ASSET MANAGEMENT PLAN

City of Cambridge

June 2025

CAMBRIDGE
CANADA
PEOPLE • PLACE • PROSPERITY

cambridge.ca

Document Review and Approval Page

Version	Author	Date	Revision

Land Acknowledgement

We embrace our shared responsibility with the First Nations people to take care of this Earth and its creatures; we can only do so by walking the path as partners stewarding this land as we have been given the duty together to live in balance and harmony with all living things.

We acknowledge and respect the Anishinaabe, Chonnonton, and Haudenosaunee peoples who came before us and who we live amongst. By honouring this truth of past and present may we come to true reconciliation through listening, reflecting and learning.

The City is committed to raising awareness and taking action around the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the recommendations of the Truth and Reconciliation Commission of Canada (TRC).

Cambridge at a Glance

The City of Cambridge (the City) was officially formed by the Province of Ontario on January 1, 1973. Made up of the former communities of Galt, Preston, Hespeler and Blair, the history of this area dates to a far earlier period.

Today, Cambridge is a modern, inclusive city with a rich architectural heritage providing a window to that past. Economic diversity, natural beauty, and vibrant culture has helped to make Cambridge the second largest community within the fast-growing Waterloo Region with a population of approximately 156,100 (2024, Environics) people, and 54,000 households.

Managing our Assets

Our City provides essential services for our communities that enable its strategic vision of "a place for people to prosper – alive with opportunity". The sustainable delivery of these services is dependent on a wide range of assets that must be managed effectively and maintained in a good state of repair in order to meet expectations. The management of these assets is influenced by a range of factors that impact the cost-of-service delivery and requires the City to proactively coordinate its planning to balance expenditures, services, and risk across its diversified portfolio of assets – a process referred to as Asset Management.

The City has long recognized the need for effective asset management to sustain service delivery and has adopted increasingly progressive strategies through the application of leading asset management practices.

Advancing Asset Management

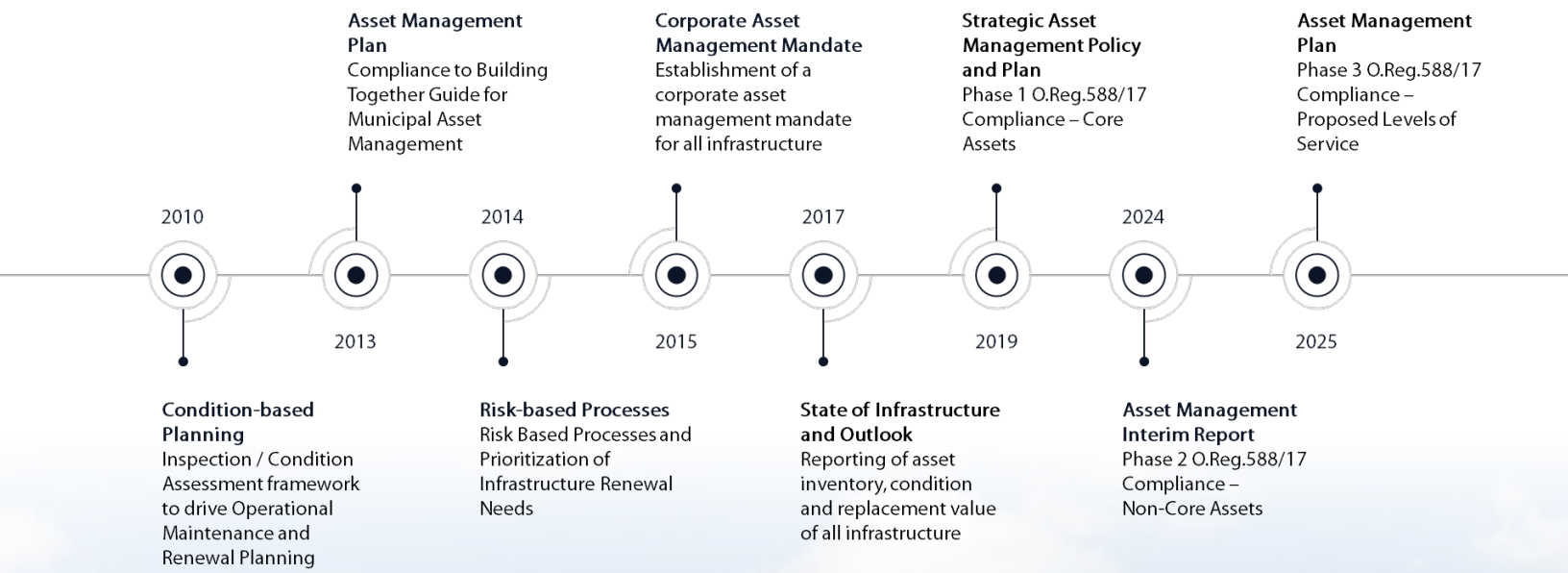
We are proud contributors to the advancement of asset management knowledge and practice within the community. We actively participate in industry organizations, and share knowledge, experience and leading practices through conference presentations, partnerships and research initiatives in the field of asset management. We have engaged in initiatives to share our experiences and develop leading asset management practices with the following organizations:

- Institute of Asset Management
- Canadian Network of Asset Managers
- Asset Management Ontario
- Canadian Infrastructure Benchmarking Initiative
- Yardstick Parks Benchmarking

Through our dedicated application of leading practices and industry collaboration, we remain committed to the sharing of knowledge and advancement of an asset management culture to deliver our communities essential services.

Refer to Figure 1 for our asset management journey since 2010.

Figure 1: City of Cambridge Asset Management Timeline



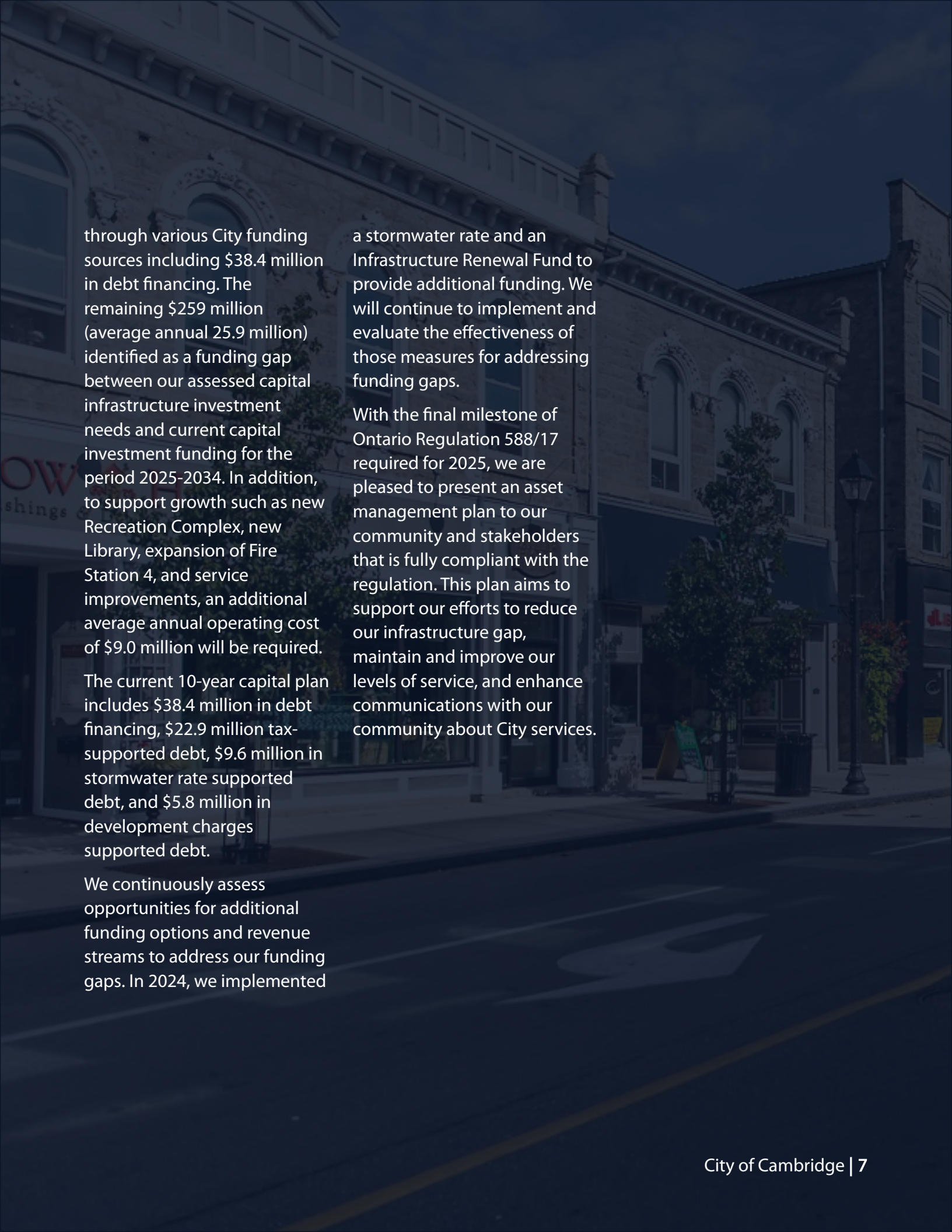
Executive Summary

The City of Cambridge is responsible for providing our community of approximately 156,000 residents with essential services needed to realize our vision of a *place for people to prosper*. Our infrastructure assets, with a replacement value of $4.8 billion, are the foundation for delivery of these vital services and we must therefore ensure an appropriate investment is planned to renew our assets and enhance our portfolio as needed to maintain service delivery.

We have long recognized the benefits of adopting leading practices with respect to asset management. This includes working progressively to implement approaches that support sustainable service delivery while managing risks.

As assets age, their condition degrades which can ultimately impact service delivery. We have adopted leading processes and technologies for condition assessment of assets, which provides valuable insight that informs our monitoring and management of levels of service and planning for investment. Condition assessment data indicates a decline in the overall condition of our assets, however, we maintain a “Good" condition rating overall. In 2019, approximately 70% of assets were rated as being in “Very Good” or “Good” condition, which has fallen to 62%. Meanwhile, in 2019 the City had 11% of its assets rated as in "Poor" or "Very Poor" condition, and this has increased to 18%. An increased number of assets in "Poor" and "Very Poor" condition leads to increased challenges and costs to operate and maintain current service levels.

The current condition of our infrastructure assets informs the analysis of the financial investment needed for asset renewal to meet the proposed levels of service over a 10 year planning period. The resulting analysis for this AMP indicates a $34.9 million annual average funding gap (including Capital and Operating) for all service areas in the period 2025-2034. An estimated total capital investment of $890 million is required over the next ten years to maintain existing assets in a good state of repair and to provide municipal financing for new infrastructure to support growth. The 2025-2034 Capital Investment Plan provides for infrastructure investment of $631 million



through various City funding sources including $38.4 million in debt financing. The remaining $259 million (average annual 25.9 million) identified as a funding gap between our assessed capital infrastructure investment needs and current capital investment funding for the period 2025-2034. In addition, to support growth such as new Recreation Complex, new Library, expansion of Fire Station 4, and service improvements, an additional average annual operating cost of $9.0 million will be required.

The current 10-year capital plan includes $38.4 million in debt financing, $22.9 million tax-supported debt, $9.6 million in stormwater rate supported debt, and $5.8 million in development charges supported debt.

We continuously assess opportunities for additional funding options and revenue streams to address our funding gaps. In 2024, we implemented a stormwater rate and an Infrastructure Renewal Fund to provide additional funding. We will continue to implement and evaluate the effectiveness of those measures for addressing funding gaps.

With the final milestone of Ontario Regulation 588/17 required for 2025, we are pleased to present an asset management plan to our community and stakeholders that is fully compliant with the regulation. This plan aims to support our efforts to reduce our infrastructure gap, maintain and improve our levels of service, and enhance communications with our community about City services.

Table of Contents

Appendices

Figures

Tables

Introduction

This Asset Management Plan (AMP) describes our approach to effectively plan for our assets to secure our stated strategic outcomes and deliver expected services in compliance with the requirements set out in Ontario Regulation 588/17. It replaces the AMP developed in 2019 and the interim report developed in 2024.

