechanisms, and longer asset lifespans. This strategy, once adopted, will immensely aid in making informed asset investment decisions while eliminating wasteful spending. Revise with the re-evaluation of condition assessment activities on an annual basis.

6.1.2 Level of Service Improvement Initiatives

LOS report on and measure the services the Town provides to the community through the use of infrastructure assets and natural assets. The application of the LOS framework plays an important role in supporting the advancement of the Town's strategic vision, mission, and goals. The line of sight or alignment of LOS with the overarching goals, as outlined in the Town's Strategic Plan is an essential concept in asset management. The improvement initiative related to the LOS chapter focuses on tracking key LOS metrics.

6.1.2.1 [LOS-1] Increase Tracking of LOS Metrics

- The selected LOS parameter for all service categories is Quality & Availability. Several community LOS and technical LOS metrics have been identified for this parameter specific to each service category and there are several metrics that are currently not tracked by the Town.

Refer to **Section 3** for full list of metrics. For example:

- Facilities:
  - Number of complaints received through Service Georgina related to comfort level and building environment.
  - Average response time for security incidents.
  - Number of accessible parking spots at each facility.
- Parks:
  - Work orders older than 30 days.
- Equipment:
  - Downtime of equipment assets (hours or % of available time).
  - Maintenance expenses per utilization ($/hour usage).
- Active Transportation:
  - Insurance claims per year.
- Urban Forestry:
  - Average pruning cycle and frequency of watering.

- It is recommended that the Town focuses on improved tracking of the identified LOS metrics to better inform LOS being provided and progress towards proposed LOS.

6.1.3 AM Strategy Improvement Initiatives

The implementation of AM strategies is a key aspect of successful asset management and aids in risk mitigation, achieving the proposed LOS, and ensuring adequate procedures are in place to facilitate asset management practices. The three (3) improvement initiatives related to the AM Strategy chapter focus on refining the risk framework and current Town processes to align with the needs of the asset management program.

6.1.3.1 [AMS-1] Refine the Risk Framework

- The Town should review the risk framework presented in Appendix C and ensure that appropriate risk parameters and thresholds are defined for the assets within each service category;
- Considering the existing framework, the Town should seek to fill data gaps related to risk parameters including:
  - For the "Features" metric considered as 50% of the Physical Condition parameter as part of the PoF for Fleet assets, the Town should seek to identify which Fleet assets exhibit the presence of features such as specific attachments related to the service the Fleet asset provides (e.g., snowplows). This metric was omitted from the risk score calculation featured in this AMP as the presence of features for individual Fleet assets is currently unknown. The metric is intended to capture the effect of increased use of vehicles with specific attachments.
  - For the "Location / Facility" metric contributing to the Social parameter as part of the CoF for Urban Forestry assets, the Town seek to fill in missing data related to the location of assets.

- For Roadway Appurtenances, a road volume metric such as annual average daily traffic (AADT) could be incorporated as part of the CoF to create a more accurate hierarchy for replacement priority of signs in poor or very poor condition.

6.1.3.2 [AMS-2] Transition to a Centralized Database for Tracking of All O&M Activities and Costs

- The existing method of tracking O&M activities and costs for non-core assets consists of reviewing work order data stored in Worktech, and for assets not included in Worktech, O&M is typically tracked within various tools and files that are disconnected islands of data. It is recommended that the Town transitions to one centralized database where O&M data is stored for all Town assets (i.e., across all services); and
- Interim steps to achieving coordinated O&M activity tracking include the development of standard work procedures as noted in Table 4-26 (page 98):
  - Preceding the implementation of a central CMMS, the Town's non-core service categories should each begin to build workorders that link standard operating procedures (SOPs) to assets. This process also enables the forecast of expected O&M costs and staff resourcing by scheduling SOPs against assets at set frequencies. SOPs should include a rate of productivity representing the primary unit of work for the SWP against an asset characteristic (e.g., labour hours per square meter, equipment rental per canopy volume, software license cost per CPU socket).
  - Consistent application of tools such as Worktech across each service category, including common use of asset ids for all workorders, scheduled date/due date/completed date for all workorders, and other recommendations made in **Section 4.5.3** (starting on page 97).
  - For non-core service areas that rely upon multiple tools and files to implement a maintenance system, it is important to prepare for O&M optimization by undertaking the above two steps and implement these within the available processes in preparation for evolution into a centralized platform.

6.1.3.3 [AMS-3] Standardize Tracking of O&M Activities and Costs in Relation to Individual Assets

- Overall, the current state of tracking O&M limits the Town to general summaries of activities and costs by service category, restricting the line of sight for O&M activities and costs related to individual assets. Furthermore, the labour effort associated with O&M activities is not well documented. It is recommended that upon implementation of a global unique asset ID system (see **improvement initiative SOTI-1**), the Town should link O&M activities and costs directly to individual asset IDs. Further consideration should be given to assigning additional unique IDs to specific O&M activities, to streamline summaries of lifecycle activities and their frequencies;
- Transitioning to asset-related O&M activity and cost tracking will help the Town spot troublesome assets, further understand O&M requirements for different asset types (including labour hours), and tailor their AM strategies effectively; and

- Development of a Standard Operating Procedure (SOP) for tracking new O&M activities and costs can be an effective change management tool, setting clear expectations for Town staff. An example of an SOP is provided in **Table 4-24 in Section 4.5.3**.

6.1.4 Financial Analysis & Strategy

The improvement initiatives related to the Financial Analysis & Strategy chapter focus on improving available data to refine lifecycle analysis and better understand labour considerations. As noted in Section 4.5, the present non-core asset management processes have opportunities to improve investment controls including:

1. Adopt a budget category for each of the non-core asset service areas to manage and track expenditures; and
2. Adopt a consistent workorder system in each of the service areas that tracks investment expenditures against assets.

6.1.4.1 [FAS-1] Periodically Assess Replacement Costs and Estimated Useful Lives

- The precision of financial forecasts, particularly lifecycle modeling of asset replacements, hinges on the accuracy of condition assessment results, documented asset and/or asset element replacement costs, and expected useful lives. It is suggested that the Town should periodically examines the expected useful lives assigned throughout its non-core asset inventory to ensure alignment with the observations and experiences of Town staff. This includes developing procedures to track replacement costs as they are incurred and the time interval between replacements; and
- The associated procedures may be streamlined upon implementation of a global unique asset ID system (**see improvement initiative SOTI-1**), where the Town would be able to link replacement costs incurred and time intervals between replacements directly to individual asset IDs.

6.1.4.2 [FAS-2] Standardize Tracking of Labour for Completion of O&M Activities

- As discussed in continuous improvement initiative AMS-2, use of Worktech is the primary method employed to track completion of workorders related to O&M activities including inspections, maintenance, and rehabilitation. From Dillon's review of workorder data stored in Worktech and the various Excel spreadsheets maintained by Town staff, there is no workorder data available for the Active Transportation, Urban Forestry, and IT service categories; and
- Standardizing the way workorders are tracked, including documentation of required labour hours to complete various O&M activities, will allow the Town to proactively project labour hours required for all aspects of O&M. This includes the ability to evaluate useful metrics such as measuring the total amount of full-time employees required for O&M activities, typically done using full-time equivalent (FTE) units.

6.2 Implementation Plan

The implementation plan for continuous improvement initiatives, as outlined in Section 6.1, sets the course for enhancing the Town's overall operational efficiency related to asset management practices. The implementation plan in this section aims for systematic progress, outlining key initiatives, their timelines, and responsibility allocations. At a high level, the goals of the implementation plan include augmenting quality of the Town's asset management program, translating to potential improvements in productivity, operational efficiency, and satisfaction of Town residents who use the services provided by the Town's non-core assets.

6.2.1 Prioritized Roadmap

Table 6-1 outlines a roadmap tailored to provide strategic direction for implementing the continuous improvement initiatives outlined in Section 6.1. It is important to note that executing the continuous improvement initiatives outlined in this AMP means substantial procedural changes, necessitating the Town's time and effort. For more details on each initiative, refer to Section 6.1. The roadmap is intended as a guideline and the Town will need to prioritize appropriate sequencing of implementing initiatives based on available resources.

Table 6-1: Roadmap for the Implementation of Continuous Improvement Initiatives

Continuous Improvement Initiative	Responsibility	2024	2025	2026	2027	2028
[SOTI-1] Adopt a Global Unique Asset ID System for All Assets	Asset Management (Responsible & Accountable)					
[SOTI-2] Eliminate Pooled Asset Inventories	Asset Management (Responsible & Accountable)					
[SOTI-3] Refine Asset Data	Asset Management (Responsible & Accountable) Operations Staff (Responsible & Accountable)					
[SOTI-4] Development of the Informational Sign Inventory	Asset Management (Responsible & Accountable) Operations Staff (Responsible & Accountable)					
[SOTI-5] Develop an Asset Condition Assessment Program	Council (Consulted & Informed) Senior Leadership (Consulted & Informed) Asset Management (Responsible & Accountable) Operations Staff (Responsible)					
[AMS-2] Transition to a Centralized Database for Tracking of All O&M Activities and Costs	Senior Leadership (Consulted & Informed) Asset Management (Accountable) Operations Staff (Responsible)					
[AMS-3] Standardize Tracking of O&M Activities and Costs in Relation to Individual Assets	Senior Leadership (Consulted & Informed) Asset Management (Responsible & Accountable) Operations Staff (Responsible)					

Continuous Improvement Initiative	Responsibility	2024	2025	2026	2027	2028
[FAS-2] Standardize Tracking of Labour for Completion of O&M Activities	Senior Leadership (Consulted & Informed) Asset Management (Responsible & Accountable) Operations Staff (Responsible)					
[LOS-1] Increase Tracking of LOS Metrics	Senior Leadership (Consulted & Informed) Asset Management (Responsible & Accountable) Operations Staff (Responsible)					
[AMS-1] Refine the Risk Framework	Council (Consulted & Informed) Senior Leadership (Consulted & Informed) Asset Management (Responsible & Accountable)					
[FAS-1] Periodically Assess Replacement Costs and Estimated Useful Lives	Asset Management (Responsible & Accountable) Operations Staff (Responsible)					

6.2.2 Change Management

Change management within an organization is a systematic approach designed to transition individuals, teams, and the organization from a current state to a desired future state. This process depends heavily on buy-in from all staff members, as it requires aligning an organization's people and culture with intended strategic goals. Successful asset management and implementation of the continuous improvement initiatives outlined in this AMP will depend on minimizing resistance to new processes and maximizing engagement of Town staff. Furthermore, staff responsibilities and their designated roles play a crucial part in this management process, as each team member's acceptance and understanding of their job descriptions and task directly influence the overall efficiency and success and desired changes.

The PDCA (Plan-Do-Check-Act) cycle is a four-step management tool widely used for problem solving, process improvement, and change management. Many of the continuous improvement initiatives outlined in this chapter involve the day-to-day processes of Town staff, which will require some aspect of change to occur for successful implementation of initiatives. Figure 6-1 provides an illustration of the PDCA cycle that includes iterative steps, each of which involve specific activities, for which the Town can employ to manage the changes required for implementation of improvement initiatives.

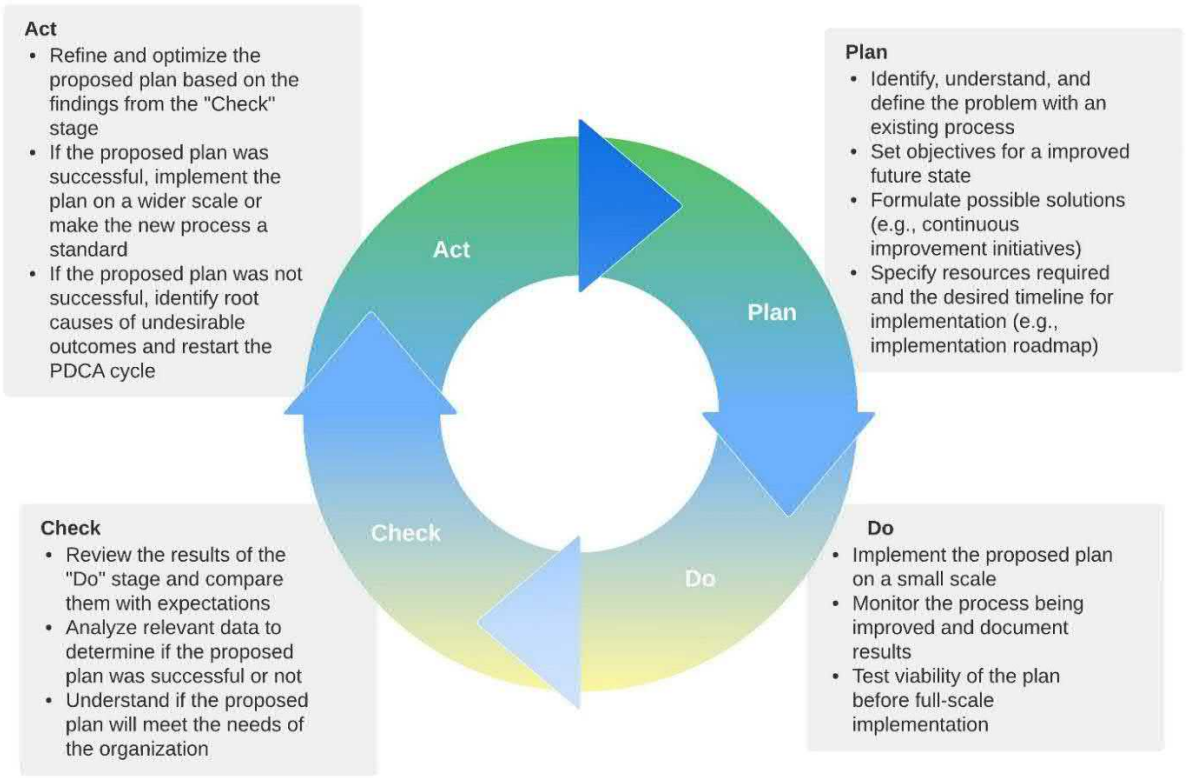


Figure 6-1: The PDCA Cycle

6.2.3 Asset Management Roles & Responsibilities

The roles within the Town that are responsible for the successful delivery and implementation of the AMP are documented in Table 6-2, as first identified in the AMP for Core Infrastructure completed by AECOM in June 2022.