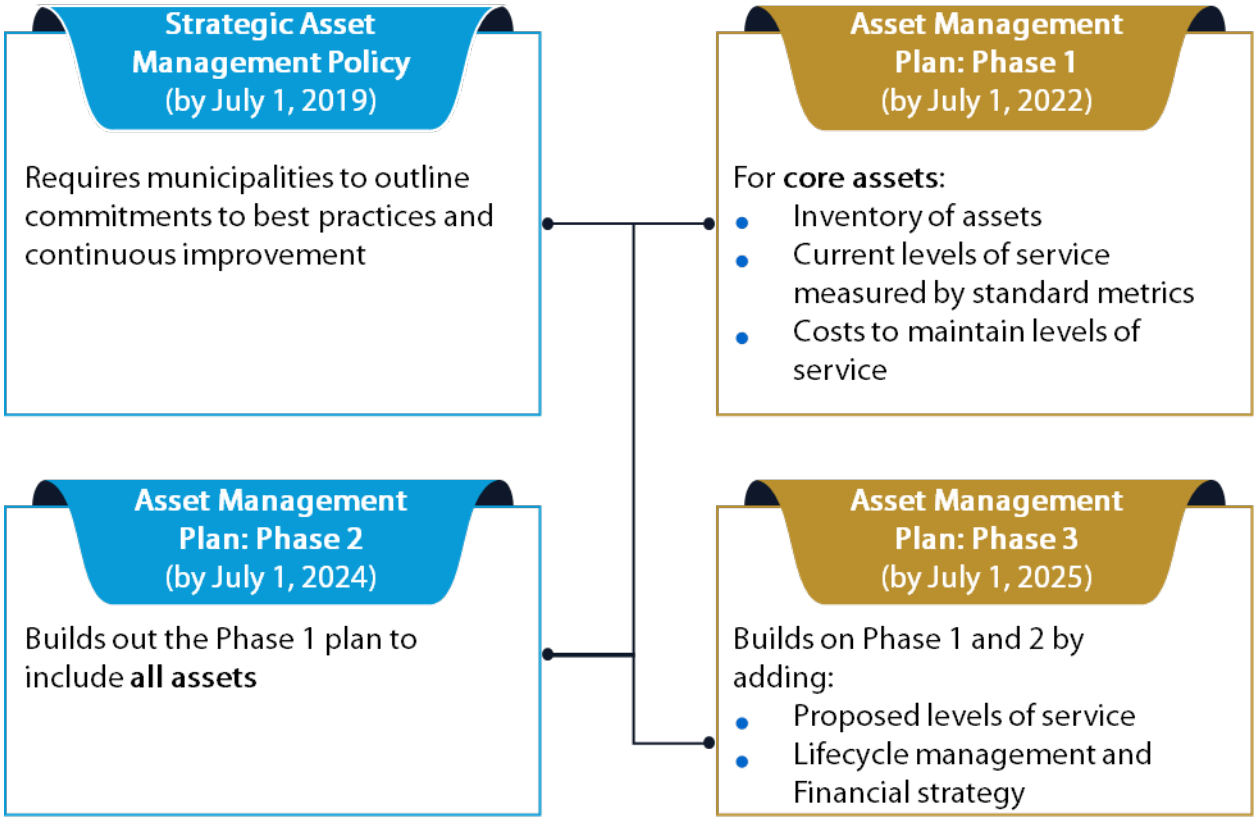
The City of Cambridge is located within southwestern Ontario, the City was officially formed by the Province of Ontario on January 1, 1973. Economic diversity, natural beauty, and vibrant culture has helped to make Cambridge the second largest community within the fast-growing Waterloo Region. Cambridge is a modern City with a rich architectural heritage. The City has many attractions for both residents and visitors to enjoy including City parks and trails, arts and culture spaces, events and festivals and a year-round farmers market.

The City of Cambridge is responsible for providing our communities with essential services needed to realize our vision of a place for people to prosper – alive with opportunity. This Asset Management Plan (AMP) outlines key information about the assets that provide these services to residents. Our infrastructure assets have a current replacement value of $4.8 billion as of 2025. The sustainable delivery of these services is dependent on a wide range of assets that must be managed effectively and maintained in a state of good repair in order to meet expectations. The goal of this AMP is to maximize benefits, manage risk and ensure adequate levels of service are provided in an affordable and a sustainable manner.

Overview of Ontario Asset Management Regulation

Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure requires municipalities to develop and implement an Asset Management Plan and provide supporting policies for municipal infrastructure. After 2025, municipalities are required to review their asset management plan annually, and complete formal 5-year asset management plan updates. A summary of the O.Reg. 588/17 timeline and requirements is shown below in Figure 2.

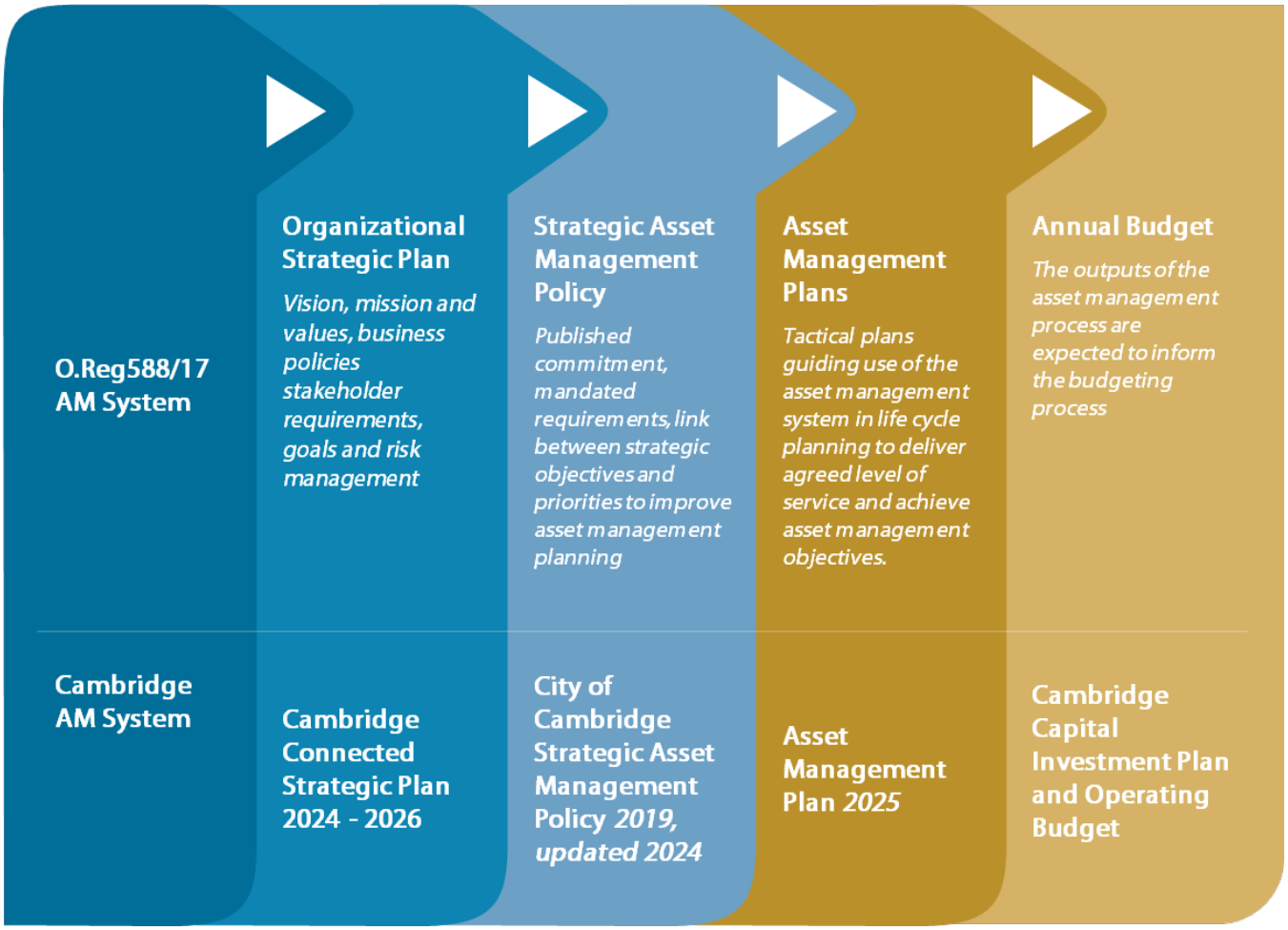
Figure 2: Ontario Asset Management Regulation Overview



This regulation requires every municipality to prepare a Strategic Asset Management Policy and an Asset Management Plan linked to their strategic objectives with the expectation that outputs of the asset management planning process inform financial long-term and budgetary planning processes. This asset management plan will meet the regulatory requirements for the 2025 O. Reg. 588/17 milestones including recommendations on proposed levels of service and the funding required to meet them.

The structure and sequence of the regulation's requirements is highlighted below along with our compliant documents.

Figure 3: Structure and Sequence of O.Reg.588/17 Requirements



Purpose of the Asset Management Plan

This AMP has been drafted in compliance with O. Reg. 588/17, related to requirements for July 1, 2025. These documents are a comprehensive, strategic document outlining how our assets are to be managed over a 10-year planning horizon and beyond to maintain our service delivery objectives. The process of developing an AMP fosters a long-term perspective that enables capital and operational sustainability and efficiency. It seeks to achieve the following outcomes:

Figure 4: Asset Management Plan Outcomes

Scope of the Asset Management Plan

This AMP focuses on approaches adopted for effective management of assets directly owned and/or managed by the City of Cambridge. Services and assets managed by the Region of Waterloo are not included within this AMP. An outline of the services provided by the City and the Region of Waterloo are provided below for clarity.

Transportation (parking, roads, sidewalks, street lighting, traffic management, trails, and winter maintenance)

Environmental Services (stormwater, wastewater, drinking water)

Emergency Services (city-wide emergency planning and management, and fire services)

Parks (parks, sports fields, playgrounds, cemeteries, forestry, horticulture)

Recreation & Culture (arenas, pools, community/senior centre, market, theatre, museums etc.)

Library

City Support Services (economic development, land development, planning services, and tourism)

Regional Transportation (including Waterloo Regional International Airport, Grand River Transit, traffic signals, ION, and regional roads)

Waste Management and Water/Wastewater Treatment

Regional Police and Emergency Response Services (paramedics)

Public Health and Social Services (harm reduction and affordable services)

Regional Planning (including environmental and economic development)

This AMP includes all of the City's core and non-core assets, as defined within O.Reg. 588/17. Table 1 presents a summary of the core and non-core asset classes included in this AMP, a comprehensive list of assets in each area is located in Appendix L.

Table 1: Core Assets

Service Area	Asset Class	Summary
Transportation	Roads	Road assets are used by both local and transient users to allow people to travel through and around Cambridge via our road network including bridges and major culverts, street lighting, etc. Most major roads are owned by the Region of Waterloo, so are not considered as part of this AMP.
Transportation	Active Transportation	Assets that enable travel around Cambridge through biking and/or walking. Assets include sidewalks, walkways, trails, and pedestrian bridges.
Transportation	Parking	Parking lots or street parking to provide drivers with a place to park their vehicles around Cambridge.
Stormwater	Stormwater	The assets used to manage stormwater runoff in the community via the pipe network, culverts and ponds (stormwater management facilities).
Drinking Water	Water System	The assets that deliver drinking water services to the community, via pipe network, service connections and metering infrastructure. Treatment plants, pumping stations and storage facilities are owned by the Region of Waterloo, so are not considered as part of this AMP.
Wastewater	Wastewater	The assets used to manage wastewater for the community, via the pipe network and pumping stations. Wastewater treatment plants are owned by the Region of Waterloo, so are not considered as part of this AMP.

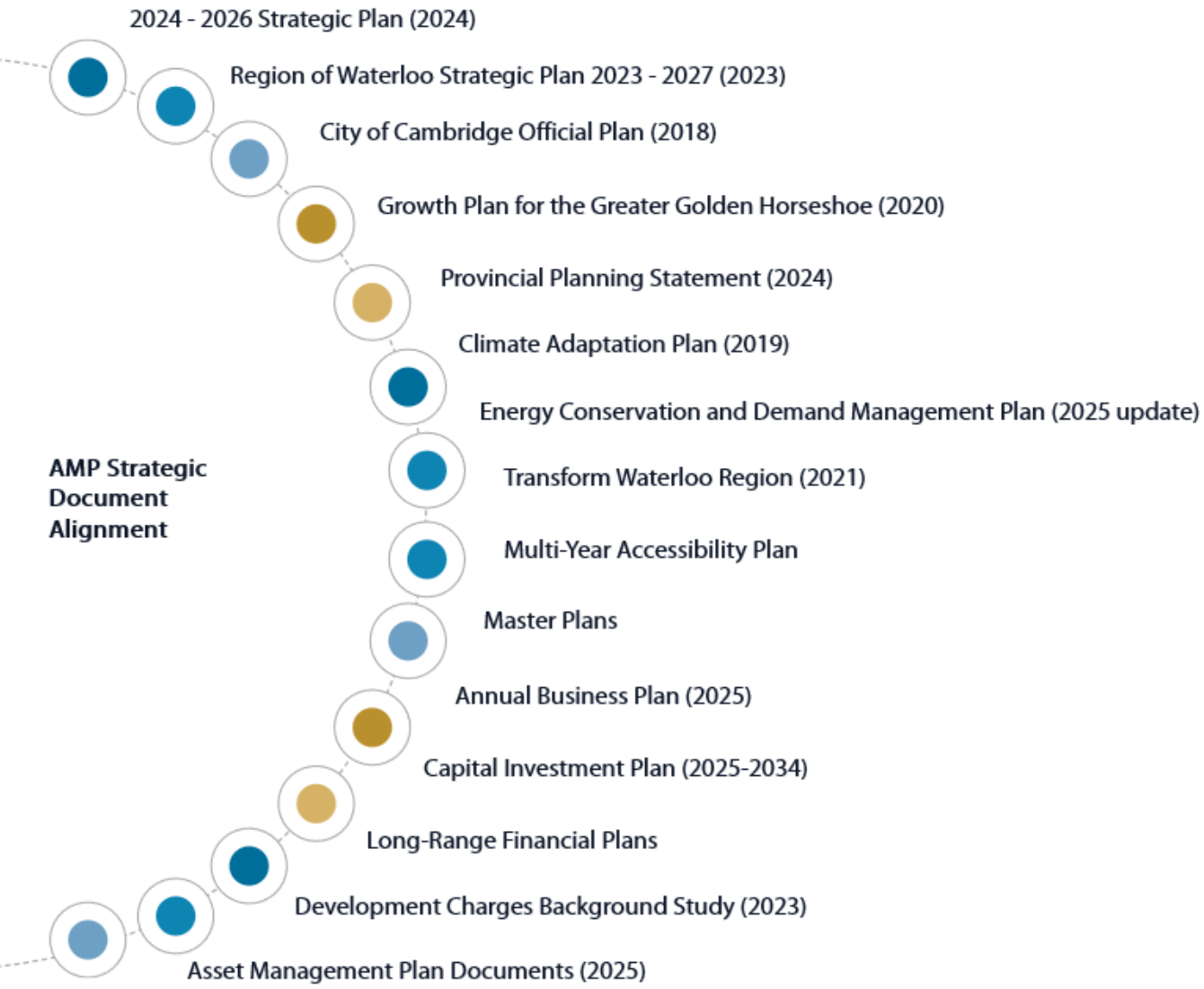
Table 2: Non-Core Assets

Service Area	Asset Class	Infrastructure Summary
Emergency Services	Fire Protection	Fire stations and fleet used to respond to and deal with emergencies when they occur.
Parks	Cemeteries	Assets to provide the community with methods to dispose of human remains in a dignified way.
Parks	Parks	Assets that provide natural areas and green spaces for leisure pursuits and outdoor activities.
Parks	Forestry & Horticulture	Tree assets, horticulture beds and planters that provide natural areas that benefit the community and the environment.
Parks	Outdoor Recreation	Assets that provide space for outdoor recreation activities for the community including baseball diamonds, soccer fields, tennis courts, etc.
Recreation & Culture	Indoor Recreation & Culture	Assets serving the purposes of indoor recreational pursuits. Assets include arenas, pools, community/ senior centres, theatres, the market, etc.
Library	Library	Assets used to provide library services to the community.
Corporate Facilities	Corporate Facilities Maintenance and Storage Facilities Operations Facilities Leased Facilities Vacant Facilities Parking Lots	The facilities that enable the City of Cambridge to provide amenities and services. Assets include corporate office buildings, maintenance and storage facilities, operational buildings, leaded and vacant buildings, and parking lots.
Fleet & Equipment	Fleet Vehicles Equipment Shop Equipment & Tools	The vehicles and equipment that support the City in delivering amenities and services.
Information and Communications Technology Infrastructure	Hardware Software	The assets that provide communications and connectivity to enable the City of Cambridge to deliver services. Assets include phones, laptops, servers, TVs and diverse software applications, etc.

Strategic Planning Alignment

To fulfill our purpose, the City engages in a range of planning processes to meet regulations, strategic objectives, and communicate with the community. As many of these planning processes have implications for the City's assets, it is important that the commitments made within these plans are fully integrated within the AMP. Figure 5 highlights the strategic documents in place at the City with a linkage to the AMP. A full description of the linkage between each of these documents and the AMP is featured in Appendix M.

Figure 5: Strategic Documents at the City



Navigating the Asset Management Plan

The AMP consists of three main components outlined in Figure 6 with a description of the content located in each component.

Figure 6: AMP Outline

Main Body

This document describes the City's approaches to effective asset management planning to deliver its strategic outcomes. Each section within the main body provides the relevant information required by O. Reg. 588/17 and refers to all asset groups. Where necessary, the reader will be referred to the appendices for additional information.

01

Asset Specific Appendices (A-K)

Appendices A-K of this document provide information on each of the asset portfolios under ownership or management by the City. These sections provide all of the information specified by the regulation for core assets and the currently available information for non-core assets. Where necessary, the reader will be referred to the appendices for additional information.

02

Additional Appendices (L-R)

Appendices L-R provide additional information referenced in the preceding sections of the main body in relation to the asset hierarchy, the strategic planning alignment documentation, the basic asset attributes list, asset maps, glossaries, capital investment prioritization criteria and the capital needs project list.

03

State of the Infrastructure

This section is intended to provide insight into the condition and details regarding the City's municipal infrastructure at this point in time, providing a greater level of awareness into the service areas that are performing well and those that will require greater investment. An understanding of important infrastructure metrics, such as replacement value or condition, is critical as it serves as a basis for lifecycle management strategies and long-term financial planning.

In compliance with the Regulation, this section contains summaries of asset categories and condition assessment approaches, as well as quantitative outputs, such as asset replacement costs, average age, and condition information. Details on the state of infrastructure can be found in the Asset Specific Appendices that follow.

O.Reg.588/17 requires that the City outline the following information for each asset category:

- A summary of the assets in the category;
- The replacement costs of the assets;
- The average age of the assets, determined by assessing the average age of the components of the assets;
- The information available on the condition of the assets; and
- A description of the City's approach to assessing the condition of assets in the category, based on recognized and generally accepted good engineering practices where appropriate.

Asset Data Management

The effective management of assets relies on the processing of large volumes of data and information related to our assets such as their condition, costs, and repair and maintenance activity. This information plays a critical role in providing an understanding of assets to support decision-making and targeting investment where it is most needed to meet our community priorities.

Our asset management, therefore, relies on the processes and systems that help us collect, manage and report this information effectively.

The application of appropriate data is critical to effective asset management – it provides vital information and insight into asset condition and capability to sustain service to target effective solutions and support effective decision-making. The effective management of data is therefore a critical process to support asset management. In recognition of this importance, the City has implemented an Asset Information Management Process describing the objectives, standards, definitions, and expectations relating to information management for assets.

Asset Attributes

To support consistency across asset classes, Cambridge maintains a database of key attributes for each asset.

- **Basic Information** (Asset ID, Description, Status, Ownership, Size, Material, and Maintenance Responsibility)
- **Location Information** (based on Address, Road Segment, Utility Corridor, Park Name, etc.)
- **Asset Source and Rehabilitation History** (Construction Year, Construction Year Estimate if Construction Year is unknown, Project ID, Regulation Plan ID, Warranty Start, Warranty End, Last Treatment Type, Last Treatment Year)
- **Asset Valuation** (Current Replacement Cost and Replacement Cost Year)
- **Condition** (Asset Condition, Last Inspection Date, Remaining Service Life)
- **Risk Profile** (Consequence of Failure, Asset Risk Score)
- **Lifecycle Information** (Replacement Year Life, Replacement Year Condition, Next Replacement Year)
- **Tangible Capital Asset** (TCA) Information (TCA Class, TCA Category, TCA Status, FIR Code).

Definitions of these attributes can be found in Appendix N.

Identification

Each asset has a unique identifier for its lifecycle consisting of a two-digit asset code (e.g. 'SP' for Sanitary Pipe) and a one to five digit numeric code. The information stored within systems is integrated using this unique identifier.

Status

All assets within the system have a 'Status' column to record existing servicing status. Once an asset has been recorded in the system, it shall never be deleted, unless it was added due to a recording error. When an asset is removed or decommissioned, the status of the asset is changed to 'Removed' or 'Abandoned'. The following are valid system status values:

- **Planned:** The asset is planned to be installed, constructed, acquired, or currently under instruction
- **In Service:** The asset is currently providing its intended service to the end user(s)
- **Out of Service:** The asset is temporarily taken out of service but will be put back in service at some point
- **Abandoned:** The asset is abandoned and there is no plan to use it for providing any future service(s)
- **Removed:** The asset is permanently removed from its service location and disposed.

Data Administration and Management Controls

The City understands that maintaining its data and continuously improving its accuracy results in more informed decision-making for assets and service delivery investment. As such, the IT protocols in place at the City safeguard access to the systems maintaining asset data to ensure access is extended solely to valid users and prohibits invalid users. Through effective identity management, the City creates, provisions and controls different users, roles, groups for its asset systems. Any access to asset data is restricted to the permissions included within user role profiles.

In most cases, the Asset Management division of the City is responsible for asset creation and changes such as updates or removal of the asset. They also function as the core users with capability to approve user requests for updates. All other users are typically granted access to view and report information only.

Inventory Overview

Cambridge routinely monitors the condition and state of its assets through well-defined processes for collection and management of asset information. Information gathered from these processes is reported in compliance with state of infrastructure reporting every two years.

Table 3 provides further information about the condition, average age and replacement value for the asset types within each service area.

Table 3: Asset Portfolio Summary

Service Area / Asset Class	Average Age	Replacement Cost	Condition
Transportation		**$855.2 M**	**Good**
Active Transportation	29	$207.9 M	Good
Parking	20	$2.8 M	Good
Roads	34	$644.6 M	Good

Service Area / Asset Class	Average Age	Replacement Cost	Condition
Drinking Water	**33**	**$846.4 M**	**Fair**
Stormwater	**29**	**$1,073.8 M**	**Good**
Wastewater	**34**	**$856.9 M**	**Good**
Emergency Services	**52**	**$88.8 M**	**Fair**
Parks		**$259.3 M**	**Good**
Cemeteries	75	$14.2 M	Very Good
Forestry & Horticulture	17	$157.4 M	Good
Outdoor Recreation	-	$37.7 M	Good
Parks	79	$50.0 M	Good
Recreation & Culture	**64**	**$551.2 M**	**Good**
Library	**65**	**$77.1 M**	**Good**
Corporate Facilities		**$153.6 M**	**Good**
Corporate Facility	51	$96.2 M	Good
Leased	85	$15.4 M	Good
Maintenance and Storage Facility	52	$20.8 M	Fair
Operations Facility	48	$13.9 M	Fair
Parking Lot	17	$1.6 M	Very Good
Vacant	99	$5.7 M	Fair
Information & Communication Technology Infrastructure		**$27.3 M**	**Very Good**
Hardware	-	$8.6 M	Good
Software	-	$18.8 M	Very Good
Fleet & Equipment		**$44.9 M**	**Good**
Equipment	7	$6.6 M	Good
Fleet Vehicles	8	$37.9 M	Good
Shop Equipment and Tools	8	$0.4 M	Good
Grand Total		**$4.8 B**	**Good**

Further information on the state of infrastructure for each of these asset types can be found in Asset Specific Appendices of the AMP.

Ownership

Although only City owned assets are required to be recorded in our registry, due to business needs assets owned by other public and private authorities are also recorded in the system. The asset repository also needs to include all assets being maintained by the city irrespective of the ownership and location of the assets. This may include sports fields, play structures and other recreation infrastructure being maintained by the City within schools and/or private lands with or without an easement in favor of the City.

Basic asset information for roads, water distribution system and storm sewer system infrastructure owned by Region of Waterloo within municipal jurisdiction of City of Cambridge is being maintained by the City. It provides a consistent dataset for future demand and growth studies, hydraulic studies, and master plans. The asset owners are responsible for condition assessments, operational maintenance, capital renewal plans and other lifecycle planning activities.

Replacement Cost

The current replacement costs for each asset and/or asset components are required to forecast future capital replacement cost and financial needs of the corporation to continue the current services.

The replacement cost can be calculated / estimated based on asset parameters like asset size (diameter, depth and width) and material. The replacement cost can also be dependent on its location and proximity to environmentally sensitive features and/or major transportation features. This valuation is achieved by utilizing information from recent procurement contracts for the similar works. The unit cost of replacement is used to estimate current replacement cost of an asset. These unit costs are also useful for the estimation of future capital projects.

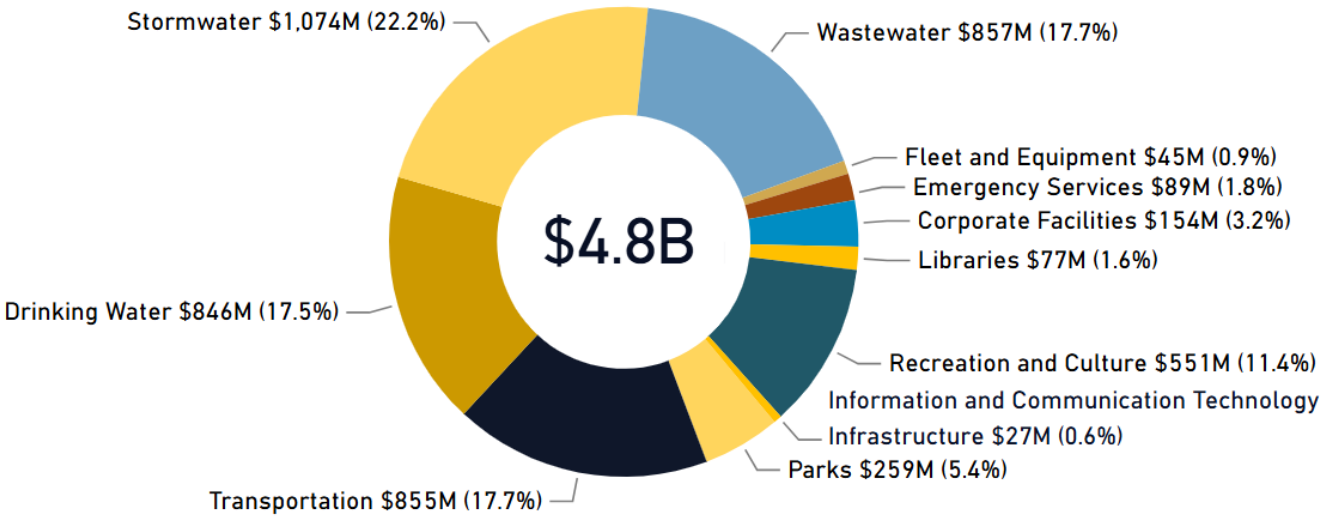
The City of Cambridge calculates its building replacement costs using Handscomb Yardstick for the Canadian construction industry. The Yardstick for costing is based on the listed costs for 8 Canadian cities and is updated on an annual basis. The costing guide provides square foot and meter costs for public buildings such as recreation centres, libraries and fire stations. The costing guide hard cost estimates do not include architectural fees, contingencies allowances, furniture or equipment.