Table 6-2: AM Roles and R**esponsibilities** (AECOM, June 2022)

AM Responsibilities	Council	Senior Leadership	Managers & Directors	Asset Management	GIS	Operations Staff	Finance
Asset Data Collection				■	■	■	
Condition Monitoring & Inspection				■		■	
Levels of Service Measuring & Monitoring			■	■		■	■
Risk Management		■	■	■	■	■	
O&M Program Planning		■	■	■		■	■
Investment Planning (Funding)	■	■	■	■			■
Continuous Improvement		■	■	■			■
Monitor Asset Management Program	■	■	■	■			
Review & Approve AMP	■						

6.2.4 Data Quality Management

Asset Management, as representatives and advocates for asset management at the Town, should work with Operations staff to leverage the knowledge they possess regarding their respective service category and associated assets to verify there are no data gaps (i.e., missing, or incomplete data) in asset inventory data or newly collected condition assessment data. Additionally, quality assurance against the data quality metrics of accuracy, completeness, and validity should be a focus while working with Operations staff, as summarized in Table 6-3.

Table 6-3: Data Quality Metrics

Quality Metric	Description
Accuracy	Asset Management should confirm with Operations staff the asset data collected is correct and provides a true record of the asset or asset element it represents.
Completeness	Asset Management should confirm the asset data collected includes all required attributes.
Validity	Asset Management should confirm the data conforms to all relevant data standards outlined by the Town.
Consistency	Asset Management should confirm the asset data is consistent across all data sources (e.g., same asset IDs between data sources).
Uniqueness	Asset Management should confirm the asset data uses appropriate unique IDs and there is no duplication of asset information within the asset inventory.
Timeliness	Asset Management should confirm inventory data is up to date and insights gained from data are well informed.

6.2.5 Monitor & Review

With a recommended 5-year renewal cycle, the next AMP plan update in 2029 would be based on available asset data as of December 31st, 2028.

Appendix A

Equipment Unit Cost Model

EQUIPMENT COST MODEL SUMMARY				
Department	**Asset Type List**	**Unit Cost**	**EUL**	**Example Asset from Inventory**
Fleet	Fuel Site	$100,000.00	50	Egypt Fuel Site
	Vehicle Lift	$5,000.00	20	2012 BendPak Hoist 2 Post 12K Rotary lift EH2
	Fuel Tank	$10,000.00	20	Used oil storage tank white 500 gallons
	Automotive Specialty Equipment	$7,000.00	10	Coates Rim Clamp Tire changer
Roads	Mobile Construction Vehicle	$200,000.00	20	1982 John Deere Dozer 350C
	Mobile Construction Equipment	$50,000.00	15	1995 Thompson Steamer
	Construction Vehicle Attachments	$15,000.00	15	Woodstumper and grapple Bucket
	Site Furniture	$1,000.00	15	Furniture at the Roads Yard
	Wall-Mounted Water Fountains	$2,500.00	10	Aqualoader Bulk Water station
	Roadway Specialty Signs	$7,000.00	15	Safe Pace Radar signs 100 yellow with brackets (7)
	Gas Detectors	$2,000.00	5	Altair 4X Gas detectors (4) Galaxy GX2 valves (4) Hoses and Drafting Equipment
	Inflatable Boats	$10,000.00	10	Polar 75 Hypalon Orange Rapid Deployment Boat and Rescue sling
	Boilers	$6,000.00	25	Triangle Tube Solo 175 High Efficiency Boiler
	Unit Heaters	$2,000.00	20	Reznor Unit Gas Heater
	General Handheld Equipment	$1,000.00	10	Hand Concrete Grinder
	Handheld Construction Equipment	$5,000.00	10	jumping jack tamper
Water	Leak Detection Equipment	$5,000.00	10	Combiphone Striker; Knocker leak Detection Kit
	Generators	$50,000.00	20	2006 Cummins G0508 6187 Generator gen 2
	Mobile Construction Equipment	$50,000.00	15	Thompson Steamer
	Mobile Traffic Contol Signs	$10,000.00	10	arrow board
	Water Pumps	$2,500.00	10	Water Pump
	Handheld Water Maintenance Equipment	$5,000.00	10	Valve Exerciser
Facilities	Unit Heaters	$2,000.00	20	Mechanical Room Heaters
	Floor Scrubbers	$5,000.00	15	Tennant Floor Scrubber
	Mobile Construction Equipment	$50,000.00	15	Sky Jack Scissor Lift
	Generators	$50,000.00	20	Two Electrogenes Leroy Somer Standby Generators
	HVAC Terminal Units	$2,000.00	25	Fans and Dampers for Ice Rink
	Transformers	$80,000.00	30	Transformer at Animal Shelter Civic Centre Rd
	Rooftop HVAC Units	$20,000.00	30	York Unit 3 ton Roof Top Unit HVAC System (1)
	Tower Base Stations	$150,000.00	50	Tower Base stations and Mobiles
	Light Fixtures	$1,000.00	10	Delviro Titan LED 160 W with snap controller (162 Nos)
	Air Conditioners	$10,000.00	15	Carrier Comfort Air conditioner (1 No); Infinity Modulating Furnace(1 No)
	Ice Resurfacing Machines	$250,000.00	20	Ice Resurfacer olympia
	Ice Edgers	$5,000.00	20	Olympia Ice Edger
Parks	Tower Base Stations	$150,000.00	50	1997 Base Station and Transmitter and Mobiles
	Ice Edgers	$5,000.00	20	1998 Olympia Ice Edger
	Floor Scrubbers	$5,000.00	15	2004 Minuteman Floor Machine
	Mobile Construction Equipment	$50,000.00	15	2000 Snorkel ATB46E Electric Boom Lift
	Sprinkler Systems	$20,000.00	25	GIP Sprinkler System
	Outdoor Condensers	$3,000.00	15	Dectron DSFA-202 Dry O Tron with KVG232 outdoor Condenser
	Outdoor Rink Refridgeration Equipment	$100,000.00	15	Refridgertion of Ice Plant
	Outdoor Rink Seating	$75,000.00	25	Rink Chairs for Pefferlaw Ice Pad
	Ice Resurfacing Machines	$250,000.00	20	Zamboni Ice Resurfacer
	Gas Detectors	$2,000.00	5	Gas Monitoring System M-Controller M-Strobe Electro chemical sensors M-Net Installation
	Dasher Board Rink Systems	$25,000.00	25	Dasher boards for blue pad at Georgina Ice Palace
	Hose Systems	$3,000.00	25	8-100ft snow making hoses - 16- 50ft hoses and couplers
	Site Recreational Installments	$5,000.00	20	Terrain Park rails
	Ski Helmets	$200.00	10	Green Ski helmets and 25 Waveflex black helments
	Carpet Ski Lifts	$40,000.00	25	Carpet Lift at Ski Hill
	Misc. Electronics	$1,000.00	10	Loud Pendant and Ceiling speaker Amplifier Remote control station AV Rack Sennheiser handheld kit
	Ski Hill Lighting	$100,000.00	20	Hill Electrical lighting and Snow system
	Snow Making Equipment	$100,000.00	20	Pumps and Equipment skid for Snow making building
	Security Camera Systems	$25,000.00	20	Security Cameras at ROC
	Construction Vehicle Attachments	$15,000.00	15	Snow Plow Push frames (4)
	Sea Cans	$8,000.00	50	Sea can Containers at ROC (4)
	Office Stationary Equipment	$1,000.00	10	MetrologicOrbit Omini Diret. Scanner (5) Epson Thermal printer (1) APG Series 4000 Cash drawer (1)
	Furniture	$1,000.00	20	Furniture - Blue/Aruba Muskoka Chairs (15 Nos) and 52 INCH Round table with bench (18 Nos.)
	Kitchen Appliances	$1,500.00	15	True 90FT Glass Refrigerated Backbar Cabinet
	Bleachers	$25,000.00	25	Bleachers (27)
	Picnic Tables	$1,500.00	20	Picnic Tables (31)
	Playgrounds	$100,000.00	20	Playground Eqpt. -Bayview Park
	Ride-On Lawn Mowers	$4,500.00	10	Zero turn Mower john deere 997
	Tractors	$25,000.00	15	tractor with loader bucket john deere
	Splash Pad Equipment	$30,000.00	15	Splash pad equipment at Whipper Watson
	Commercial Boilers	$10,000.00	25	De Dietrich Boiler (2 Nos)
	Portable Equipment	$1,000.00	10	Easy-glide Portable Pool Vaccum (2)
	Stationary Illuminated Signs	$8,000.00	25	Illuminated Sign - Stephen Leacock Cultural Centre
	Transformers	$80,000.00	30	Pad-mounted Transformer
	ATVs	$30,000.00	20	2013 Kubota RTV 1100CW ATV and Kubota V4291 72 INCH Blade
	Water Treatment Equipment	$10,000.00	20	Acapulco UV Sanitation System
Recreation and Culture	Snow Guns	$40,000.00	30	SMI SNOW GUN
	Pay and Display Parking Machines	$10,000.00	20	Pay and Display - Willow Wharf
	General Building/Site Equipment	$50,000.00	50	Community Halls Equipments
	Pianos	$3,000.00	10	Roland Piano/Amplifier
	Furnaces	$10,000.00	25	Keeprite 60000BTU 2 stage Furnace - 2T 13 Seer R410A Condensor - ICP 2 1/2 Ton R410A EvaporatorCoil
	Gym Equipment	$50,000.00	20	Gym Equipments
	Portable Generators	$5,000.00	20	John Deere Portable Generator (1)
Administrative Services	Stationary Illuminated Signs	$8,000.00	25	Illuminated LED Signage - Civic Center and light box of Animal Shelter
	Mobile Construction Equipment	$50,000.00	15	Skyjack 19' self propelled Scissor lift truck
	Furniture	$1,000.00	20	Desk for Treasurer s Office
	Misc. Electronics	$1,000.00	10	Wireless handheld and Lavalier Microphones
	Air Conditioners	$10,000.00	15	Air Conditioning Unit at Animal Shelter
Public Works	In-ground Containers	$10,000.00	50	Alfa Maxi Inground Containers (10 Nos)
	Locomotive Monitoring Units	$1,500.00	10	Locomotive Monitoring Unit 4220 HSPA (49 Nos)
Fire and Emergency Services	Fire and Emergency Equipment - General	$5,000.00	10	TNT 3/8 LW C-Cutter
	Misc. Electronics	$1,000.00	10	Minitor V VHF Pagers with battery (29 Nos.)
	Fire Hoses	$500.00	10	Extension Hose 30FT TNT Hydraulic Hose
	Fire Specialty Clothing	$500.00	10	Boots at Keswick Fire Stn
	Tower Base Stations	$150,000.00	50	Tower at Keswick Fire Stn.
	Generators	$50,000.00	20	Generator at Keswick Fire Stn
Library Services	Furniture	$1,000.00	20	Furnitures and materials for Libraries
	HVAC Units	$10,000.00	25	York Affinity HVAC unit with Evaporator coil Expansion valve digital programming thermostat
	Alarm Systems	$25,000.00	20	Panic Alarms and Monitoring systemfor Pefferlaw Library
	Outdoor Light Poles	$8,500.00	30	

Appendix B

Asset Maps

NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF FACILITY ASSETS

FIGURE 1

- Booths
- Community Centers and Halls
- Corporate Offices
- Fire Stations
- Libraries
- Operational Yards
- Park Washrooms
- Picnic Shelters
- Pioneer Village
- Recreational
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary

SCALE 1:81,000

0 0.75 1.5 3 Km

MAP DRAWING INFORMATION:
DATA PROVIDED BY REGIONAL MUNICIPALITY OF YORK AND TOWN OF GEORGINA

MAP CREATED BY: BT
MAP CHECKED BY: CEL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2023-10-16

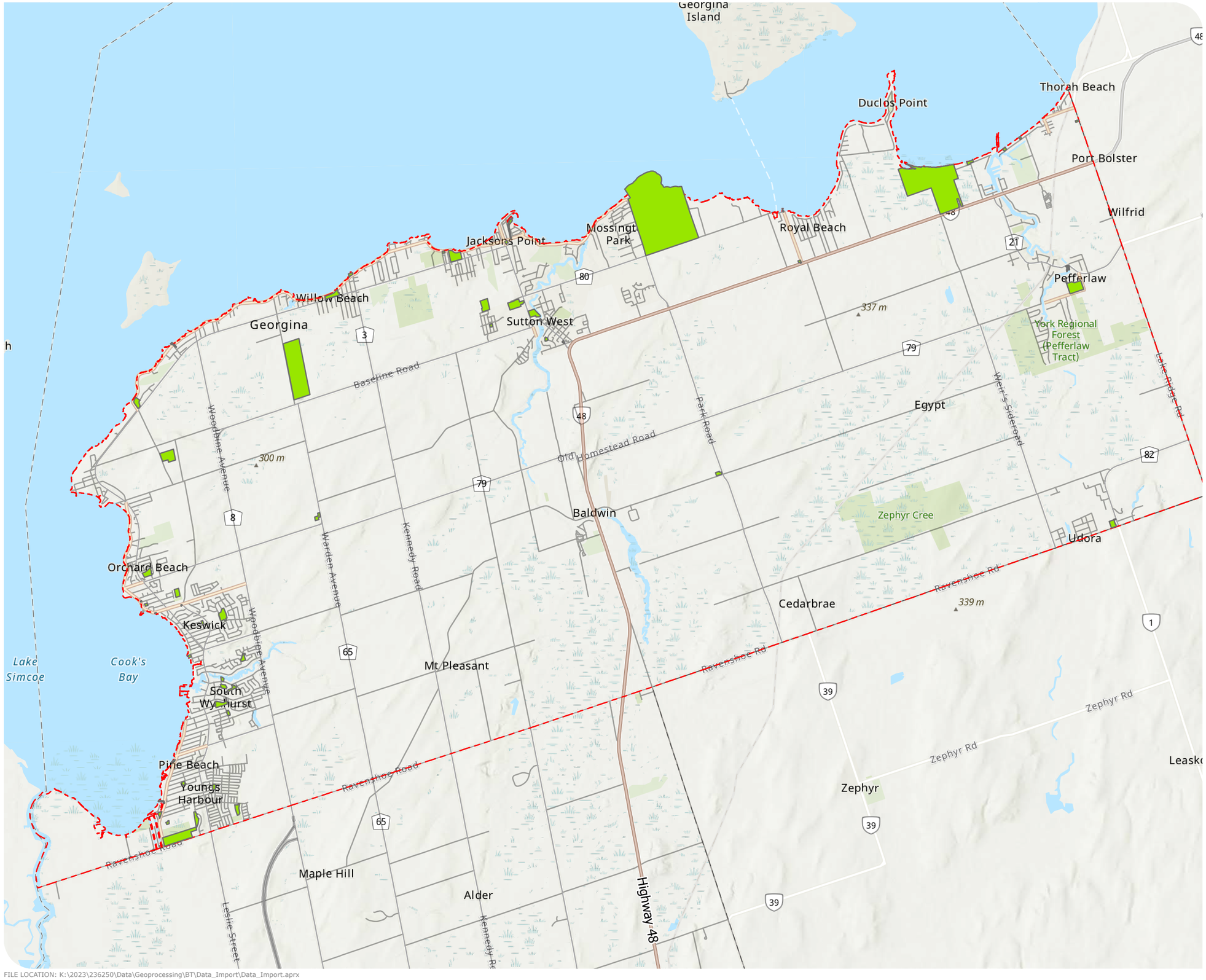
FILE LOCATION: K:\2023\236250\Data\Geoprocessing\BT\Data_Import\Data_Import.aprx

NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF PARKS

FIGURE 2



Parks
Town of Georgina Boundary
Provincial Highway
Arterial Road
Local Roads

SCALE 1:90,000

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NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF MULTI-USE PATHS

FIGURE 3

- Multi-Use Paths
- Town of Georgina Boundary
- Provincial Highway
- Arterial Road
- Local Roads

SCALE 1:90,000

0 1,000 2,000 4,000 m

MAP DRAWING INFORMATION:
DATA PROVIDED BY TOWN OF GEORGINA

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NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF ROADWAY APPURTENANCES

FIGURE 4

- Priority
- Regulatory
- Informational
- Warning
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary

SCALE 1:90,000

0 1,000 2,000 4,000 m

N W E S

MAP DRAWING INFORMATION:
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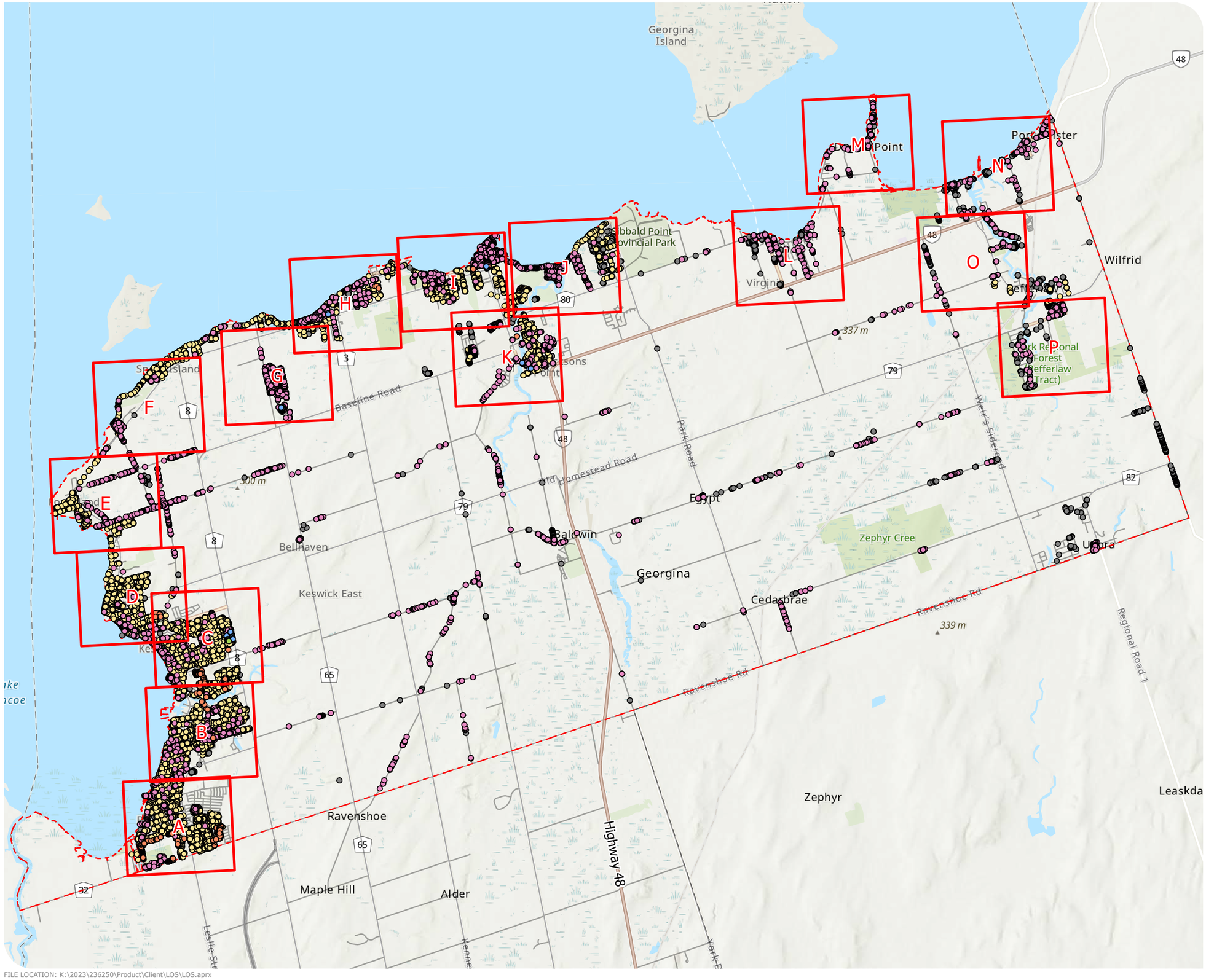

NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Subset Extent
- Town of Georgina Boundary
- Provincial Highway
- Arterial Road
- Local Roads

SCALE 1:90,000

0 1,000 2,000 4,000 m

N W E S

MAP DRAWING INFORMATION:
DATA PROVIDED BY TOWN OF GEORGINA

MAP CREATED BY: BT
MAP CHECKED BY: CEL
MAP PROJECTION: NAD 1983 UTM Zone 17N

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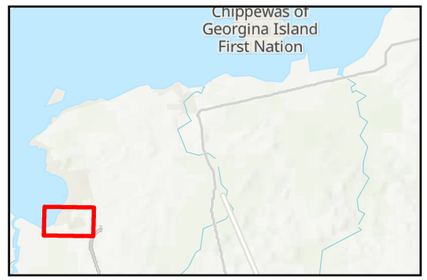
NON-CORE ASSET MANAGEMENT PLAN
TOWN OF GEORGINA

MAP OF URBAN FORESTRY
FIGURE 5A

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



SCALE 1:11,000

0 137.5 275 550 m

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MAP DRAWING INFORMATION:
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MAP CHECKED BY: CEL
MAP PROJECTION: NAD 1983 UTM Zone 17N

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DATE: 2024-03-28

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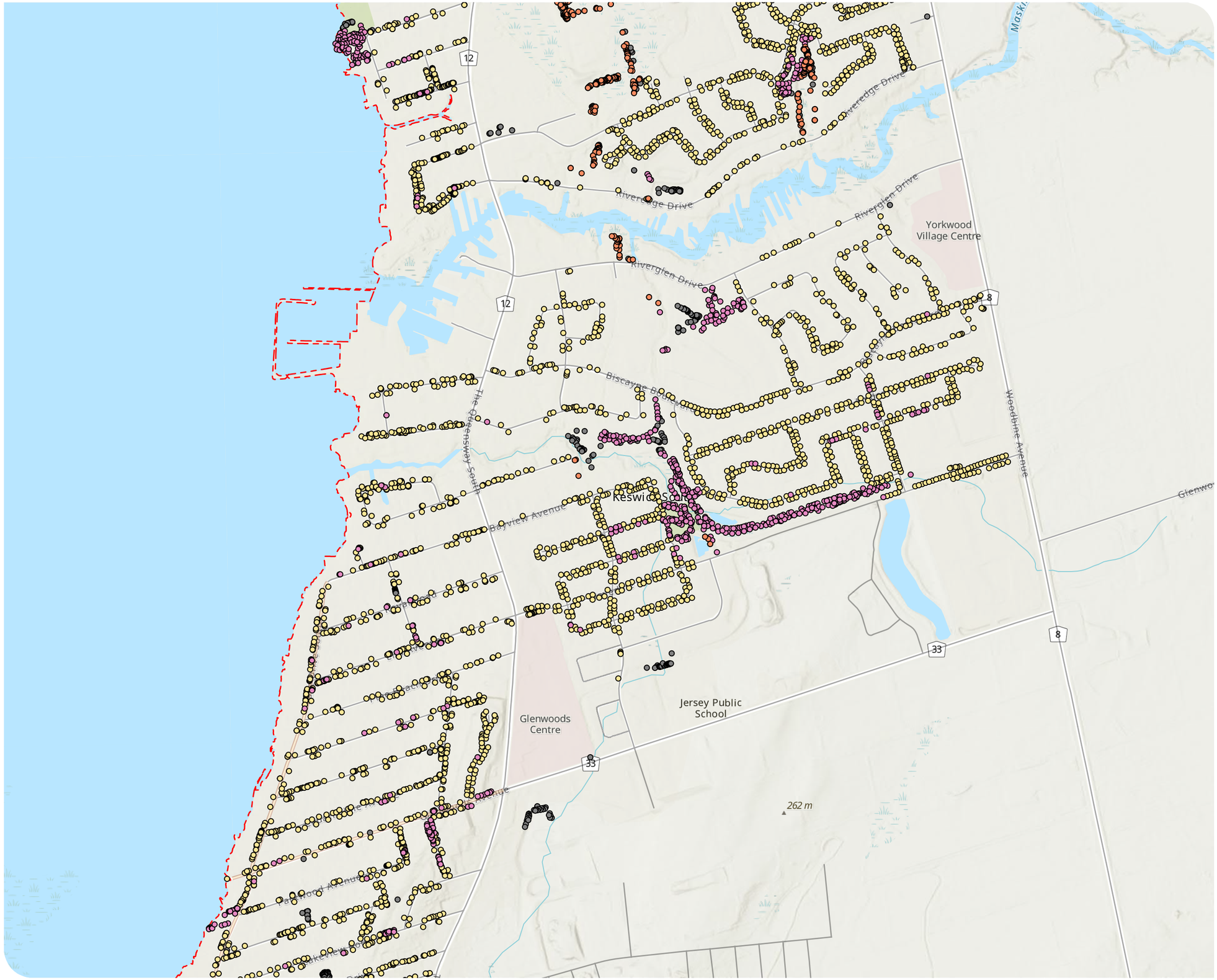


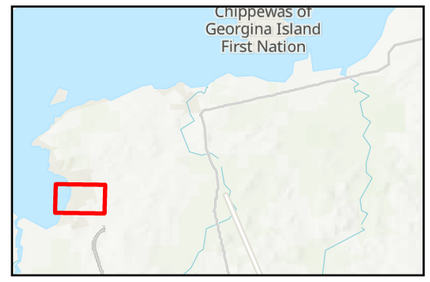
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5B

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



SCALE 1:11,000

0 137.5 275 550 m

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MAP DRAWING INFORMATION:
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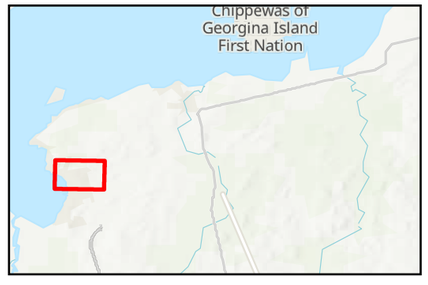
STATUS: DRAFT
DATE: 2024-03-28

FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

NON-CORE ASSET MANAGEMENT PLAN
TOWN OF GEORGINA

MAP OF URBAN FORESTRY
FIGURE 5C

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



SCALE 1:11,000

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MAP DRAWING INFORMATION:
DATA PROVIDED BY TOWN OF GEORGINA

MAP CREATED BY: BT
MAP CHECKED BY: CEL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

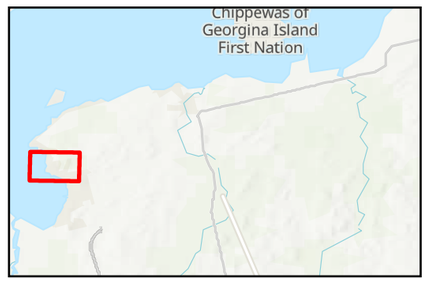
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5D

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



SCALE 1:11,000

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MAP DRAWING INFORMATION:
DATA PROVIDED BY TOWN OF GEORGINA

MAP CREATED BY: BT
MAP CHECKED BY: CEL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 23-6250

STATUS: DRAFT

DATE: 2024-03-28

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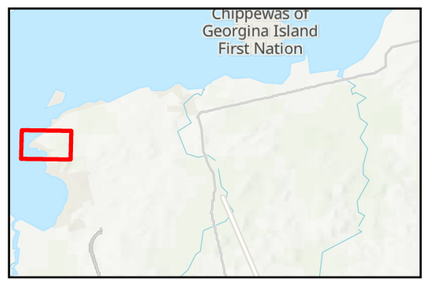
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5E

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

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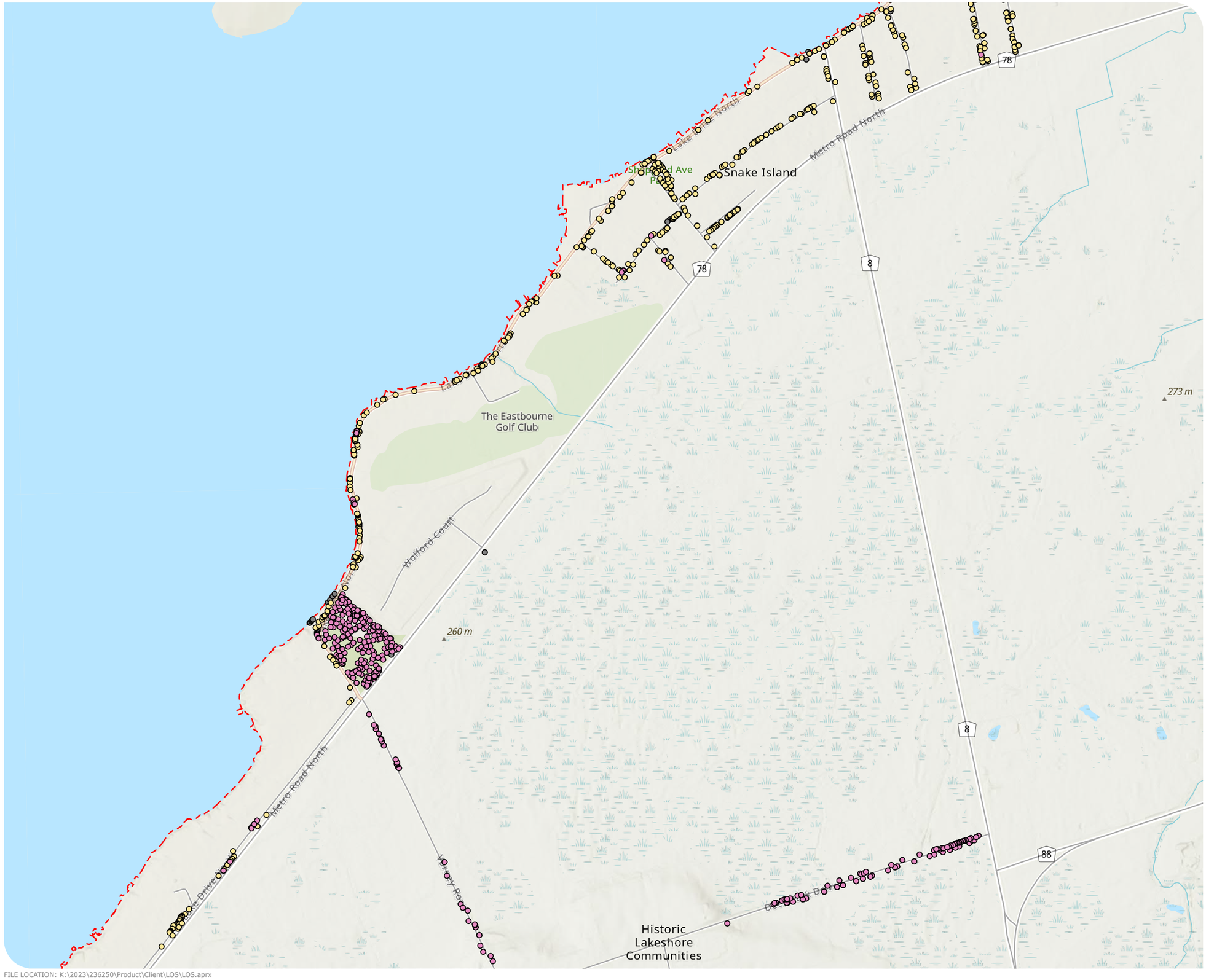
NON-CORE ASSET MANAGEMENT PLAN