Reconstruction costs are based on the replacement cost estimate and include labor, materials, and equipment costs needed to rebuild a structure. Replacement cost is the estimated cost to construct, at current prices, a building with equal utility to the building being appraised. These costs are highly localized and often fluctuate, requiring periodic updating.

The replacement cost calculation also needs to account for future enhancement to assets either due to legislative changes and/or service improvements. (i.e. replacement of existing play structure with CSA compliant play structure, replacing Vitrified Clay pipe with PVC pipe etc.).

Figure 7 provides a summary of assets owned by City of Cambridge based on Replacement Value by each Service Area. The graph shows that the largest replacement value of assets is transportation, drinking water, wastewater, and stormwater, however, it is important to note that Drinking Water and Wastewater assets are funded through the Water and Wastewater Long-Range Financial Plan. Therefore, the assets with the highest replacement value are transportation and stormwater assets, and are required to forecast future capital replacement cost and financial needs of the corporation to continue the current services.

Figure 7: Asset Portfolio Replacement Value



Condition Assessment Practices

As assets age, their condition degrades which can ultimately impact service delivery. We have adopted leading processes and technologies for condition assessment of assets to gain valuable ongoing insight into the state of our infrastructure that informs our monitoring and management of levels of service and planning for investment in new and existing infrastructure. The application of these techniques on our assets indicates a decline in the overall condition of our assets. We routinely monitor the condition and state of its assets through well-defined processes to identify operational repairs, maintenance program planning as well as capital renewal needs. The information is also used for reporting State of Infrastructure.

Periodic inspections and condition assessment process for all major assets are well defined and operationalized. All core infrastructures including roads, bridges, drinking water, wastewater and stormwater infrastructure have most robust process while others follow a standard inspection approach and are in various stage of implementation.

Asset Specific inspection and condition assessment approach is described in Appendix A-K.

Table 4: ISO 55000 Condition Assessment Practices

Condition	Description	Source
Very Good	• Well-maintained with no deficiencies • New or recently rehabilitated asset	• Condition assessment • Asset age less than 20% of lifespan
Good	• Superficial wear and tear • May require minor operational maintenance • Asset is in an early stage of its useful life	• Condition assessment • Asset age within 20-40% of lifespan
Fair	• May show slight signs of deterioration and require maintenance • Asset is in mid-stage of its useful life	• Condition assessment • Asset age within 40-60% of lifespan
Poor	• Observable deterioration requiring repairs • Frequent component failures • May require monitoring and maintenance or rehabilitation • Has a history of asset failures causing service interruptions • Asset is in later stage of useful life	• Condition assessment • Asset within 60-80% of lifespan
Very Poor	• Shows major signs of deterioration and requires ongoing monitoring to prevent service interruptions • Potential to become unfit for providing service • Asset is in last stage of useful life	• Condition assessment • Asset age older than 80% of lifespan

In the absence of formal condition assessment information, condition is derived from the age and lifespan of the asset. Once condition assessment information has been established for all of the assets, it is then used to support asset management decision-making at the City.

The condition distribution of the asset portfolio is shown in Figure 8 and Figure 9. The majority of assets are in "Fair" or better condition, which accounts for **81%** of the portfolio. Currently, approximately **62%** of assets are in "Good" or "Very Good" condition. The City has seen a continued

deterioration in condition, as in 2019 approximately **70%** of assets were in "Good" to "Very Good" condition, which has now reduced to approximately **62%.** The percentage of assets in "Poor" or "Very Poor" condition has increased from **11%** in 2019 to **18%** currently.

Figure 8: Asset Condition

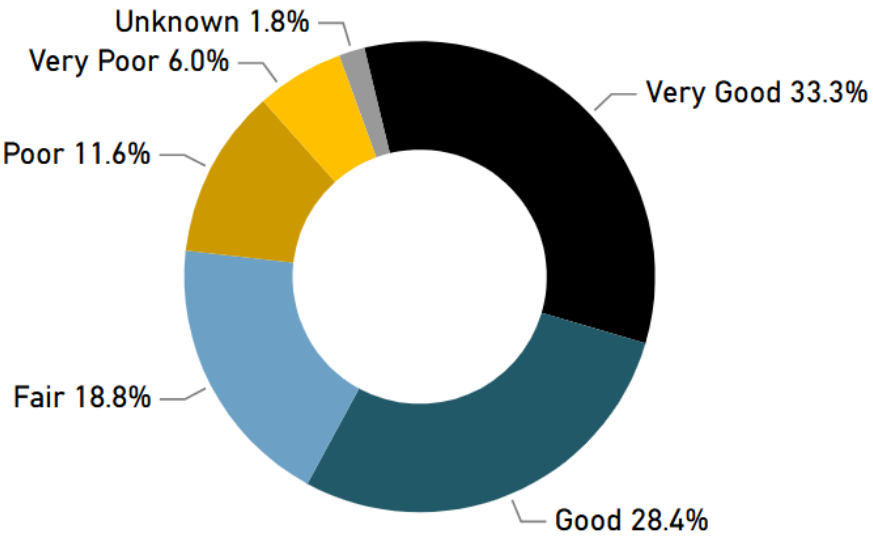
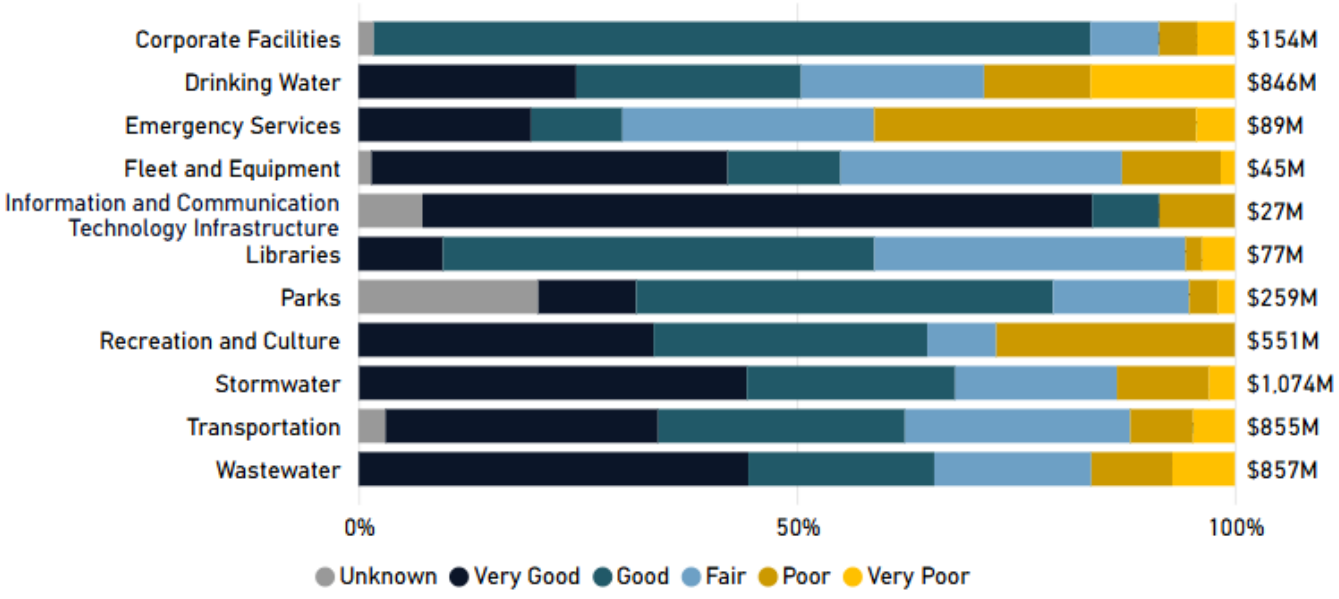


Figure 9: Asset Portfolio Condition



Background Information Access

The City is dedicated to maintaining a transparent and engaged relationship with its communities and stakeholders. We actively support requests for dialogue and information through inclusion of transparency and communication as two of the guiding principles of this plan outlined within the introduction.

Our primary mechanism for maintaining transparency of our asset management plans and approaches is through our City of Cambridge website. On the Asset Management page of the site, stakeholders have access to a wealth of information about our structure, efforts at asset management, processes, formal documents and history of asset management at the City

In addition, we provide access to an online Geospatial Information System (GIS) via our website which enables our stakeholders to view our assets along with relevant information.

This document, along with the Asset Management Policy, will be made publicly available on the City's website as required by O.Reg.588/17 and other regulations pertaining to planning documents.

Levels of Service

The Province requires that the AMP include for each asset class, the current levels of service (LOS) being provided and the levels of service that the municipality proposes to provide for each of the 10 years following the publication of the AMP. The levels of service must be determined in accordance with the qualitative descriptions and technical metrics documented in the Regulation for core assets, with allowance for additional LOS measures.

The metrics documented in the Regulation and other regulatory requirements are the minimum level of service criteria to be addressed by the municipality; however, there is the expectation that additional LOS measures that are aligned and tailored with its community objectives should also be included.

This section describes our approach to developing levels of service for all service areas, both core and non-core assets. We have presented information for the minimum levels of service and associated costs as well as specified additional levels of service to exceed the requirements for the first milestone of the regulation. The financial strategy presented in this AMP is based on maintaining the current levels of service presented in this section. Our continuous improvement plan for asset management will feature initiatives to target the desired levels of service for our all of our defined measures including the required investment in accordance with future milestone requirements of O.Reg.588/17.

Levels of Service Framework

Levels of Service (LOS) are a series of metrics that are used to determine if assets are meeting functional or user requirements. We aspire to advance our approach to LOS by moving beyond the regulatory requirements to develop measures that assess the extent to which we are meeting the needs and expectations of our communities. A leading practice LOS Framework has been designed to align the strategic objectives of our Strategic Plan with measures that reflect the services most valued by our residents and that have been developed based on the interpretation of City Administration. The Levels of Service Framework (or the Framework) features the following:

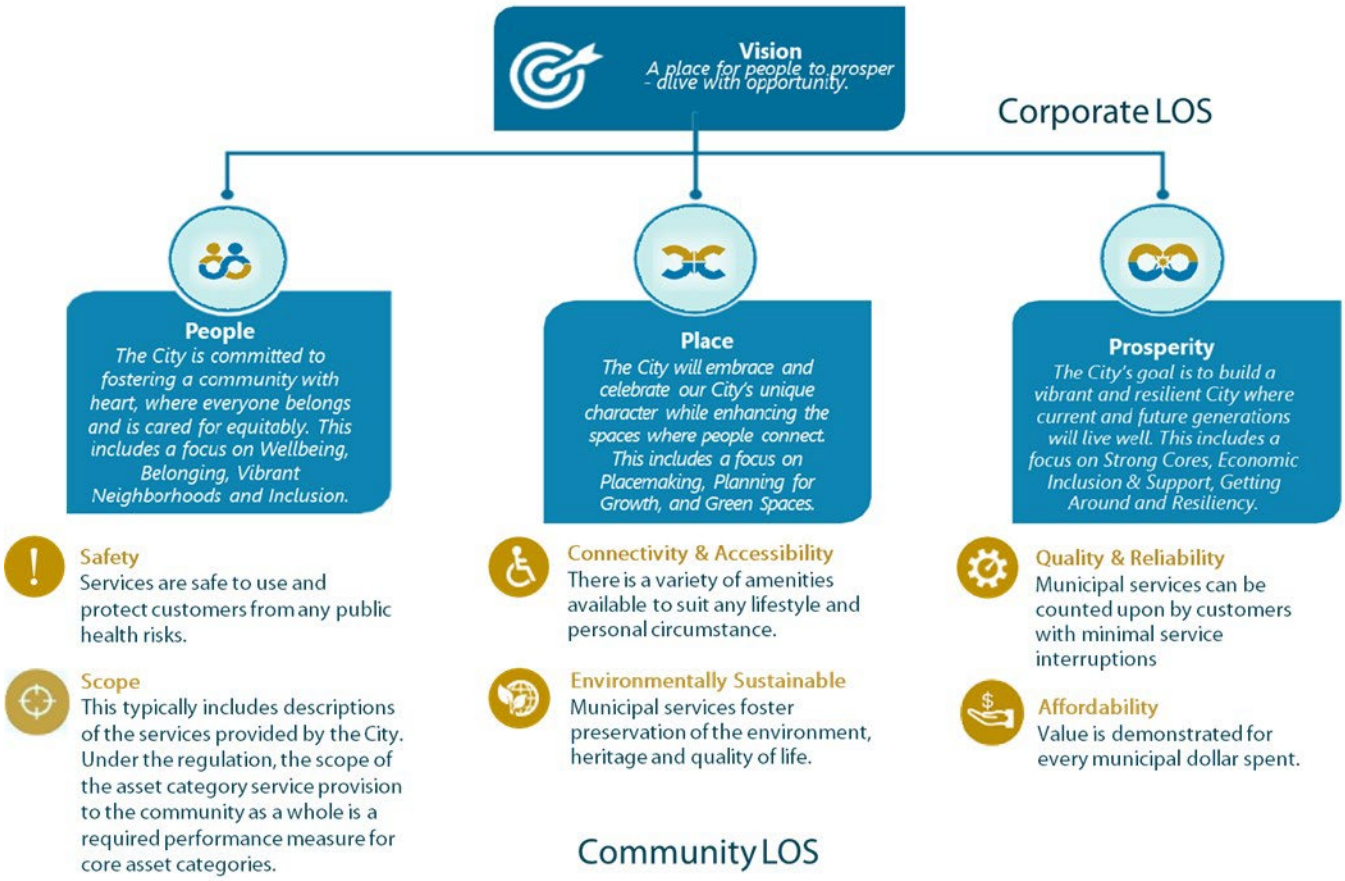
- **Corporate LOS:** Our core strategic outcomes as communicated in our vision from our Strategic Plan.
- **Community LOS:** Reflects the categories or themes that are most valued by our communities and are aligned to the Corporate LOS.
- **Technical LOS:** Detailed metrics that can be used to evaluate and report whether the community and subsequently corporate LOS are being achieved. This AMP provides the current performance of these metrics, along with target, or proposed, performance that the City would like to achieve. These measures include the following:
    - O.Reg. 588/17 mandated LOS measures (core assets only)
    - Percentage of replacement value of assets rated "Very Poor" (or "Poor")
    - Percentage of replacement value of assets used for operations & maintenance activities
- **Key Performance Indicators (KPIs):** Detailed metrics that can be used to evaluate and report whether the community and subsequently corporate LOS are being achieved. For the purposes of this AMP, these are values that the City cannot set a specific target to but will assist the City in documenting their progress in implementing the asset management strategies developed in this plan.

We have undertaken several LOS initiatives to determine the baseline services provided by our assets within all service areas before proceeding with the development of our Framework. As part of these exercises, we have considered a comprehensive suite of technical measures and KPIs for each of our asset portfolios beyond the minimum levels of service outlined within O.Reg. 588/17.

The LOS Framework we have developed has been designed with two important objectives in mind to ensure that the measures are appropriate for the municipality. First, the measures are predominantly asset-focused, i.e., they are primarily influenced by the asset base as opposed to secondary factors, such as process or people. Second, the measures are quantifiable, allowing for data collection to enable reporting.

Our LOS Framework, complete with definitions for each of the Community LOS, is illustrated in Figure 10.

Figure 10: Corporate and Community LOS Framework



The Framework effectively aligns the LOS to the issues and outcomes that are most important to Cambridge. It provides asset managers with insight into how capital and operating investments can translate into front-line service outcomes. The approach accommodates a variety of functions and asset classes, all within a common structure, and is adaptable, allowing for modifications to the various levels as organizational objectives and standards evolve over time.

The Framework builds upon Cambridge's 2024-2026 Strategic Plan, creating a line of sight between the community-informed objectives set out by the Strategic Plan and the mechanisms that will be used to monitor performance. In addition, the Framework reflects the collective vision of the community as the customer levels of service are informed through the extensive community engagement undertaken for the Strategic Plan.

Current Levels of Service

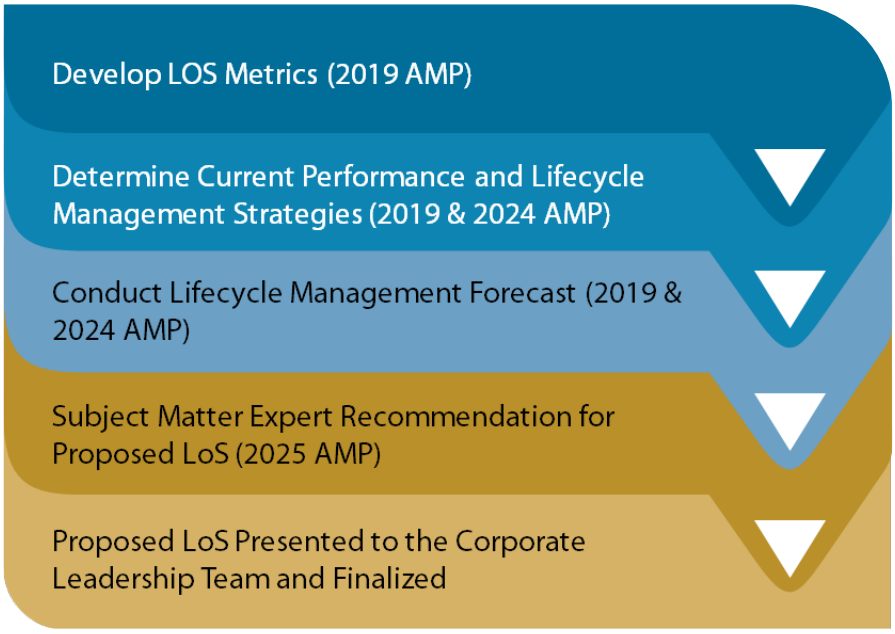
Current LOS refers to the existing performance or service delivery that a municipality or organization provides to its community or customers through its infrastructure assets. O.Reg. 588/17 requires that the current performance of each category of municipal infrastructure assets be measured using both technical and community metrics, for both the regulated metrics for core, as well as the municipalities chosen metrics. The current performance was reported in the 2024 Interim AMP, and have been included in this plan as well, and updated where possible.

Proposed Levels of Service

The proposed LOS refers to the future standard of performance that the City wants its infrastructure and services to achieve. It sets clear goals for service quality, helps prioritize investments and maintenance, and it shows the public what improvements will cost to deliver.

Considering the analysis of the lifecycle management strategy, along with factors such as risk, current condition, community expectations, data reliability, affordability achievability, compliance and expert recommendations, the proposed level of service was set. This process is outlined in Figure 11.

Figure 11: Process for Setting Proposed LOS



Staff and the Corporate Leadership Team (CLT) were tasked with providing the recommended Proposed LOS. Following the approval of this AMP, the City is required to provide an annual update to Council on the progress implementing this plan. Updating the LOS and KPI metrics on an annual basis will allow the City to assess if the service delivery goals, financial commitments, and infrastructure performance are meeting expectations, and allow an opportunity to adjust the targets, investment strategies, and risk mitigation measures if needed.

Asset Lifecycle Management Strategy

Lifecycle management of assets refers to the series of activities undertaken to ensure optimum value and service delivery is obtained from assets through all stages of an asset's life. The activities within these stages are determined by the outputs of a range of planning processes such as this AMP, master planning, and strategic plans.

The Province requires that the AMP include the lifecycle activities that may need to be undertaken to meet the City's proposed LOS for each asset category. It also requires an explanation of the risks associated with not undertaking these activities.

We have been engaged in a long-term improvement journey to progressively improve our approaches to lifecycle management to secure outcomes for sustainable service delivery, as well as deliver value for money investment in our assets.

The City has been an early adopter of innovative approaches to lifecycle management of our assets. Examples of these include:

- Participation in development of international sewer inspection standard Pipeline Assessment Certification Program (PACP).
- Application of trenchless rehabilitation methods such as lining of water and wastewater pipes.
- Software tool for capital planning roads, water and sewer mains using integrated planning approach.
- Implementation of a work management software system to support Public Works operational processes.
- Application of mobile devices to collect field data, such as for inspection of sidewalks.
- First user in Canada of 'ice pigging' technology to clean wastewater siphons. For this project the City of Cambridge received the 2017 Municipal Innovation Award.

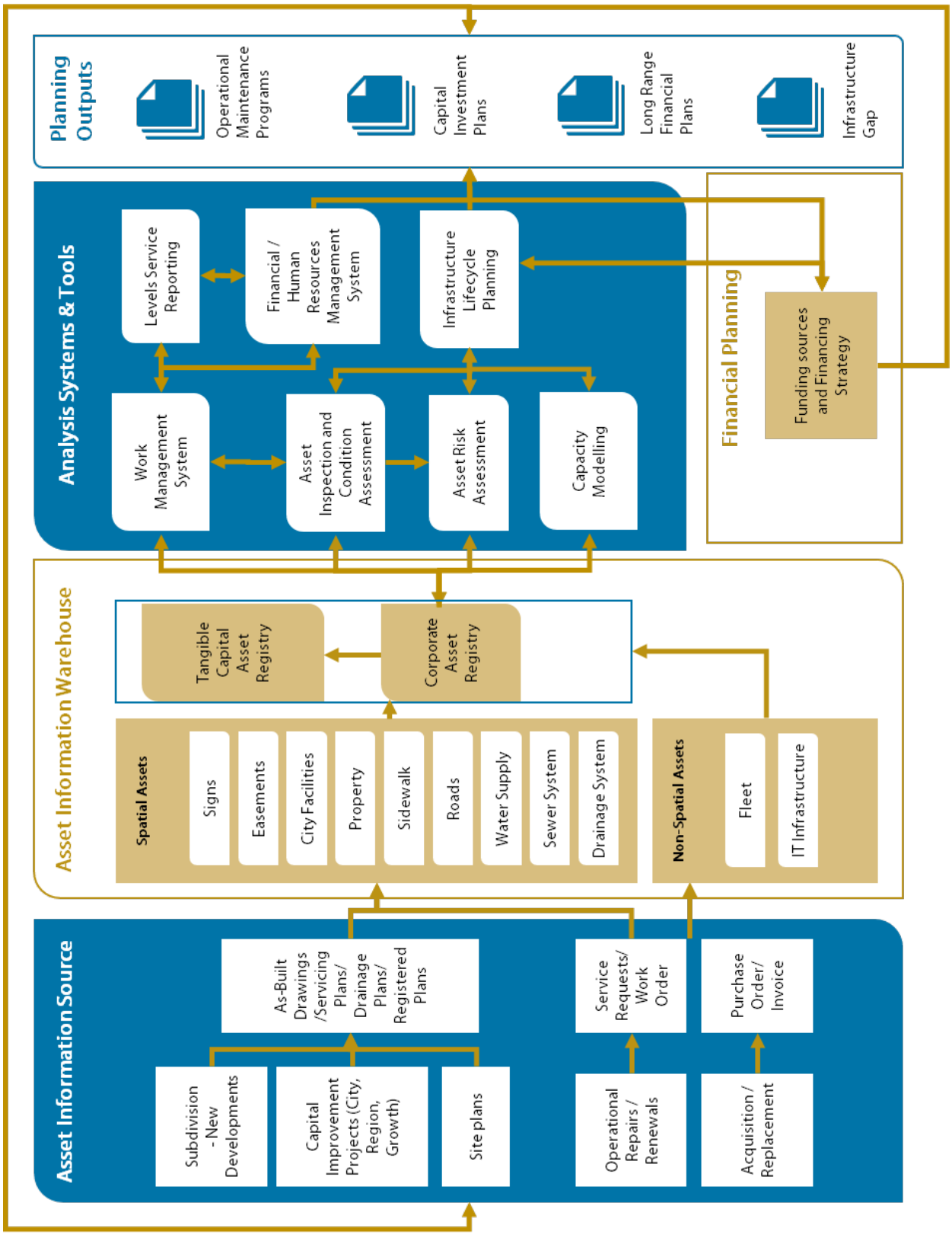
This section of the AMP describes our approach to management of assets in each stage of the lifecycle along with the associated capital and major operational expenditures associated with these phases.

Integrated Asset Management Planning

Our journey to implementing leading asset management approaches has seen the adoption of an integrated asset management planning process across multiple stages of the asset lifecycle to deliver multiple benefits including enhanced visibility of our needs, improved response times as well as identifying opportunities for synergies between service areas. This approach has enabled us to realize efficiencies in delivery of our capital needs and deliver affordable, value-added plans for our communities. Our integrated planning approach is data led and enabled by leading technologies in data warehousing, and end to end management activities executed on our assets. Furthermore, our robust processes for capturing and managing asset information described in the Asset Data Management Section ensure that asset data captured in each process of the integrated approach is available to support planning and reporting processes. Our Integrated Asset Management Planning process is represented in

Figure 12 commencing with asset information sources and activities that generate information stored in an asset information warehouse comprised of multiple databases. This information is then used in various analysis systems and tools to support the development of our strategies, plans and inform decisions for investment. The integrated approach is iterative with data informing workflows and updates throughout systems to ensure consistency, ongoing visibility of asset condition and continuous improvement.

Figure 12: Asset Management Planning Process



Non-Infrastructure Solutions

At Cambridge, we are committed to managing our portfolio of assets to continue providing existing services along with supporting future residential, commercial and industrial growth. We ensure that we invest and develop our infrastructure to maintain service delivery as our city grows and changes with an increased and diverse population. We also know that infrastructure creation and acquisition is vital to attract business and commercial opportunities to support the economic health of our area.

Our growth and master plans outline our objectives for the City's asset portfolios. These plans help to identify our infrastructure needs since our assets support us in meeting and executing the objectives. Typically, these infrastructure needs are then included in a needs assessment that is conducted for specific asset types, and/or identified within the City's Development Charges Background Study.