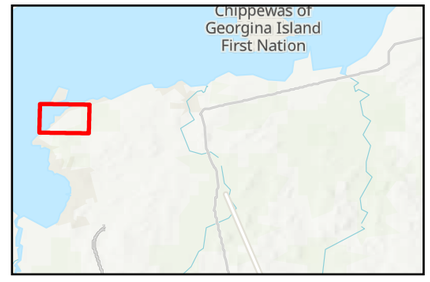
TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5F



- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
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FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5G

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary

SCALE 1:11,000

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MAP DRAWING INFORMATION:
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MAP CREATED BY: BT
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DILLON CONSULTING

PROJECT: 23-6250
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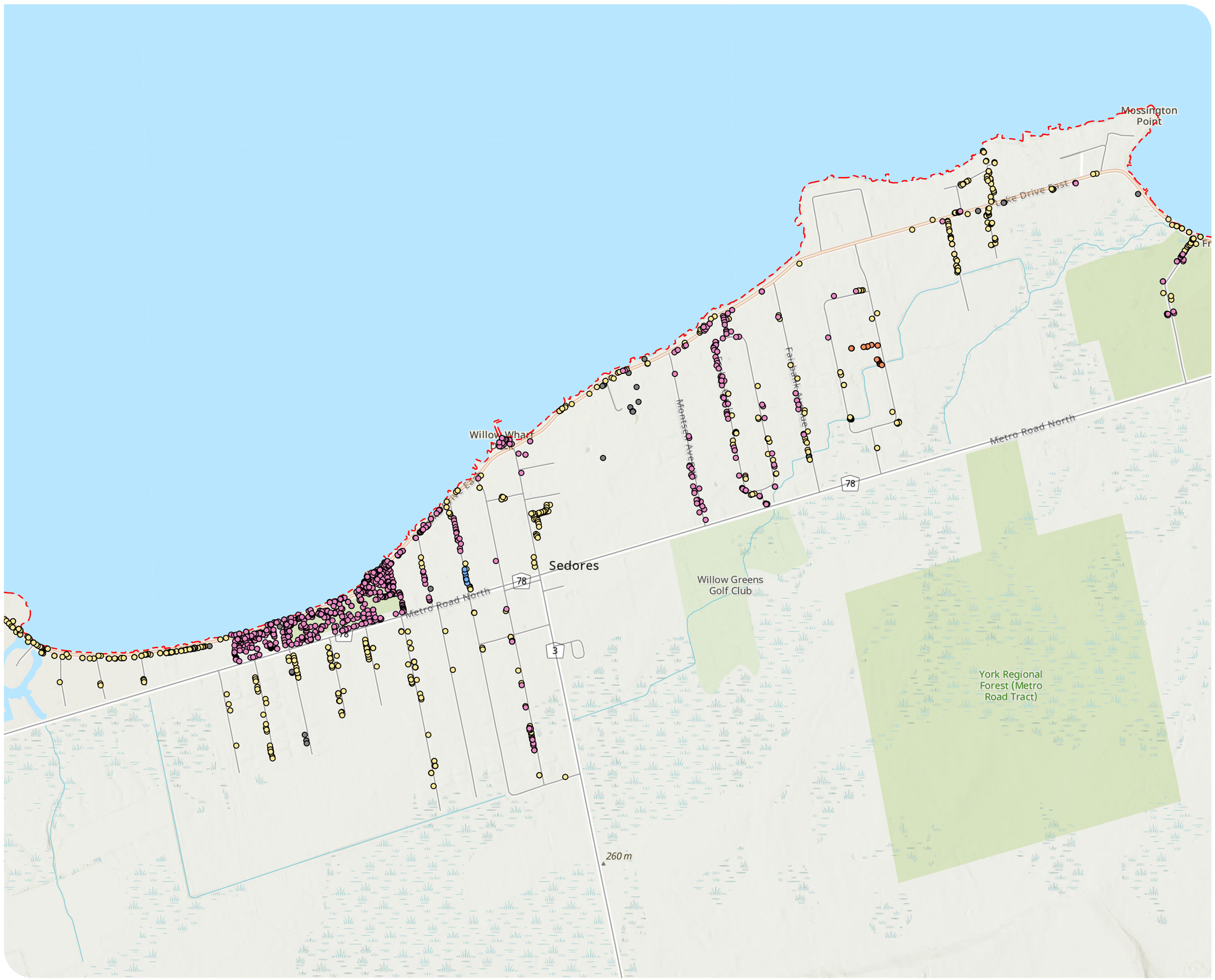
FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

NON-CORE ASSET MANAGEMENT PLAN

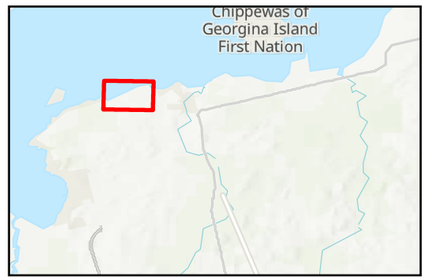
TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5H



- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

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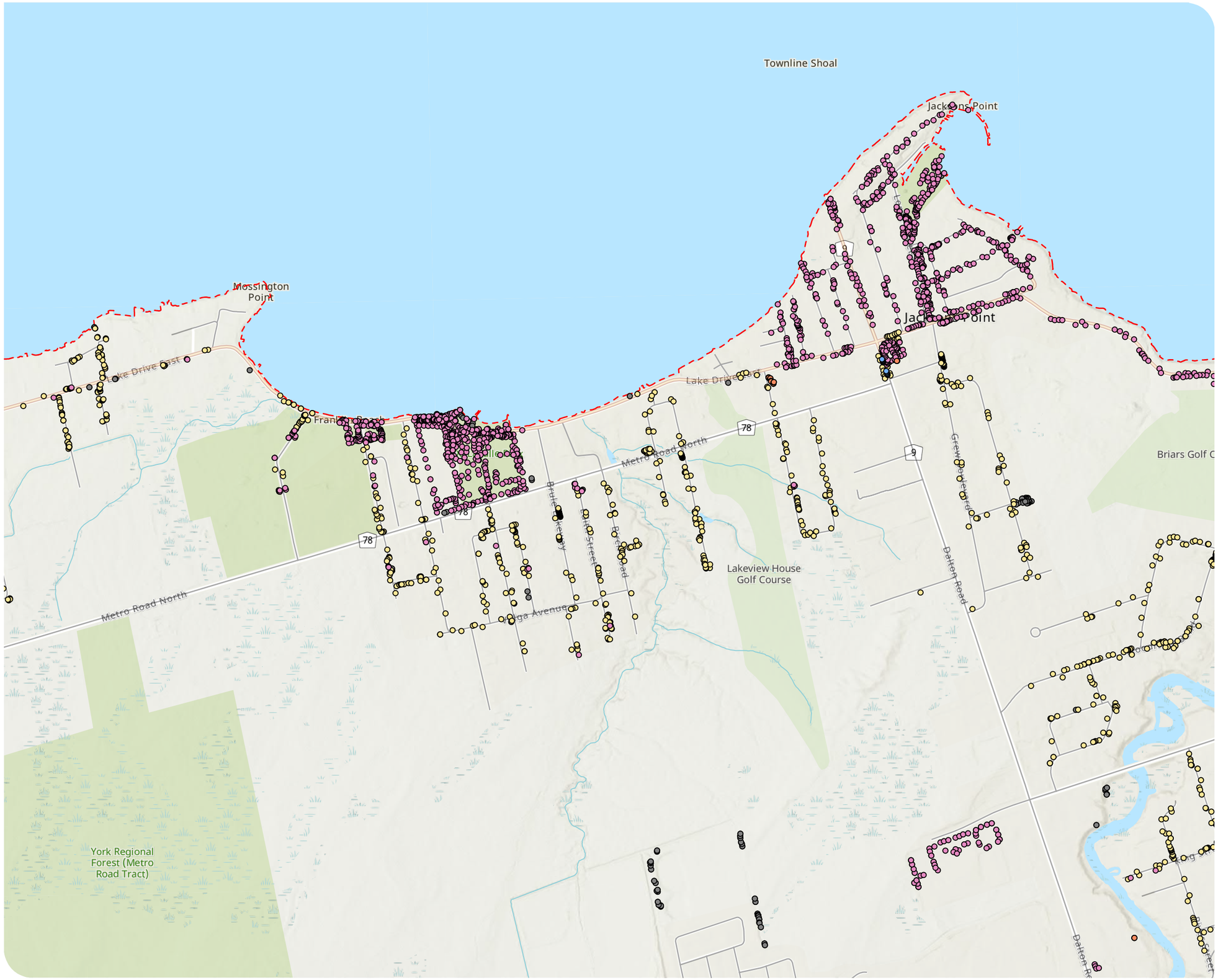
NON-CORE ASSET MANAGEMENT PLAN

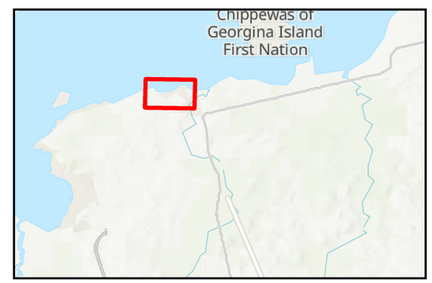
TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5I



- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

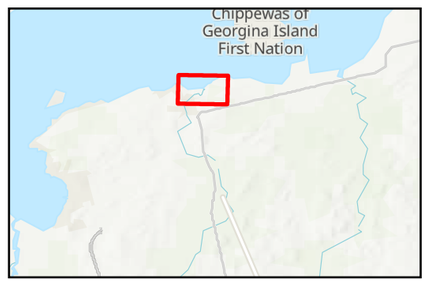
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5J

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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MAP DRAWING INFORMATION:
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PROJECT: 23-6250
STATUS: DRAFT
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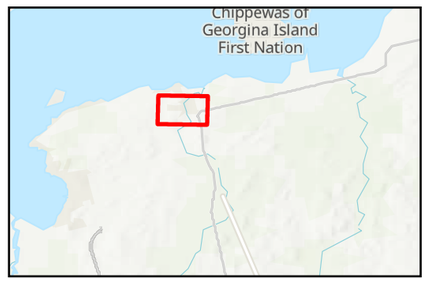
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5K

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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MAP DRAWING INFORMATION:
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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5L

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary

SCALE 1:11,000

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MAP DRAWING INFORMATION:
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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
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FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

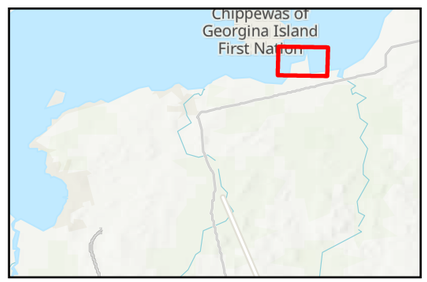
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5M

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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MAP CHECKED BY: CEL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

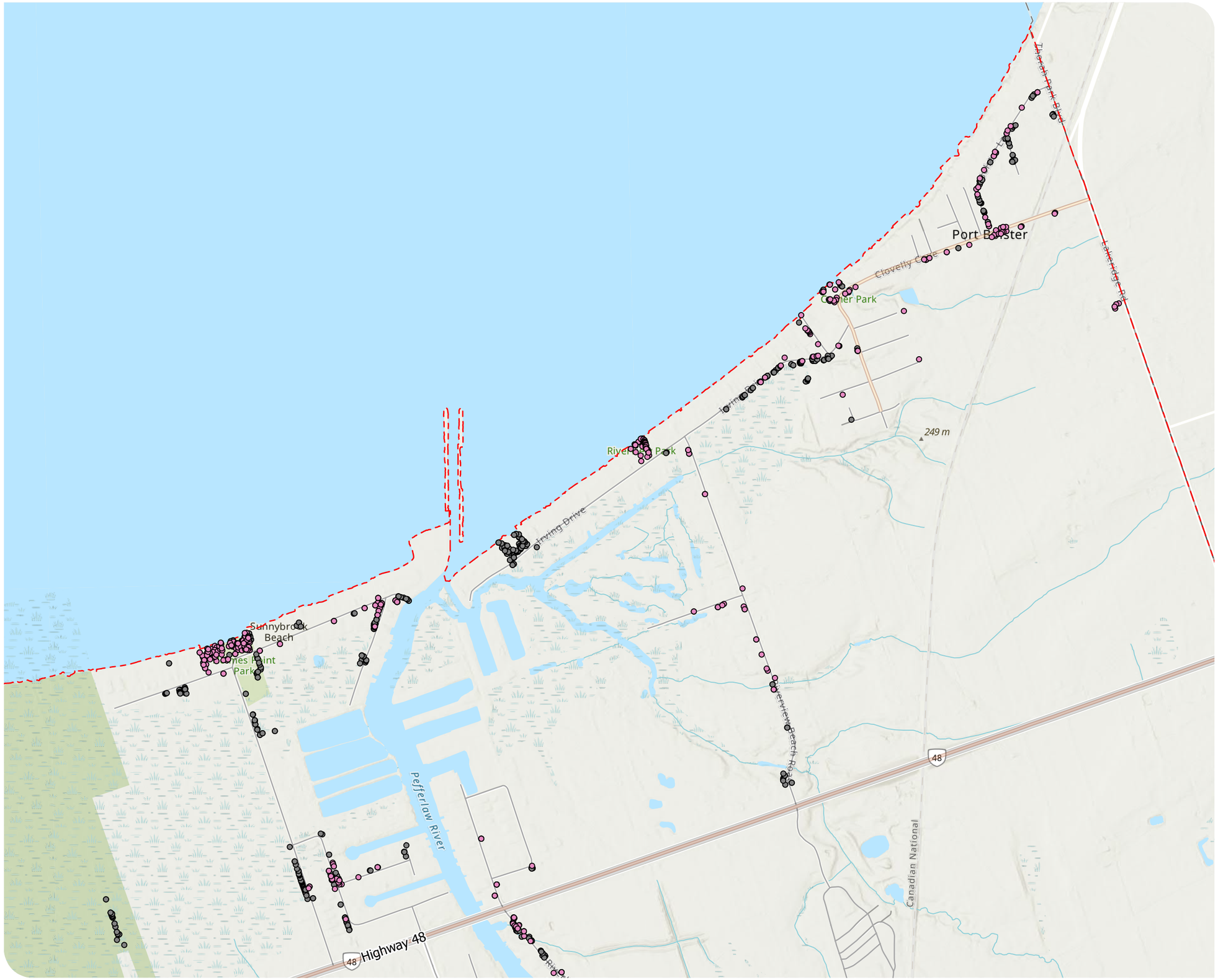
FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