Operations and Maintenance

Assets spend the majority of their life in this stage of the lifecycle, generating significant costs in inspection, planned maintenance and requiring response to unplanned events influenced by a wide variety of factors. Effective O&M practices present opportunities to enhance value in this stage and minimize risks to service delivery. As such, we have implemented processes supported by leading technologies to monitor our assets regularly informing our operational planning and responses to manage risks to service delivery for our communities and stakeholders. We have invested in leading techniques to inform us of asset condition that has allowed us to adopt a more proactive approach to effect repairs and capital renewals of our transportation and environmental infrastructure to reduce instances of unplanned maintenance events and failures impacting our residents.

As part of this proactive approach, we maintain high levels of compliance with our planned maintenance, the requirements of the minimum maintenance standards and condition assessment programs to enhance our knowledge and responsiveness to our assets leading to more efficient service delivery. As a result of this efficient and value adding strategy, we invest annually in the activities required for operation and maintenance of our assets.

This section outlines our general approach to O&M of our assets. Specific operation and maintenance activities for each of our service areas is detailed within the Asset Specific Appendices.

Operations

We operate our assets according to the operation and maintenance requirements specified during the design or by the manufacturer to ensure proper function, prevent damage, minimize risk and comply with regulations. We ensure the operational procedures for our assets are clearly communicated to operators, access to manuals and operating procedural is provided, and the appropriate training and credentials needed to operate assets effectively with the capability to respond to any failures adequately are also provisioned.

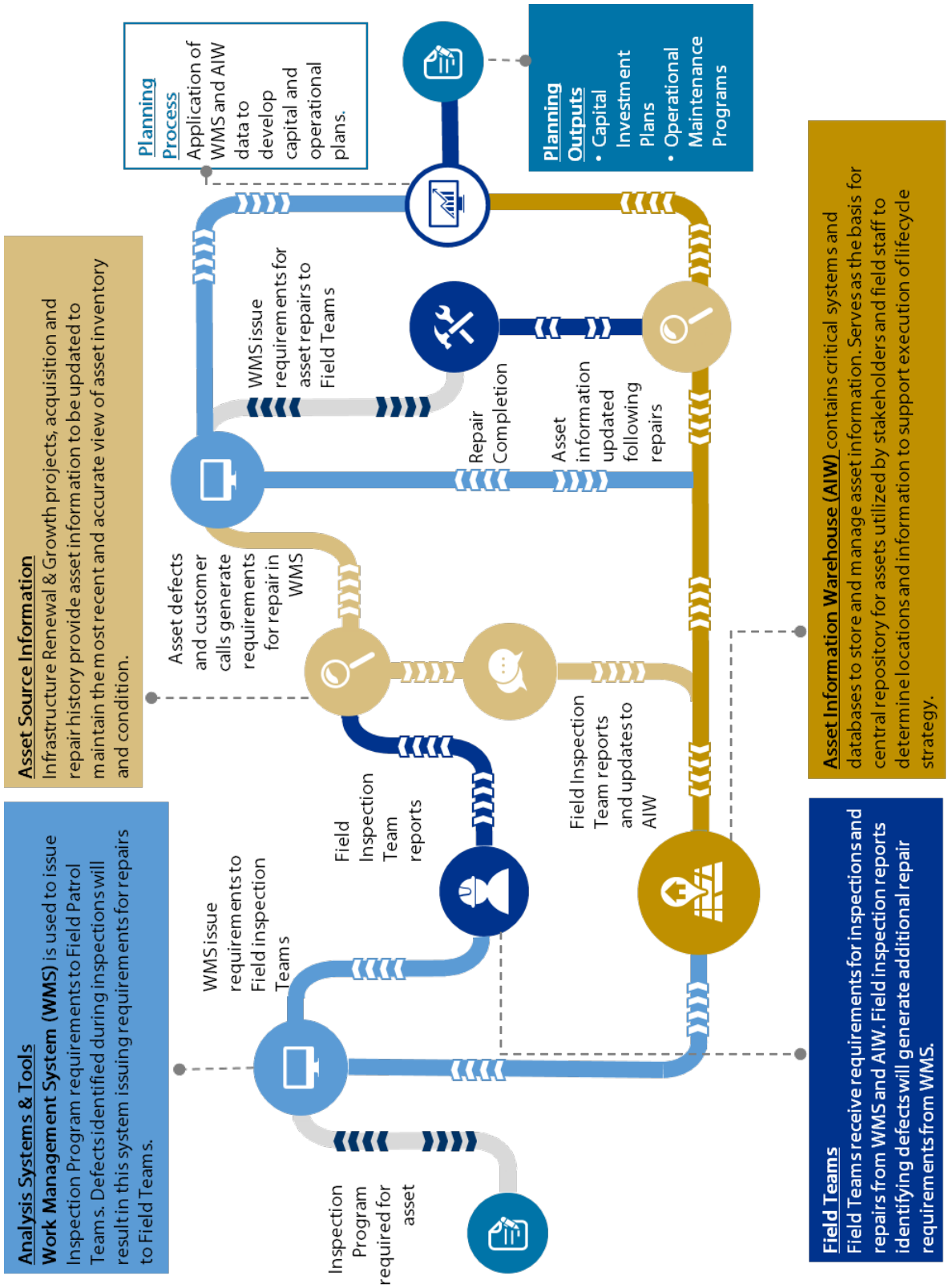
Maintenance

- **Condition Assessment and Inspection:** We regularly inspect our assets using leading practices and technology to identify any risks to asset condition and subsequent service delivery. This approach supports early identification and resolution of risks to asset operation. In addition, inspections inform the asset condition and provide valuable information for assessing risk, targeting asset renewal, and identifying investment requirements. Each asset type follows its own inspection schedule, ranging from visual inspection to data-led techniques. Inspection programs are largely maintained within the City's work management system with frequent progress reports generated to monitor progress. The majority of non-core assets at the City follow a general condition assessment process outlined in this section and in the State of Infrastructure section, with additional details included in the Asset Specific Appendices. Figure 13 presents the general condition assessment process applicable to most assets within the City with the exception of our sewer and stormwater assets that have a specific condition assessment process.
- **Planned Maintenance:** Our major maintenance needs are identified through prescribed maintenance of the assets, and inspection programs. These needs are resolved through operational maintenance activities if the cost can be borne by the operational budget. Otherwise, the major maintenance needs can be considered through the asset renewal process in consultation with Asset Management, Engineering and Operations teams on a risk-to-service delivery basis.
- **Unplanned Maintenance:** Our unplanned maintenance consists largely of repairs completed on a reactive basis identified through inspection programs, during a planned maintenance activity or operation of an asset, and through notification by our stakeholders and the public. In the event that an asset defect is identified, a corresponding report is prepared and a work order is created. The inspection report is reviewed to prioritize defects, and then the work order is distributed to contractors or internal teams for repair as appropriate to the asset. Once the repair has been performed, the repairs are inspected to ensure completeness.

Prioritization of Response

Our assets provide a wide range of services to our communities. Some of these are essential to daily life, for example, the provision of clean drinking water and waste removal. We therefore ensure that any repairs or operational responses to known asset deficiencies are prioritized on the basis of customer priorities and essential service delivery.

Figure 13: Condition Assessment Process



Rehabilitation and Renewal

As our infrastructure assets decline with age or with the influence of multiple factors, we periodically require rehabilitation and renewal to ensure their capability to maintain service delivery. Our teams engage in comprehensive, risk-based planning processes aligned to leading practices to identify the condition of our assets through inspection programs to inform investment planning and decision-making.

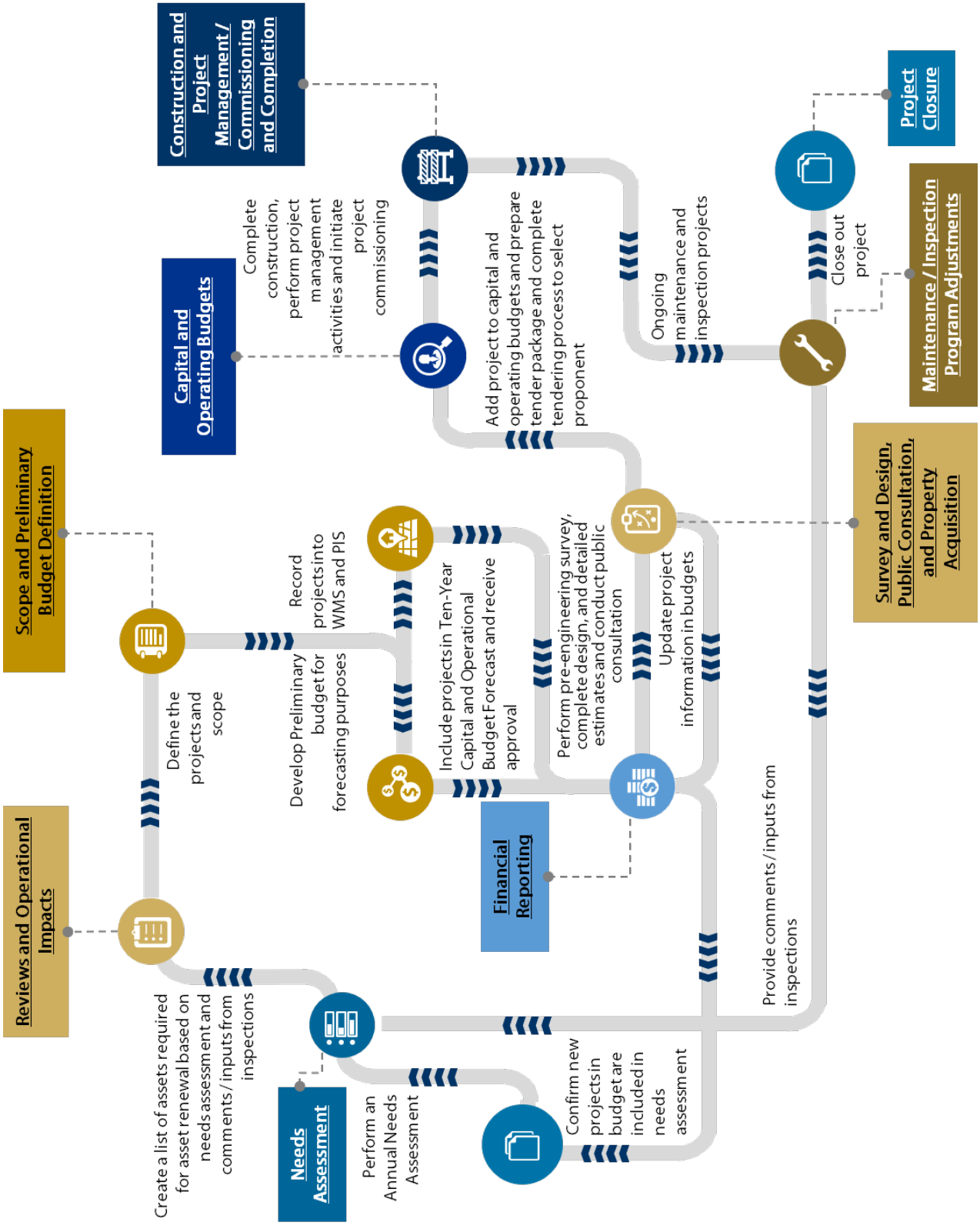
We use data driven decision-support software for the infrastructure renewal needs assessment and planning of core linear infrastructure. System identified renewal needs are reviewed for capital investment planning with respective business units and stakeholders which includes engineering, public works, Region of Waterloo, finance and utilities (Hydro, Gas, Telecommunication).

Other core and non-core infrastructure renewal needs planning is supported through ongoing condition, risk assessment processes and capacity assessment through various master plans. Corporate strategic objectives, community priorities, corporate and community stewardship (such as heritage preservation, greenhouse gas reductions, and accessibility) and changing Regulatory requirements are also considered during infrastructure renewal planning process.

Our process for targeting rehabilitation and renewal of our assets is outlined in Figure 14, at its core it consists of assessing asset needs on an annual basis. We perform an annual needs assessment to determine the assets that require renewal or replacement. Our needs assessment process considers a range of options to target the most effective solution and value for money, this includes the consideration of non-infrastructure solutions such as process or policy changes that can mitigate risk or extend asset life. Based on the assets classified for renewal or replacement, the project scopes are established along with a preliminary estimate for the projects that are included in the Ten-Year Capital Budget Forecast and are provided to Council for approval.

Following approval, the City performs pre-engineering surveys, develops detailed design drawings, and refines the project estimates to be included in the capital and operating budgets. For each of these projects, the Region of Waterloo is required to provide a Certificate of Approval, which then allows Cambridge to follow a public tendering process to determine the qualified proponent that will construct the project. After construction of the asset, commissioning and inspection activities are conducted and approval is provided to operate the asset. The asset is then deemed operational by the City. Ongoing maintenance activities are conducted on an ongoing basis, and information is filtered back to the needs based assessment annually. The Asset Management & PMO Division closes out the project by providing a Project Inventory of Asset Report to Finance and provides an update to Council.

Figure 14: Rehabilitation and Renewal Process



Growth & Service Enhancement

Growth can put pressure on municipal infrastructure as the demand for infrastructure services grows. The City can focus on expanding the capacity of its existing assets to accommodate increased usage. Population and employment forecasts can aid in estimating changing needs on the infrastructure.

The Canadian Census information published in 2021 indicated that the population of Cambridge increased to 138,479. The City of Cambridge is identified in the Greater Golden Horseshoe Growth Plan, but population and employment forecasts are not indicated for the municipality in Schedule 3 or 7. As per O. Reg. 588/17 requirements for lower-tier municipalities in the Greater Golden Horseshoe growth plan area, the forecasts are required to come from the official plan of the upper-tier municipality, which is the Waterloo Region. The Regional Official Plan (2006) outlines population and employment forecasts, which are shown below in Table 5. Based on current estimates, the population of the City was 156,000 in 2024. According to the Regional Official Plan, the City's population will rise to 176,000 by 2031.

Table 5: Population and Employment Forecasts, Regional Official Plan

Forecast	2006	2021[1]	2024[2]	2031
Population	123,900	138,479	156,000	176,000
Employment	75,220	NA	NA	102,500

The Plan identifies Downtown Cambridge as an urban growth centre, meaning that this area will be a primary business, civic, commercial, and cultural centre to accommodate a significant share of the region's future population and employment growth.

Disposal

In some cases, when an asset has reached its end of life, it may be necessary to dispose of rather than replace or renew the asset. The determination as to whether the asset can be renewed or must be replaced is informed by the inspection process. Depending on the condition of the asset, consideration is made around whether there is still a service delivery need the asset provides or a possible service delivery need the asset can fill, as every effort will be made to repurpose the asset to ensure maximum value is extracted at the asset's end of life.

In the event disposal of the asset is required, our Project Delivery or Service Area teams will coordinate with contractors and Engineering and Operations team, as necessary, to ensure safe removal of the asset or associated hazardous materials in accordance with regulations and our

[1] City of Cambridge 2021 Census, statcan.gc.ca
[2] 2024, Environics

environmental sustainability policy. Disposal costs for most assets are integrated into the capital costs of the project to replace the asset. In the event the asset will not be replaced, the decommissioning costs will be determined via the capital planning process and prioritized for inclusion in the budget.

Lifecycle Strategy Risks

Following the lifecycle strategies and activities outlined in this AMP is the City's best way to avoid risk. Ignoring an infrastructure gap and not completing lifecycle activities and strategies as outlined in this AMP can lead to a range of negative consequences, both immediate and long-term. These risks and their consequences at a high level include:

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

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

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

Improper Forecasts: Many non-infrastructure activities such as master plans, asset management planning, provide valuable insights into the infrastructure needs, if these activities are not completed, it can lead to inaccurate estimations for resource and capacity requirements.

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

Negative Impact to Quality of Life: Poor infrastructure affects the quality of life for residents, including issues like traffic congestion, inadequate public transportation, sewer backups, basement flooding, or lack of access to services.

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

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

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

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

Safety Risks: Poorly maintained infrastructure can pose safety hazards to users, workers, and the surrounding community.

Addressing infrastructure needs requires proactive planning, investment, and ongoing maintenance to ensure the resilience and vitality of the community while mitigating the various risks outlined above.

Risk Mitigation Strategies

O.Reg.588/17 requires that the City identify how the risks of not undertaking the lifecycle strategies to meet the proposed LOS will be managed. The City actively manages risks associated with the funding levels, in the following ways:

Regular Inspection: The City conducts regular inspections (frequency based on risk included age, condition and impact to service interruptions). These inspections identify any health and safety concerns and mitigation requirements. Inspections are leveraged to ensure the assets are serviceable beyond established service life and prioritize any required repairs and renewals.

Updating Condition Assessments: The City actively updates condition assessments on assets, particularly high-risk assets, to ensure assets are prioritized based on accurate condition data.

Technology & Data: The City currently leverages several systems to better understand and track information on assets, including the asset failure history, current cost of repairs and maintenance, as well as to prioritize asset maintenance and replacement activities based on the data derived from the maintenance management system.

Regulatory and Compliance Standards: The City ensures compliance with all regulatory and safety standards to avoid risk.

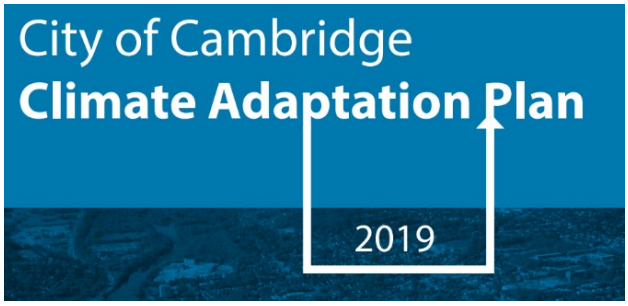
Prioritizing Assets Based on Risk: Resources available are strategically assigned to higher risk and priority assets, based on staff expertise, ensuring limited budgets are used effectively to mitigate the most risk. This is completed through the capital planning process during the development of the annual budgets. Assets are replaced based on priorities to find efficiencies to reduce impacts and implement strategic purchase cycles.

Maintenance and Rehabilitation Activities: The City continually maintains assets to the best of their ability based on the funding available to prolong asset life where possible. Any assets that are beyond their suggested service lives are provided appropriate life cycle strategies (O&M, inspection and timely repairs) to expend service life and the asset condition to maintain appropriate service levels until such time that funding is available for replacements.

For sanitary and storm assets, a spot repair capital program has been put in place to address defects to ensure asset risks are minimized and are able to continue to be used. The City also continues to complete inflow and infiltration remediation activities. For water assets, the City investigates and implements alternative rehabilitation strategies instead of completing full replacement at end of life. For all assets, regular maintenance and preventative maintenance programs are put in place to ensure assets are maintained to reach their expected service life, and where possible are still in a state of good repair beyond expected service lives.

The City is committed to maintaining the current level of service to the community, while managing risk, and in consideration of fiscal responsibility. While the City considers options to address the funding gap, these strategies will continue to be implemented and enhanced to mitigate the risks associated with not meeting the proposed LOS.

Changing Climate



The City declared a climate emergency in 2019 and is actively working to meet the Council adopted target of 80% emissions reduction by 2050 through the "Energy Conservation Demand Management Plan".

Climate change can have a substantial impact on asset's lifespan, durability, and performance, posing significant challenges to infrastructure asset management. We must efficiently prepare our communities and infrastructure for climate-related hazards including flooding, rising temperatures, and extreme weather. To address the local climate risks and vulnerabilities to the infrastructure assets owned and/or managed by the City, a corporate Climate Change Adaptation Plan was released in 2019. The primary goals of the plan are to adapt and increase our resiliency to the impacts of current and future projected climate conditions (such as flooding, extreme weather events, and extreme heat) on residents, businesses, and natural and built infrastructure. This plan is considered as a complement to the City's Energy Conservation and Demand Management Plan adopted in 2020 focusing on the actions to reduce the GHG emissions from the City's facilities.

Additional details and considerations related to climate change are provided in each of the service area appendices.

Financial Strategy

As per O.Reg. 588/17, this AMP is required to provide a lifecycle management and financial strategy that includes the following:

- An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described throughout this AMP, which includes:
- The full lifecycle of the assets
- The options for which lifecycle activities could potentially be undertaken to achieve the proposed LOS
- The risks associated with the options discussed
- The lifecycle activities that can be undertaken for the lowest cost to achieve the proposed LOS
- An estimate of the annual costs for each of the 10 years for lifecycle activities
- Identification of the annual funding projected to be available to undertake the lifecycle activities
- Risk mitigation strategies

This financial strategy outlines critical inputs and considerations to guide the development of future City budgets, ensuring alignment between funding allocations and the long-term sustainability of municipal service delivery. The development of a long-term, sustainable financial strategy requires an analysis of whole lifecycle costs. The City strives to balance effective lifecycle activities with costs while maintaining current levels of service and achieving proposed levels of service.

Effective asset management planning depends on the integration of an approved AM strategy into the City's annual financial planning and budgeting process. This financial strategy analyzes the average annual funding available, compares it to the expenditure required to maintain current and proposed levels of service, and identifies any funding shortfalls. The strategy also provides recommendations on how to address the identified infrastructure gap through various non-financial and financial strategies.

The following section outlines the capital and operational investment required to sustain existing infrastructure and service delivery, as evolving needs for the growth of the community.

Budget Overview

The City's budget process is structured to allocate resources that support service delivery, maintain existing infrastructure, and fund the construction and acquisition of new assets. To achieve this, budgets aim to balance projected expenditures with available revenues and are divided into three key categories:

Operating Budget: The operating budget funds the daily operations of City services, with the exception of water, wastewater, and stormwater services. Expenditures include costs such as staff salaries and benefits, materials and supplies, utilities, and contracted services (this work includes equipment and facility maintenance). This budget supports important public services including Transportation, Emergency Services, Parks, Recreation & Culture, Library, Corporate Facilities, Information and Communication Technology, and Fleet & Equipment. Maintaining the City's assets in a state of good repair is an essential element to the effective and efficient delivery of these services. Operating costs are mainly funded by property taxes and service-specific user fees. The operating costs referenced in this AMP reflect gross expenditure (i.e. all revenues are excluded).

Capital Budget (Tax supported): The capital budget supports the City services above as identified above (again excluding drinking water, wastewater, and stormwater), including major repairs, renovating and replacing existing City assets, acquiring and constructing new assets, and advance planning and strategies to support growth or strategic investment. Financing of the capital budget is from reserves funded from property taxes, utility rates and development charges, some user fees and charges, grants from senior levels of government and/or from the issuance of municipal debt.

Water Utility Budget (Rate Supported): This budget covers the daily operating costs of running the drinking water, wastewater, and stormwater utilities. This budget determines the City's water, wastewater and stormwater rates. It also includes the necessary capital investments to maintain assets in a state of good repair.

For the purposes of this AMP, the 2025 Capital and Operating Budgets for both rate and tax supported assets have been analyzed for expenditures related to the assets identified in this plan, and were split into the following lifecycle categories to capture the full lifecycle costs associated with City assets:

- Disposal
- Growth
- Non-Infrastructure Activities
- Operations & Maintenance
- Rehabilitation
- Replacement
- Service Improvements

Only expenditures related to City owned assets are used in the analysis for this AMP. Corporate overhead expenditures are not included.

Operating Revenue and Capital Funding and Financing Sources

The City obtains revenue from various sources to fund the expenditures in the operating, capital and water utility budgets. Revenue sources include, but are not limited to, property taxes, user rates, development charges, and federal and provincial funding (grants and subsidies). These revenues are then used to fund all aspects of municipal services, which includes the funding of capital expenditures and associated debt servicing costs.

An overview of the City's revenues to fund the 2025 Budgets is included below in Figure 15, Figure 16, and Figure 17.

Figure 15: 2025 Capital Budget Funding and Financing by Source (Tax and Rate Supported)

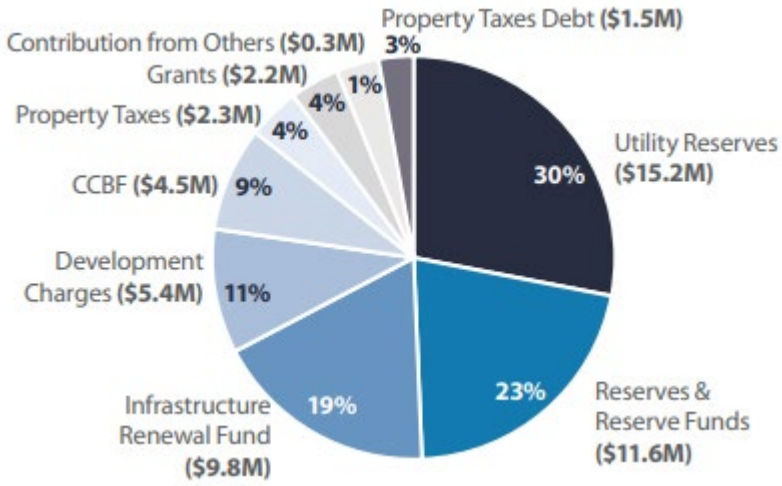


Figure 16: Tax Supported Operating Budget Revenue by Source

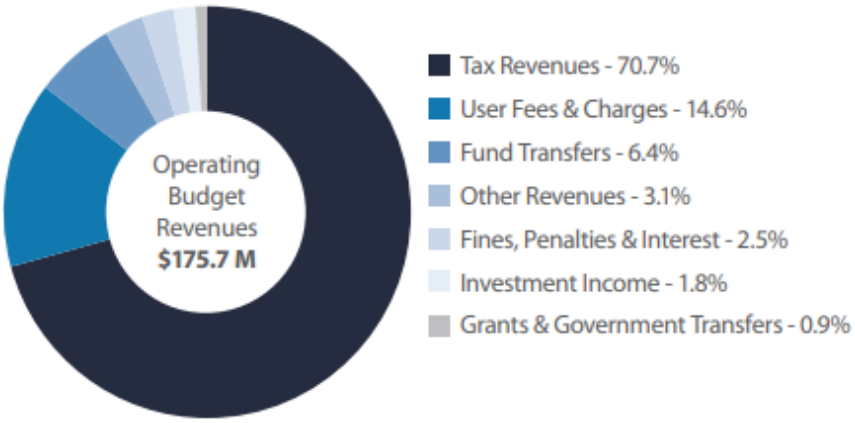
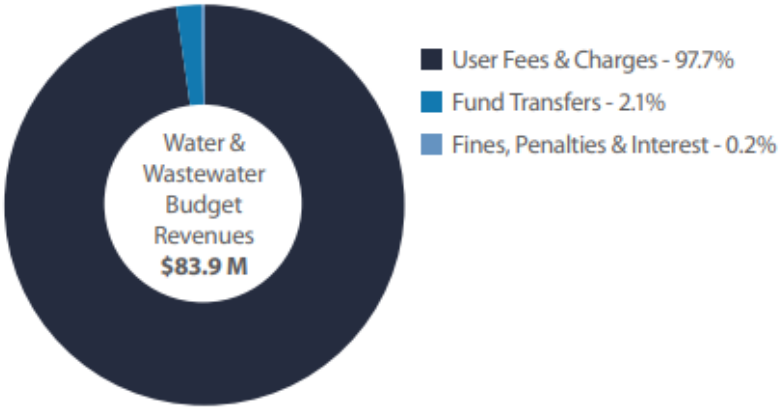


Figure 17: 2025 Rate Supported Utility Budget Revenues by Source



Planned Investments and Expenditures

The City prepares a 10-year capital budget on an annual basis, which provides funding for priority capital work and lifecycle activities based on a number of identified factors such as asset conditions and program needs.