NON-CORE ASSET MANAGEMENT PLAN

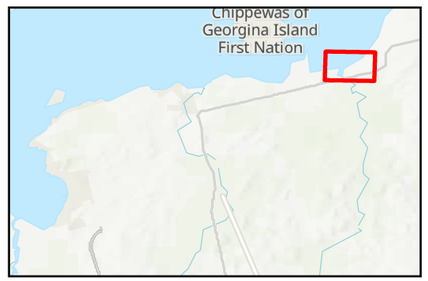
TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5N



- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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PROJECT: 23-6250
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DATE: 2024-03-28

FILE LOCATION: K:\2023\236250\Product\Client\LOS\LOS.aprx

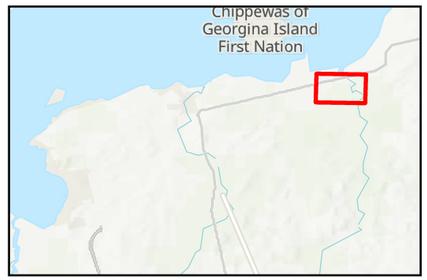
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5O

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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DILLON CONSULTING

PROJECT: 23-6250
STATUS: DRAFT
DATE: 2024-03-28

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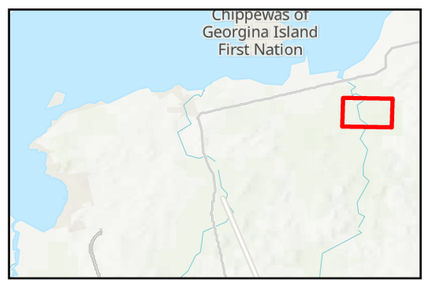
NON-CORE ASSET MANAGEMENT PLAN

TOWN OF GEORGINA

MAP OF URBAN FORESTRY

FIGURE 5P

- Median
- Open/Unrestricted
- Raised/Planted
- Tree Lawn
- Woodlot
- Other
- Provincial Highway
- Arterial Road
- Local Roads
- Town of Georgina Boundary



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DILLON CONSULTING

PROJECT: 23-6250

STATUS: DRAFT

DATE: 2024-03-28

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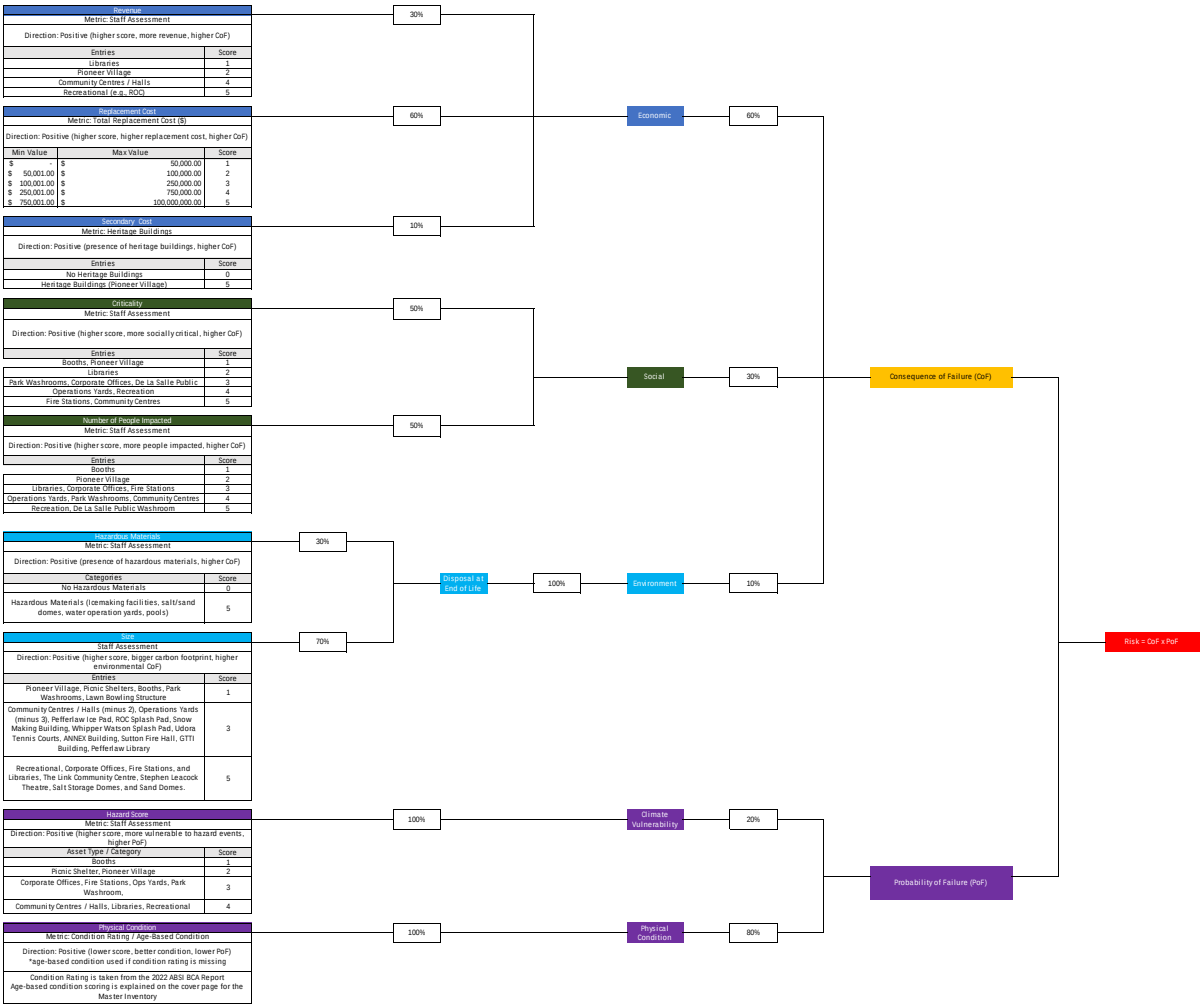
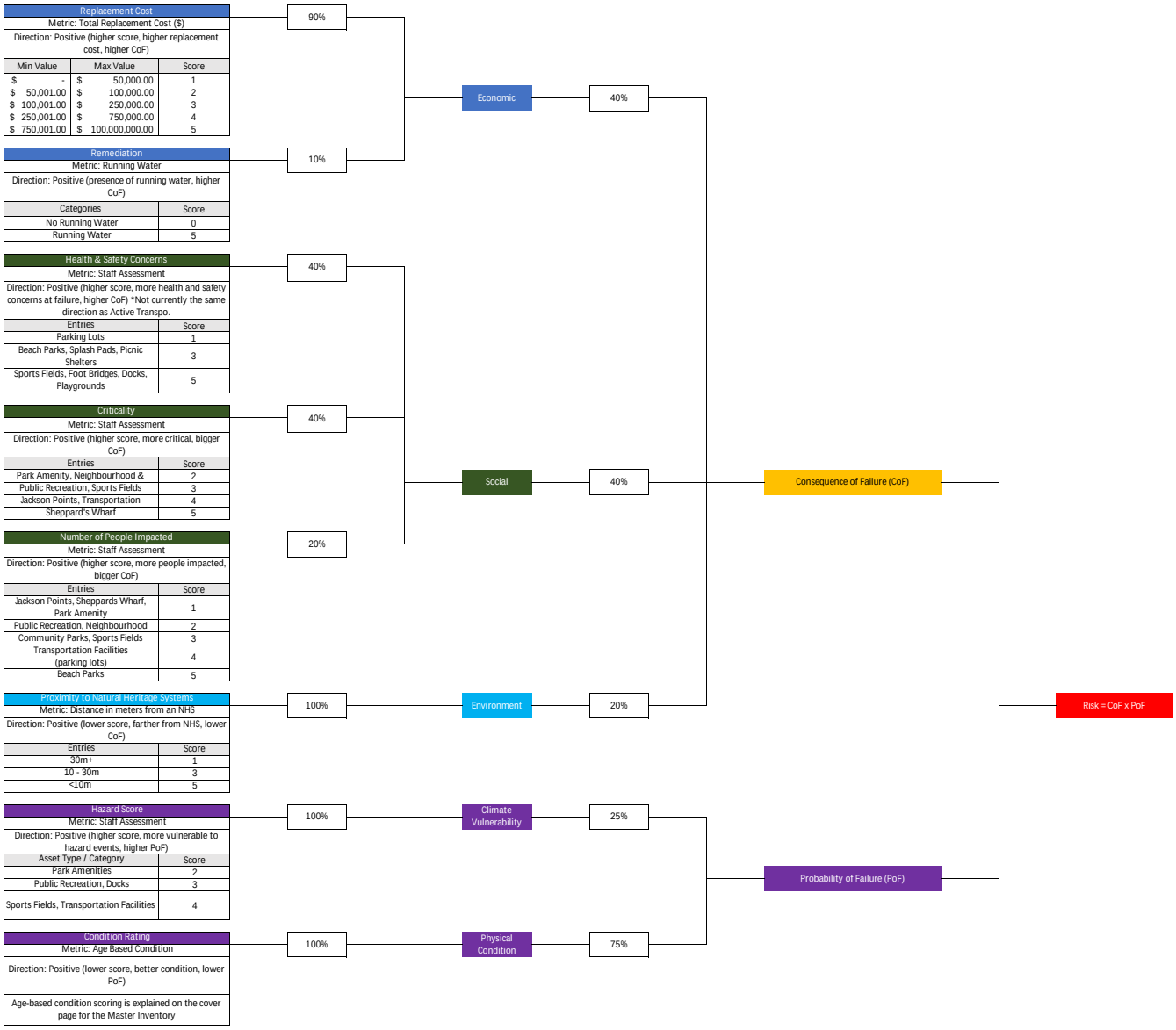
Appendix C

Conceptual Risk Models

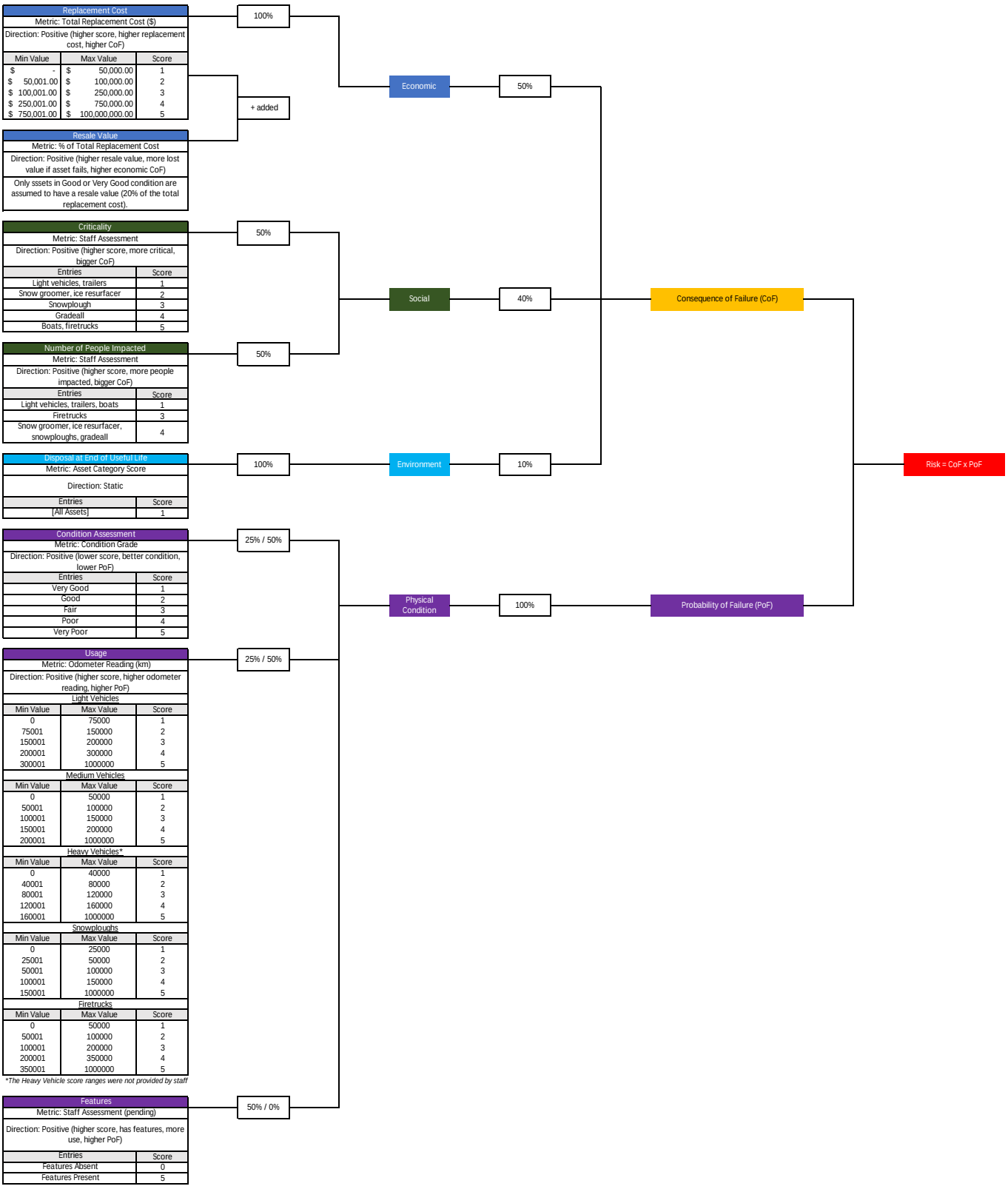
Facilities Assets



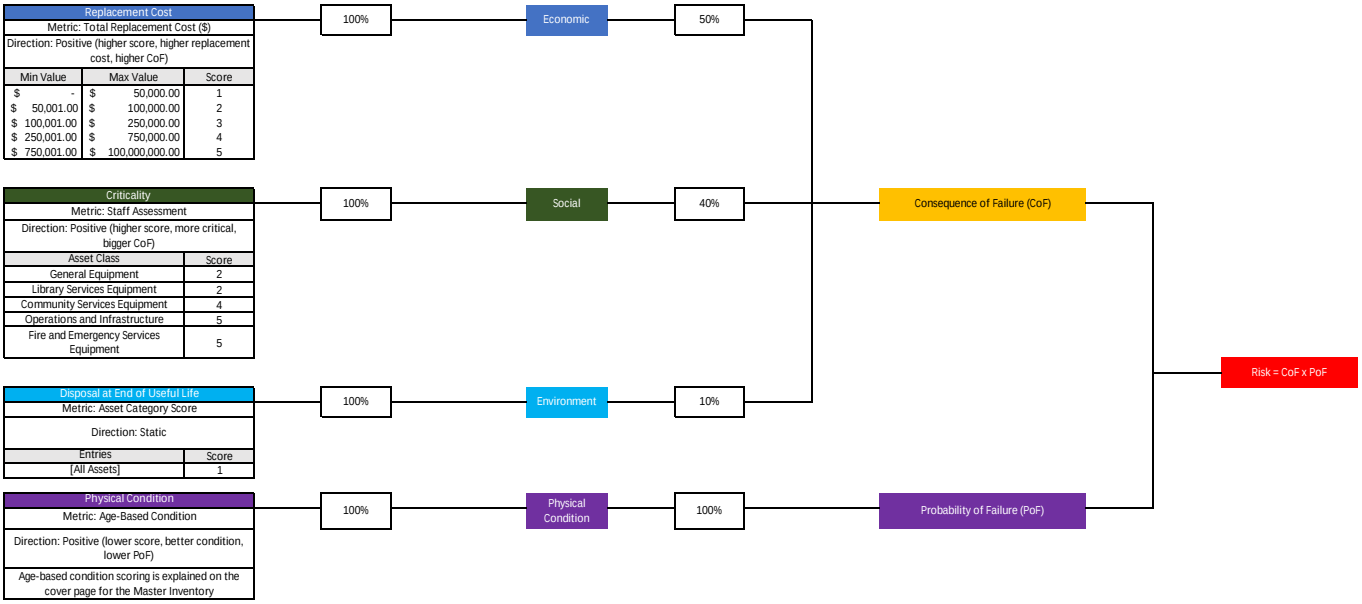
Parks Assets



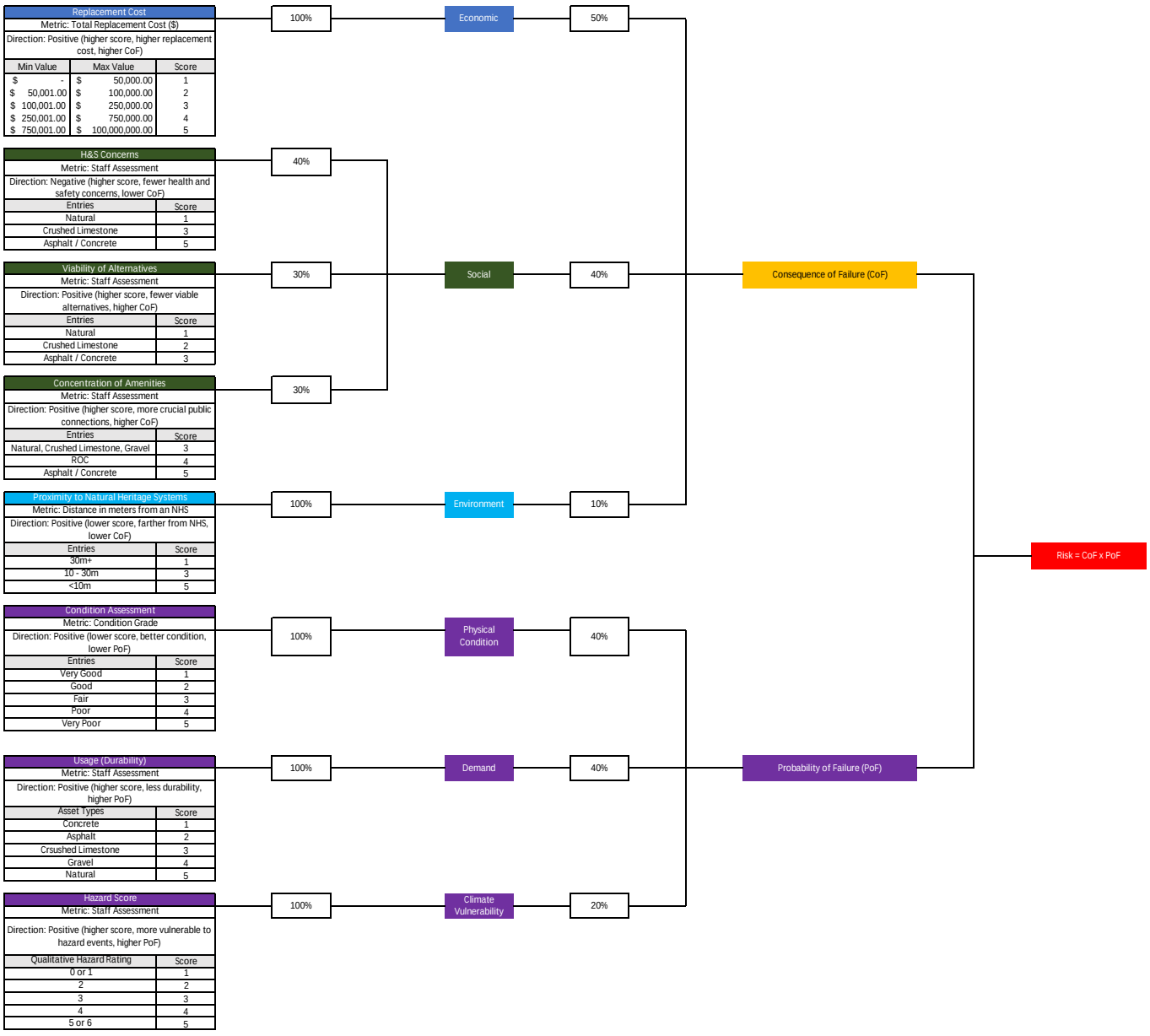
Fleet Assets



Equipment Assets



Multi-Use Paths



Road Appurtenances Assets

Replacement Cost
Metric: Total Replacement Cost ($)
Direction: Positive (higher score, higher replacement cost, higher CoF)

Min Value	Max Value	Score
$ -	$ 50,000.00	1
$ 50,001.00	$ 100,000.00	2
$ 100,001.00	$ 250,000.00	3
$ 250,001.00	$ 750,000.00	4
$ 750,001.00	$ 100,000,000.00	5

20%

Secondary Cost
Metric: Staff Assessment (Legal Liability)
Direction: Positive (higher score, faulty or missing sign has the potential to cause a larger accident, higher legal fees, higher economic CoF)

Entries	Score
Informational Signs	1
Warning Signs	2
Regulatory Signs	3
Priority Signs	5

80%

Economic — 40%

Criticality
Metric: Staff Assessment
Direction: Positive (higher score, more socially critical, higher CoF)

Entries	Score
Informational Signs	1
Warning Signs	2
Regulatory Signs	3
Priority Signs	4
STOP Signs	5

50%

Number of People Impacted
Metric: Staff Assessment
Direction: Positive (higher score, more people impacted, higher CoF)

Entries	Score
[Else]	3
Lake Dr. East / North / South	5

50%

Social — 50%

Proximity to Natural Heritage Systems
Metric: Distance in meters from an NHS
Direction: Positive (lower score, farther from NHS, lower CoF)

Entries	Score
30m+	1
10 - 30m	3
<10m	5

100%

Environment — 10%

Condition Rating
Metric: Condition Rating
Direction: Positive (lower score, better condition, lower PoF)

Condition Rating	Score
1	1
2	2
3	3
4	4
5	5

100%

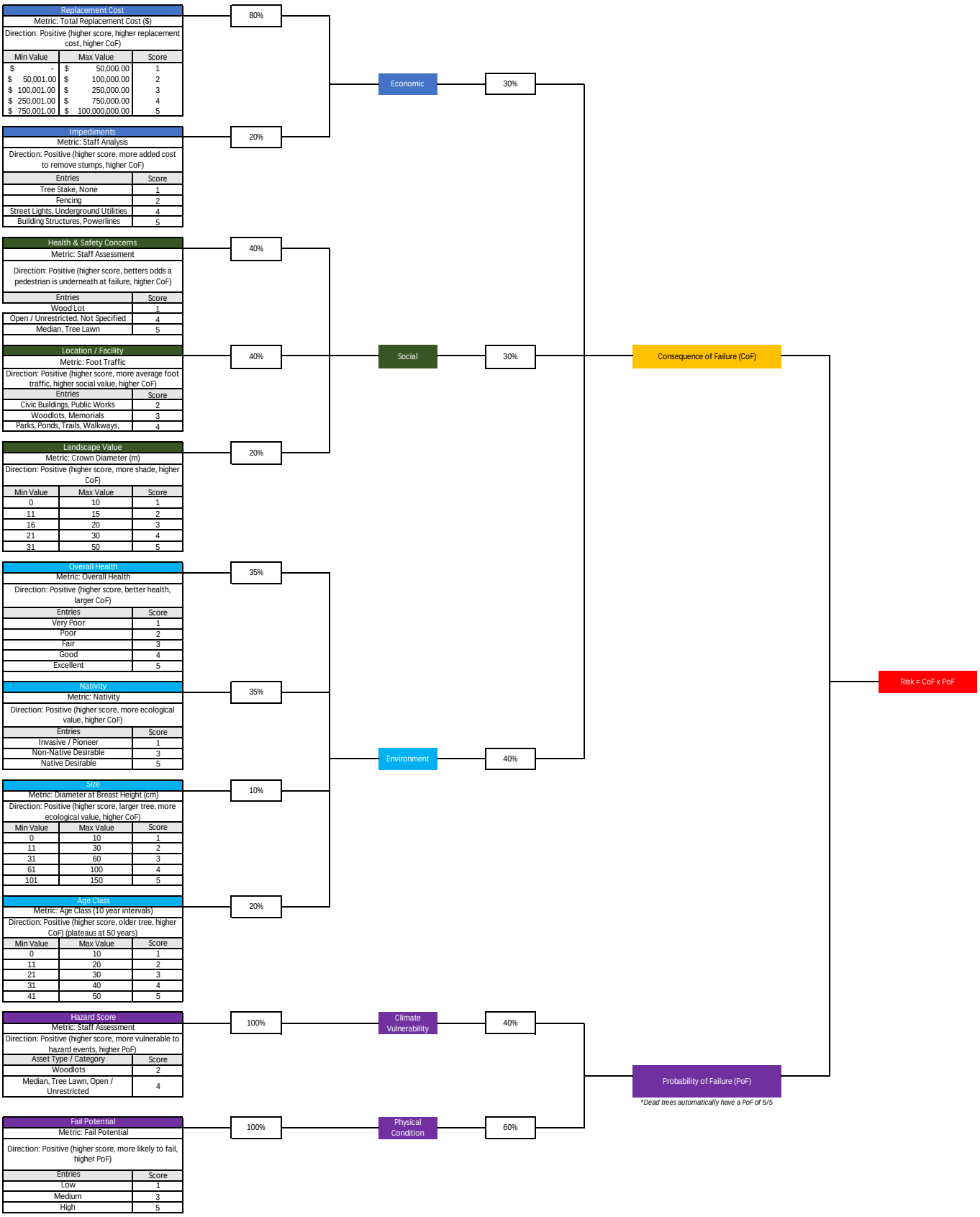
Physical Condition — 100%

Consequence of Failure (CoF)

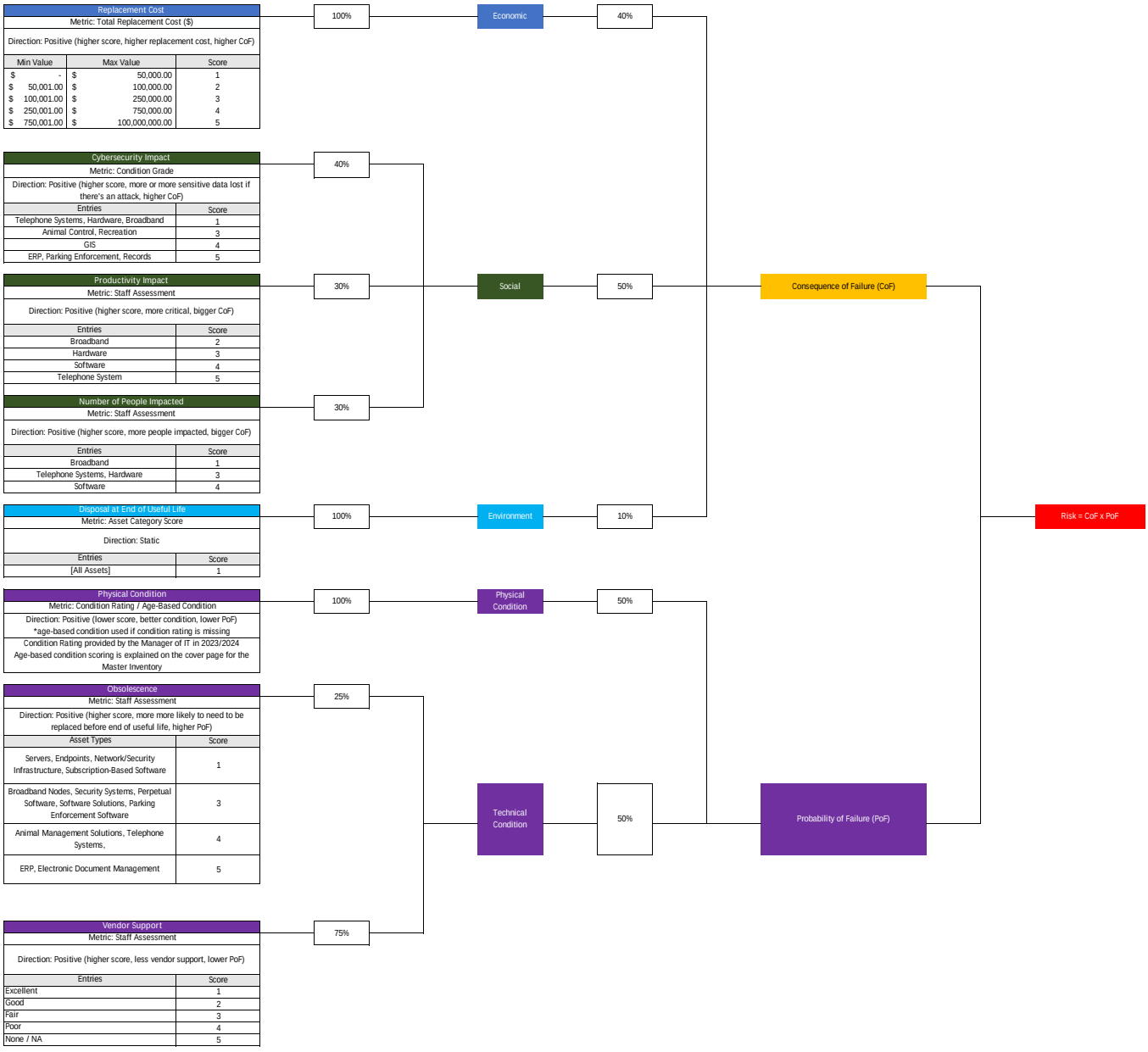
Probability of Failure (PoF)

Risk = CoF x PoF

Urban Forestry Assets



IT Assets


Replacement Cost
Metric: Total Replacement Cost ($)
Direction: Positive (higher score, higher replacement cost, higher CoF)
Min Value | Max Value | Score
$ - | $ 50,000.00 | 1
$ 50,001.00 | $ 100,000.00 | 2
$ 100,001.00 | $ 250,000.00 | 3
$ 250,001.00 | $ 750,000.00 | 4
$ 750,001.00 | $ 100,000,000.00 | 5
100%
Economic
40%
Cybersecurity Impact
Metric: Condition Grade
Direction: Positive (higher score, more or more sensitive data lost if there's an attack, higher CoF)
Entries | Score
Telephone Systems, Hardware, Broadband | 1
Animal Control, Recreation | 3
GIS | 4
ERP, Parking Enforcement, Records | 5
40%
Productivity Impact
Metric: Staff Assessment
Direction: Positive (higher score, more critical, bigger CoF)
Entries | Score
Broadband | 2
Hardware | 3
Software | 4
Telephone System | 5
30%
Number of People Impacted
Metric: Staff Assessment
Direction: Positive (higher score, more people impacted, bigger CoF)
Entries | Score
Broadband | 1
Telephone Systems, Hardware | 3
Software | 4
30%
Social
50%
Consequence of Failure (CoF)
Disposal at End of Useful Life
Metric: Asset Category Score
Direction: Static
Entries | Score
[All Assets] | 1
100%
Environment
10%
Physical Condition
Metric: Condition Rating / Age-Based Condition
Direction: Positive (lower score, better condition, lower PoF)
*age-based condition used if condition rating is missing
Condition Rating provided by the Manager of IT in 2023/2024
Age-based condition scoring is explained on the cover page for the Master Inventory
100%
Physical Condition
50%
Obsolescence
Metric: Staff Assessment
Direction: Positive (higher score, more more likely to need to be replaced before end of useful life, higher PoF)
Asset Types | Score
Servers, Endpoints, Network/Security Infrastructure, Subscription-Based Software | 1
Broadband Nodes, Security Systems, Perpetual Software, Software Solutions, Parking Enforcement Software | 3
Animal Management Solutions, Telephone Systems, | 4
ERP, Electronic Document Management | 5
25%
Technical Condition
50%
Probability of Failure (PoF)
Vendor Support
Metric: Staff Assessment
Direction: Positive (higher score, less vendor support, lower PoF)
Entries | Score
Excellent | 1
Good | 2
Fair | 3
Poor | 4
None / NA | 5
75%
Risk = CoF x PoF

Appendix D

Condition Assessment Plans

Condition Assessment Plan - Facilities

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential maintenance needs related to building or facility asset elements.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related safety risks.
- Identify and mitigate or eliminate health & safety concerns to ensure buildings and facilities are safe for use.
- Understand asset needs and prioritize corresponding investment.
- Identify and address violations of the Ontario Building Code Act, as applicable.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Average Condition Rating of Building Elements
  - Percentage of Facilities that are compliant to Accessibility for Ontarians with Disabilities (AODA) act standards
  - Number of accessible parking spots

Quantity

How many assets should be assessed?

- There is a total of 83 buildings in the Facilities service category.

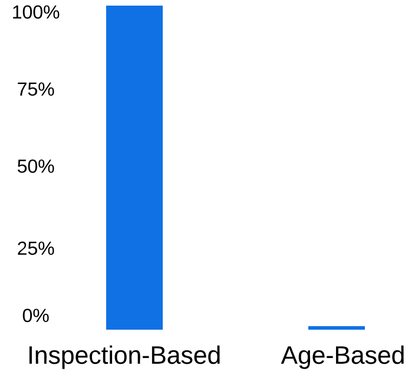
Levels of Service (LOS)

What are the specific LOS objectives?

- Quality & Availability: Facilities are fit for purpose and serve the needs of the community to provide safe, reliable, and well-maintained service. Accessibility access is provided to and within facilities.

Corporate Offices, Community Centres and Halls, Fire Stations, Pioneer Village, Libraries, Park Washrooms, Picnic Shelters, Recreational, Booths, Operations Yards

Asset Condition Data



Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Buildings are complex assets comprised of various elements that are often categorized into civil, mechanical, electrical, and architectural disciplines.
- Experts within each discipline are able to advise on specific signs of deterioration.
- In general, notable signs of deterioration include cracks, deformation, corrosion, damage from abrasion or other external influences (e.g., water damage), and missing or incomplete components.

Frequency / Cost

- Annual condition assessments of 20% of the building asset inventory is recommended starting with the oldest building assets.
- A budgetary unit cost of $2,400 per 1,000 Sq. Ft. should be employed for condition assessments of buildings.
- The Town's existing building asset inventory totals approximately 700,000 Sq. Ft., translating to a total condition assessment cost of approximately $1.7 million. With annual condition assessments of 20% of the building asset inventory, estimated cost is approximately $336,000 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Detailed condition assessments such as Building Condition Assessments (BCAs) or Facility Condition Assessments (FCAs). These typically involve the procurement of a qualified consultant.
- BCAs and FCAs include inspections of individual building or facility elements, as defined by ASTM UNIFORMAT II Standard E1557-97 Level 3, by a multi-disciplinary team of structural, mechanical, electrical, and civil engineers. Inspections should be focused on evaluating the condition and performance of specific elements. Observations for each element should be compiled by the inspection team including recommendations for required maintenance, rehabilitation, and replacement of elements. Associated costing and a summary of Ontario Building Code Act violations should also be provided, as applicable.
- Condition assessment information may also be updated by Town staff for specific building elements while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information including the use of ArcGIS-based applications such as Survey 123.
- Regular Health and Safety inspections are also completed by Town staff.

Comments

- The Town commissioned the completion of Building Condition Assessments (BCAs) for 80 building assets in 2022. As a result, building asset condition information informing this AMP was up to date for the majority of building assets.
- Two (2) building assets, the Multi-Use Recreation Complex (MURC) and the Georgina Replacement Civic Centre (GRCC), in the Town's building asset inventory are excluded from the "Asset Condition Data" charts as they are new or future assets and condition assessments were not possible. Additionally, only one (1) of the buildings in the building asset portfolio does not have condition assessment data, the Pefferlaw Fire Station (excluding the administration building on the same site).

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the building element inventory such as element quantity, material, age, condition, and replacement cost.
- The cost to complete a condition assessment will vary depending on the size and charecteristics of each building asset. Costing outlined in this condition assessment plan should be considered for high-level budgetary purposes only.

Condition Assessment Plan - Parks

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential maintenance needs related to neighbourhood and community parks, outdoor sports facilities, park amentities, and parking areas.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related health & safety risks.
- Understand asset needs and prioritize corresponding investment.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Overall Average Park Condition

Quantity

How many assets should be assessed?

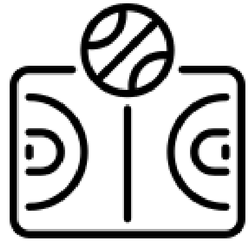
- There is a total of 44 neighbourhood parks, 11 community parks, 52 sports fields (including outdoor courts), 47 parking areas, and 73 park amentity assets in the Parks service category.
- Neighbourhood and Community Parks, as inventoried, consist of primarily open space and do not require condition assessments.
- It is important to note that playground equipment/play structures are inventoried under the Equipment service category. Specific details for playgrounds/play structures can be found in the condition assessment plan for Equipment.

Levels of Service (LOS)

What are the specific LOS objectives?

- Quality & Availability: Park assets in a state of good repair to provide reliable services to the community.

Public Recreation, Sports Fields, Transportation Facilities, Park Amentities



Asset Condition Data

Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Specific distresses will vary depending on the type of asset. In general, signs of deterioration include broken or missing components, corrosion, and reduced operation.
- For hard surfaces including sports courts and parking areas, distresses may include cracks, crumbling, and/or potholes.
- For loose surfaces such as natural sports fields, distresses may include deformation of the playing surface or overgrown vegetation.

Frequency / Cost

- Annual condition assessments of 20% of the inventory is recommended starting with the oldest Parks assets.
- A budgetary unit cost of $5,000 per asset should be employed for visual condition assessments of parks, sports fields (and courts), park amentities, and parking areas.
- The Town's existing Parks asset inventory totals 172 assets excluding open space, translating to a total condition assessment cost of approximately $860,000. With annual condition assessments of 20% of the building asset inventory, estimated cost is approximately $172,000 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Visual condition assessments are the preferred methodology to assess the condition of Parks assets and may be completed by Town staff or through procurement of a qualified consultant. Visual condition assessments should involve assigning condition ratings using the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor. A summary of inspection team observations, recommendations, and associated costing for recommendations should also be included.
- Age-based methods may also be employed for assessing Parks asset conditions. To conduct age-based condition assessments, maintaining Parks asset inventory information will be a top priority. Parks asset inventory information should be maintained for accuracy, completeness, and validity. Inventory information may be updated by Town staff for Parks assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information incuding the use of ArcGIS integrated applications such as Survey 123 or Field Maps.

Comments

- The construction years are currently known for 170 of the 177 Parks assets (96%) allowing for an age-based condition assessment to be completed in the absence of condition assessment data.

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the Parks asset inventory such as quantity, material, age, condition, and replacement cost.
- The cost to complete a condition assessment will vary depending on the size and charecteristics of each asset. Costing outlined in this condition assessment plan should be considered for high-level budgetary purposes only.

Condition Assessment Plan - Fleet

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential maintenance needs related to fleet assets.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related safety risks.
- Understand asset needs and prioritize corresponding investment.
- Met requirements set forth by the Province of Ontario for commercial vehicles, including daily inspections prior to use.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Overall Average Fleet Condition

Quantity

How many assets should be assessed?

- There is a total of 122 assets in the Fleet service category.
- All Fleet assets may be assessed during a condition assessment event.

Levels of Service (LOS)

What are the specific LOS objectives?

- Quality & Reliability: Provide reliable fleet to meet the needs of the user.

Light Vehicles, Heavy Vehicles, Trailers, Boats

Asset Condition Data

Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Indicators that Fleet assets have deteriorated can include broken or missing components, increasing maintenance requirements, damage from collisions, corrosion, and/or persistant warning lights.

Frequency / Cost

- Daily inspections of commercial vehicles should be completed prior to use based on an established checklist.
- Annual condition assessments of all Fleet assets is recommended.
- A budgetary unit cost of $150 per asset should be employed for condition assessments of fleet assets, based on the average cost of a motor vehicle inspection (MVI) with contingency for assessment of heavy vehicles and boats.
- The Town's existing building asset inventory totals 122 assets, translating to a total condition assessment cost of approximately $18,300 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Visual condition assessments may be completed by Town staff. Visual condition assessments should involve assigning condition ratings using the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor. In general, assessments should include visually inspecting all components of Fleet assets typically inspected during MVIs including brakes, steering and suspension, tires and wheels, lighting, horn, windshield and windows, and vehicle body or structure.
- Condition assessment information may also be updated by Town staff for fleet assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information such as ArcGIS integrated application Survey 123.
- Due to the relatively short expected useful life of some Fleet assets in comparison to other asset categories, the Town should prioritize tracking of new assets into the asset inventory and removal of assets no longer in use as age-based condition assessment is also a practical option.

Comments

- To conduct age-based condition assessments, maintaining Fleet asset inventory information will be a top priority. Fleet asset inventory information should be maintained for accuracy, completeness, and validity. Inventory information may be updated by Town staff for Fleet assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information.

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the Fleet asset inventory such as make, model, age, mileage, condition, and replacement cost.

Condition Assessment Plan - Equipment

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential problems related to equipment assets.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related safety risks.
- Understand asset needs and prioritize corresponding investment.
- For all playground equipment, meet standards set forth by the Canadian Standards Association, specifically CSA Z614-20 Children's Playground Equipment and Surfacing.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Overall Average Equipment Condition

Quantity

How many assets should be assessed?

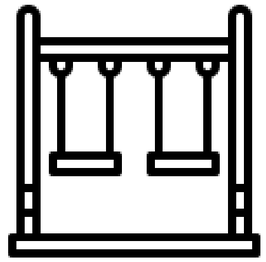
- There is a total of 1,842 assets in the Equipment service category including 28 playgrounds/play structures.
- Due to the variety of equipment in the inventory which spans several service areas, it is recommended that the equipment of specific service areas be targeted each year as part of an annual condition assessment program, excluding playgrounds/play structures which require monthly inspections.

Levels of Service (LOS)

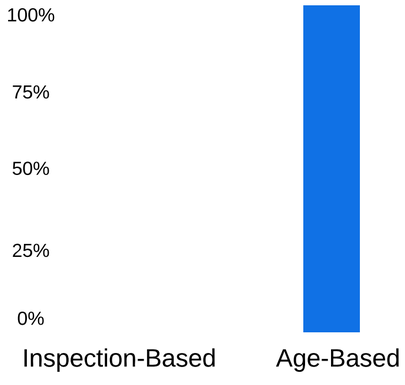
What are the specific LOS objectives?

- Quality & Reliability: Provide reliable equipment that meets the needs of the user.

Stationary, Portable, and Wearable/Handheld Equipment



Asset Condition Data



Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Indicators that Equipment assets have deteriorated can include broken or missing components, increasing maintenance requirements, damage from use, and/or reduced performance.

Frequency / Cost

- Visual assessments for all playgrounds/play structures are recommended monthly due to applicable regulations. A budgetary unit cost of $200 per asset should be employed for playgrounds/play structures. This is based on 1 hour per asset for the inspection, and up to three hours for staff to travel to each site, and update the Equipment asset inventory at a rate of $50/hour.
- A budgetary unit cost of $100 per asset should be employed for all other equipment assets, allowing 2 hours of effort at a rate of $50/hour. Condition assessments should strive to assess approximately 20% of the overall equipment inventory each year to ensure all equipment assets are inspected at a minimum once every five (5) years.
- The Town's existing equipment asset inventory totals 1,842 assets including 28 playgrounds, translating to a total condition assessment cost of approximately $248,600 and annual estimated cost of approximately $49,720 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Visual condition assessments may be completed by Town staff. Visual condition assessments should involve assigning condition ratings using the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor.
- Condition assessment information may also be updated by Town staff for equipment while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information including the use of ArcGIS integrated applications such as an inspection form developed in Survey 123 or Field Maps for stationary equipment.
- For all playground equipment, to meet standards set forth by the Canadian Standards Association, specifically CSA Z614-20 Children's Playground Equipment and Surfacing, an established checklist should be employed for monthly inspections.

Comments

- The equipment asset inventory features equipment spanning many service areas including Parks, Fleet, Roads, Water, Facilities, Recreation and Culture, Administrative Services, Public Works, Fire and Emergency Services, and Library Services.

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the equipment inventory such as make, model (if applicable), material (if applicable), description, age, condition, and replacement cost.
- The cost to complete a condition assessment will vary depending on the size and charecteristics of each equipment asset. Costing outlined in this condition assessment plan should be considered for high-level budgetary purposes only.

Condition Assessment Plan - Active Transportation

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential problems related to multi-use path assets.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related safety risks.
- Understand asset needs and prioritize corresponding investment.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Average Condition Rating for Each Asset Type (i.e., material).
  - Width of the mutli-use paths

Quantity

How many assets should be assessed?

- There is a total of 25 assets in the Active Transportation service category.
- The Town's existing asset inventory totals approximately 18 Km. All assets may be inspected during a visual condition assessment program.

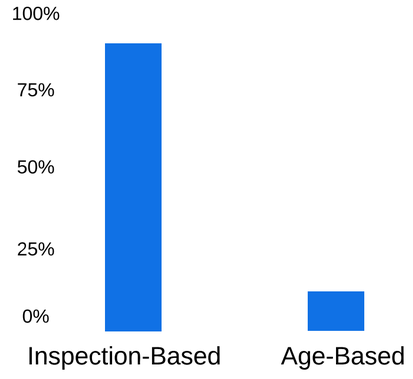
Levels of Service (LOS)

What are the specific LOS objectives?

- Quality & Availability: Provide an active transportation network that is available for all users of the network and provide connectivity through the network.

Multi-Use Paths

Asset Condition Data



Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Specific distresses will vary depending on the material of the asset. The multi-use path asset materials observed in the Town's inventory include hard surfaces such as asphalt and concrete, and loose surfaces such as crushed limestone, gravel, and natural material.
- For hard surfaces, distresses may include cracks, crumbling, and/or potholes.
- For loose surfaces, distresses may include deformation of the pathway or overgrown vegetation.

Frequency / Cost

- Condition assessments for all multi-use path assets is recommended every five (5) years.
- A budgetary unit cost of $1,500 per Km should be employed for condition assessments of multi-use paths assuming the procurement of condition assessment services by a qualified consultant. This budgetary unit cost includes consideration for travel time, detailed inspection, and administration related to reporting.The Town's existing multi-use path asset inventory totals approximately 18 Km, translating to a total condition assessment cost of approximately $27,000 every five (5) years.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Visual condition assessments may be completed by Town staff or through procurement of a qualified consultant. Visual condition assessments should involve assigning condition ratings using the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor.
- Age-based methods may also be employed for assessing Active Transportation asset conditions, specific in between visual condition assessment programs. To conduct age-based condition assessments, maintaining asset inventory information will be a top priority. Asset inventory information should be maintained for accuracy, completeness, and validity. Inventory information may be updated by Town staff for assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information incuding the use of ArcGIS integrated applications such as Survey 123 or Field Maps.

Comments

- Considering the availability of up to date (i.e., 2023) condition information for the majority of the Town's asset inventory, the Town should consider delaying the next visual condition assessment program until 2027.

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the multi-use path inventory such as quantity, material, age, condition, and replacement cost.

Condition Assessment Plan - Roadway Appurtenances

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential problems related to priority, warning, and/or regulatory signs.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related safety risks.
- Understand asset needs and prioritize corresponding investment.
- Meet standards set forth in the Ontario Regulation 239/02 Minimum Maintenance Standard for Municipal Highways - Retro-reflectivity requirements.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Overall Average Roadway Appurtenance Condition
  - Summary of Pass/Fail for Retro-Reflectivity by Asset Class

Quantity

How many assets should be assessed?

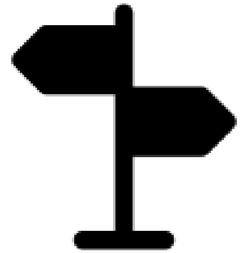
- There is a total of 3,960 signs in the Roadway Appurtenances service category.
- Due to requirements set forth in the Ontario Regulation 239/02 Minimum Maintenance Standard for Municipal Highways - Retro-reflectivity requirements, all sign assets should be assessed for retro-reflectivity once per year. Inpection of physical condition should be completed concurrently.

Levels of Service (LOS)

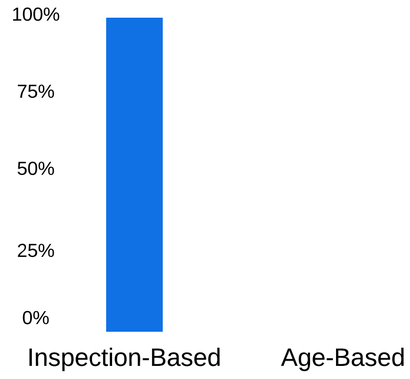
What are the specific LOS objectives?

- Quality & Reliability: Provide and maintain roadway appurtenances (i.e., signs) to support safety on the roads.

Priority Signs, Warning Signs, Regulatory Signs



Asset Condition Data



Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Indicators that sign assets have deteriorated can include broken or missing components, damage from external elements (e.g., weather), damage from abrasion or impact, reduced retro-reflectivity, or cosmetic damage.
- Additionally, assessments should note issues related to visibility (i.e., if signs are not visible due to vegetation or other obstructions).

Frequency / Cost

- Condition assessments for all sign assets are to be completed annually.
- A budgetary unit cost of $10 per asset should be employed for condition assessments of sign assets based on historical costing for visual condition assessments and retro-reflectivity testing.
- The Town's existing sign asset inventory totals 3,960 signs, translating to a total condition assessment cost of approximately $39,600 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Visual condition assessments may be completed by Town staff or through procurement of a qualified consultant and should be completed at the same time as retro-reflectivity testing. Visual condition assessments should involve assigning condition ratings using the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor.
- Condition assessment information may also be updated by Town staff for signs assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information including the use of ArcGIS integrated applications such as Survey 123 or Field Maps.
- Retro-reflectivity testing may be conducted using portable retroreflectometers.

Comments

- Existing condition assessment data was developed by Advantage Data Collection based on inspections from 2021 to 2022.
- The installation years for signs are not documented in the current sign inventory restricting the ability to complete age-based condition assessments.
- The Town should strive to further develop the inventory of Informational Signs (e.g., street signs) in future visual condition assessment programs.

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the sign inventory such as sign type, classification, material, age, condition, and replacement cost.

Condition Assessment Plan - Urban Forestry

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential problems related to urban trees which may include the presence of invasive species with the potential to threaten the inventory.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related safety risks.
- Understand asset needs and prioritize corresponding investment.
- Understand tree canopy coverage and activities that threaten its establishment.
- Understand levels of service (LOS) being provided to the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Overall Average Tree Condition

Quantity

How many assets should be assessed?

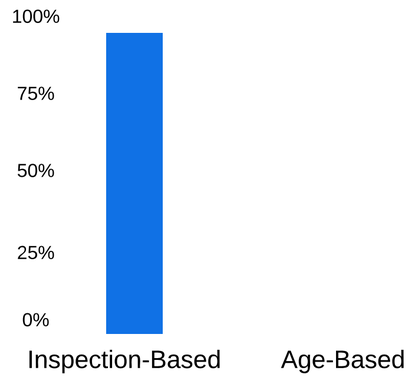
- There is a total of 30,934 trees in the Urban Forestry service category.
- Due to the large number of trees comprising the Town's Urban Forestry inventory, it is not practical to conduct condition assessments for all assets each year.

Levels of Service (LOS)

What are the specific LOS objectives?

- Quality & Availability: Trees are healthy and in a state of good repair to provide tree canopy to the community.

Urban Trees



Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Trees are living assets that may experience a variety of health issues. Signs of declining tree health include fallen sticks/branches around the base of the tree, shedding of bark, the presence of rot or funcus, the presence of insects, the loss of leaves (excluding seasonal influences), or root damage.
- Safety risks may include raised roots posing a tripping hazard to residents or a tree that is no longer standing up straight and may fall over.

Frequency / Cost

- Specific geographical areas should be scheduled for condition assessments each year (e.g., specific woodlots, streets) representing approximately 2% to 5% of the total inventory with priority given to areas where tree data is unknown or outdated.
- A budgetary unit cost of $10 per asset should be employed for condition assessments based on 15 trees/hour at a rate of $150/hour for certified inspection staff.
- The Town's existing inventory totals approximately 30,934 trees, translating to a total condition assessment cost of approximately $309,340. With annual condition assessments of 2% to 5% of the inventory, estimated cost is approximately $6,200 to $15,470 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Visual condition assessments may be completed by Town staff or through procurement of a qualified consultant. Visual condition assessments should involve assigning condition ratings using the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor.
- Condition assessment information may also be updated by Town staff for tree assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information including the use of ArcGIS integrated applications such as Survey 123 or Field Maps.
- Personnel conducting the condition assessments should possess one of the following certifications:
  - International Society of Arboriculture (ISA) Certified Arborist or ISA Certified Arborist Municipal Specialist
  - Registered Professional Forester (R.P.F.) (Urban Forestry) by the Ontario Professional Foresters Association (OPFA)

Comments

- Currently, there are 2,612 trees without condition assessment data. Condition assessment scheduling should prioritize geographical areas where a large number of trees do not have condition assessment data.

Comments

- Detailed condition assessments include confirmation of asset inventory information, including all required attributes related to the Urban Forestry inventory such as size, species, age, condition, and replacement cost.
- By scheduling condition assessments based on specific geographical areas, costs related to mobilization of Town staff or external consultants may be reduced.
- The urban forestry asset inventory should be actively managed including regular updates to asset attribute information and addition/removal of assets as required.

Condition Assessment Plan - Information Technology (IT)

Goals and Objectives

Objectives

What are the objectives of the Condition Assessment Plan? What are the regulatory requirements that need to be met?

- Proactively identify existing and potential problems related to broadband, hardware, and software assets.
- Where possible, extend the useful life of assets by ensuring existing deterioration is well understood and properly addressed through maintenance, rehabiliation, and replacement activities.
- Identify and eliminate or mitigate asset-related security risks including out of date hardware, out of date software, and firewalls from vendors who have been breached.
- Identify software assets that may no longer be relevant or required for Town operations.
- Understand asset needs and prioritize corresponding investment.
- Understand levels of service (LOS) being provided to Town stadd and the community through the intentional collection of asset data that facilitates evaluation of LOS metrics including:
  - Overall Average Condition of IT Assets

Quantity

How many assets should be assessed?

- There is a total of 2,165 assets in the IT service category, including:
  - 1,270 physical broadband and hardware assets
  - 5 broadband towers
  - 890 software programs and/or licenses (i.e., not physical assets).

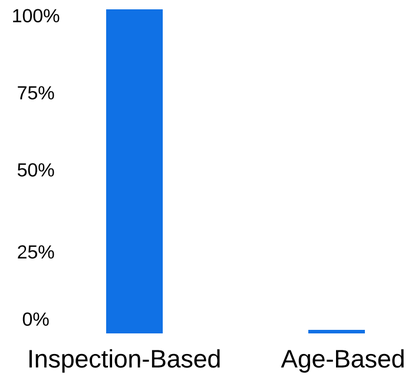
Levels of Service (LOS)

What are the specific LOS objectives?

- Quality & Reliability: Provide reliable equipment to meet the needs of the Town. Ensure IT assets are fit for purpose and deliver the expected service to users.

Broadband, Hardware, and Software Assets

Asset Condition Data



Condition Assessment Procedures

What to Look For

What are some of the signs the asset has deteriorated?

- Indicators that structural tower elements have deterioated include corrosion, missing or broken structural members, and deformation of structural members.
- For software, changes of availability for vendor support, usability, relevance to Town operations, or payment models should be noted.

Frequency / Cost

- Visual assessments for all structural elements of towers are recommended every year due to their criticality to IT operations. A budgetary cost of $14,000 per year should be used based on historical data for the 5 towers.
- A budgetary unit cost of $50 per asset should be employed for annual age-based condition assessments of physical IT assets. This is based on 1 hour per year per asset at a rate of $50/hour for staff to review and/or update the IT asset inventory.
- The Town's existing physical IT asset inventory totals 1,270 assets for age-based assessements translating to a total condition assessment cost of approximately $63,500 per annum.

Methodology / Technology

How are condition assessments completed? Who performs the condition assessment? What technology can be utilized to carry out the assessment?

- Condition will be assessed using age-based methods for all assets except the structural elements of broadband towers. Age-based assessments are to consider each asset's age and remaining useful life to assgined a condition rating as outlined in **Section 4.6.1** of the AMP.
- To conduct age-based condition assessments, maintaining IT asset inventory information will be a top priority. IT asset inventory information should be maintained for accuracy, completeness, and validity. Inventory information may be updated by Town staff for IT assets while performing maintenance, rehabilitation, or replacement activities. The use of digital data collection applications may streamline updating of condition information.
- Condition assessments of broadband towers should be visual in nature and may be completed by Town staff or through procurement of a qualified consultant. The focus of these assessments will be to evaluate structural integrity of the towers, flag health & safety requirements, and assgined an overall condition rating in line with the Town's five-point (1-5) condition rating system corresponding to condition grades of Very Good to Very Poor. All towers may be assessed each year as part of a single project.

Comments

- Software assets in the Town's IT asset inventory are excluded from the "Percent of Assets with Condition Assessment Data" chart as they are not physical assets subject to condition assessments.

Comments

- Condition assessments include confirmation of asset inventory information, including all required attributes related to the IT asset inventory such as element quantity, description, age, condition, and replacement cost. This applies for visual condition assessments and age-based condition assessments.