Figure 18 provides an overview of the expenditures of the tax supported and water utility capital budgets by Lifecycle Activities. These are all the approved expenditures and does not include the unfunded activities or O&M activities. Figure 19 provides the 2025 expenditures by service sector.

Figure 18: Funded Planned Lifecycle Activities (Excluding O&M): Tax & Utility Assets

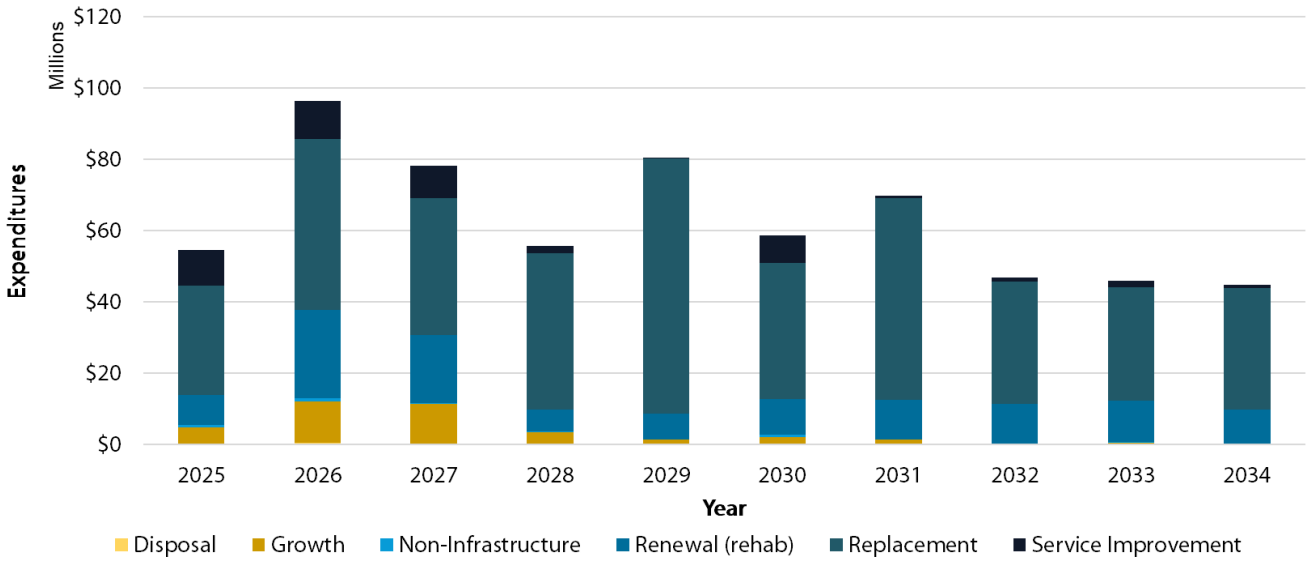
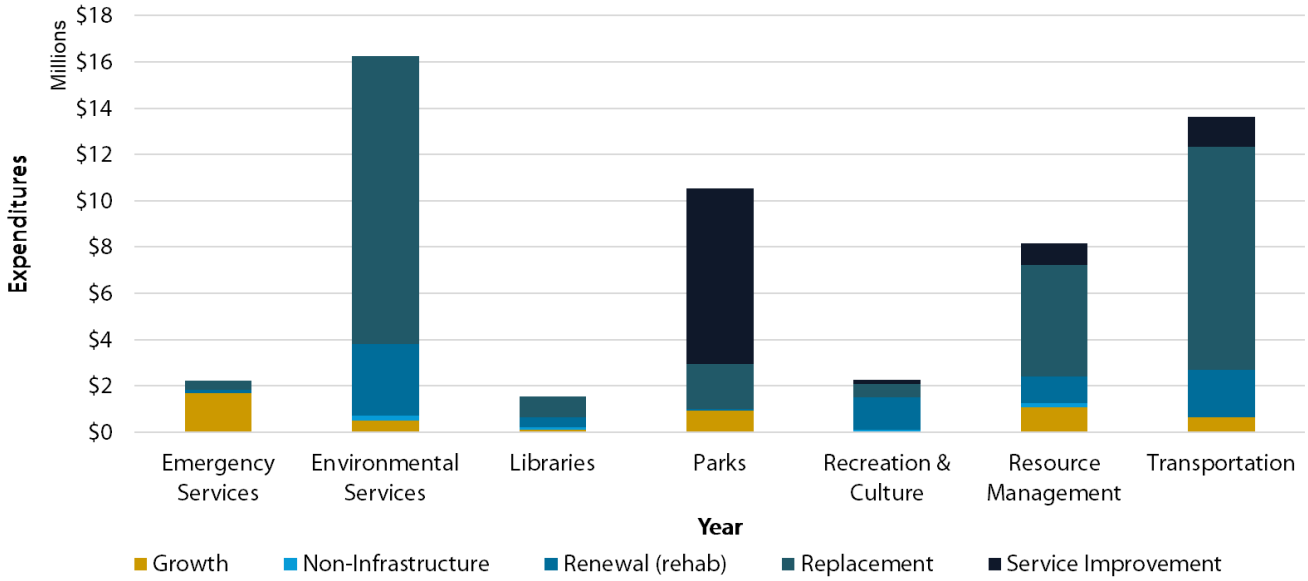


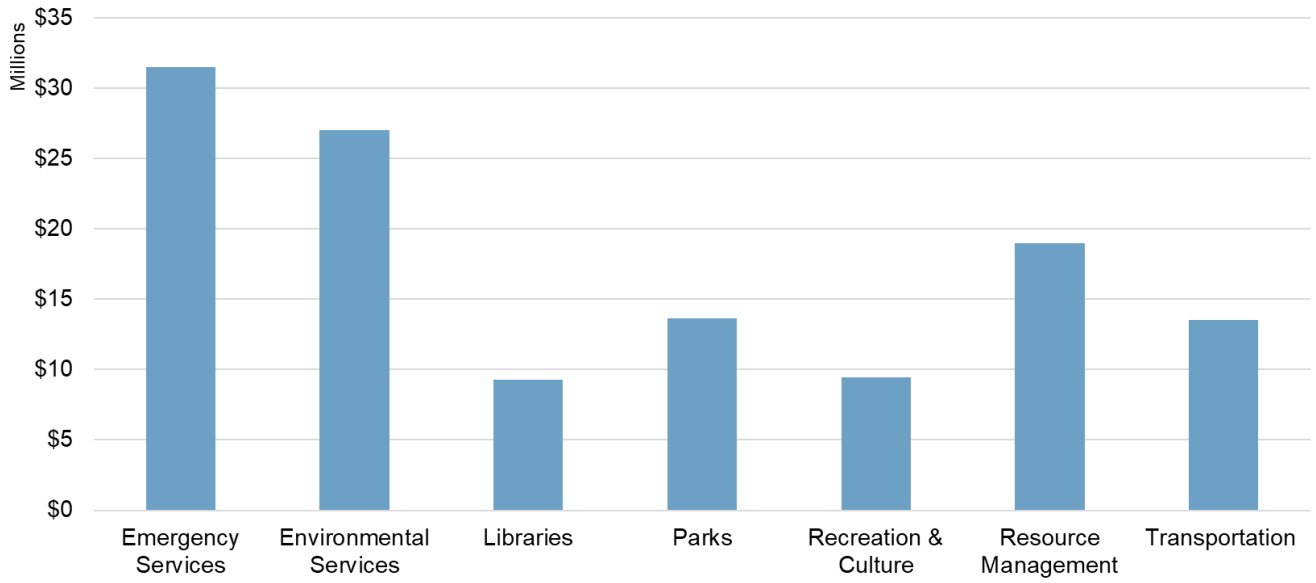
Figure 19: Funded 2025 Lifecycle Expenditures by Service Sector (Excluding O&M)



During the budget process, several initiatives are not approved due to funding limitations. Over the 2025-2034 period, $97.0M worth of projects identified as unfunded. These include projects such as a Fire Station relocation, land acquisitions, and park developments. There are also various asset renewal, rehabilitation, and replacement efforts that are currently not approved. Deferring these activities aimed at maintaining existing assets does not reduce the overall need—instead, it contributes to the widening infrastructure gap. These decisions are difficult for municipalities at budget time because they must balance competing priorities with limited financial resources, political pressures, short-term and long-term impacts, public expectations regulatory compliance, and risk.

Figure 20 provides the 2025 operating budget by service sector. The operating budget figures reflected in this AMP are expenses that have been tied to the City's owned assets and service sectors and are not reflective of the total operating budget developed for 2025.

Figure 20: 2025 Operating Budget by Service Sector



Forecasting Approach and Assumptions

The AMP aims to define the financial resources required to support lifecycle expenditures required to maintain current LOS and meet proposed LOS across all asset categories. This AMP has forecasted the needs based on utility rate assets and tax supported assets, to be in line with the City's budgets. The funding approach is based on the following key assumptions:

- **Lifecycle Cost Considerations:** The financial strategy incorporates projected lifecycle costs, including disposals, growth, non-infrastructure, O&M, rehabilitation, replacement, and service improvements, ensuring long-term sustainability. Disposal, Non-infrastructure, Growth, and Service Improvement activities were determined based on the 10-year capital budget and the operating budget. It is assumed these activities are sufficient to meet current and proposed LOS.
- **Operations and Maintenance Expenditures:** These were based on the budget analysis to determine the average spending. O&M required expenditures to address growth and meet current LOS was determined based on an analysis of the current replacement value and expected growth expenditures. This ratio was used to determine the required expenditures to maintain the percentage of Current Replacement Value (CRV) being spent on O&M.
- **Lifecycle Forecasts:** Forecasts for current LOS and proposed LOS focus on the rehabilitation and replacement expenditures required for each. Options for lifecycle activities have been considered based on the Approved Budget Scenario, Maintain Current LOS, and Proposed LOS scenarios.

- **Growth Expenditures:** Are expected to be updated upon completion of service area Master Plans for areas such as Transportation , Parks, Fire Prevention, Recreation Services, Cemetery Services, Water & Wastewater and Stormwater Management.
- **Revenue Stability:** Assumes the anticipated operating and capital expenditures are in line with the revenue available over the 10-year forecast period.
- **Prioritization of Investments:** Capital investments priorities are based on asset condition assessments and risk of service level impacts.
- **Funding Gaps and Mitigation Strategies:** The plan identifies potential shortfalls in funding and explores non-financial and financial strategies, that may be used to address this shortfall. It is assumed that the City, through the annual budget and capital planning process, will determine the appropriate strategies that will be leveraged that balance risk and LOS.
- **Lowest Possible Cost:** By following lifecycle strategies identified in this plan, it is assumed that the City provides services at the lowest possible cost, based on the best information available. The City will continue to look for opportunities to lower lifecycle costs where possible and improve on the lifecycle strategies and forecasts included in this AMP. An example of this would be a spot repair program for sanitary pipes, to improve reliability and ensure assets meet their expected service life.
- **Funding Optimization:** It is assumed the City, through the Capital and Operating Budgets for both Rate and Tax have leveraged and optimized all available funding sources.

Asset Lifecycle Expenditure Needs

The AMP aims to define the financial resources required to support lifecycle expenditures needed to maintain current LOS and meeting proposed LOS across all categories. The financial strategy incorporates projected lifecycle costs including, disposals, growth, non-infrastructure, O&M, renewal and rehabilitations, replacement, and service improvements.

The City reviewed the following scenarios to determine the appropriate proposed level of service for each asset category:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current performance (condition) of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The results have been broken out to tax supported assets and rate supported utility assets to reflect the different sources of revenue for these asset categories, and in line with the City's budgets

Figure 21 and Figure 22 compare the average annual budget, average annual cost to maintain current LOS and for proposed LOS.

For tax supported assets, the forecast shows the average annual budget is $127.7M, while to maintain current LOS would require $151.0M, which represents an average annual gap of $23.2M. This includes $18.1M capital gap, and $5.1M for operations to accommodate growth. To reach the proposed LOS target, this would require $158.1M annually for lifecycle activities, representing an average annual gap of $30.4M. This includes a $22.7M capital infrastructure gap, and $7.7M for operations to accommodate growth assets. Tax supported assets, which contribute less to the overall replacement value than the utility assets, represent more of the annual expenditures. This is attributed to the significant operation and maintenance expenditures, which includes providing valuable services to the community.

For utility assets, it shows the average annual budget is $58.8M, while to maintain current LOS would require $74.0M, which represents an average annual gap of $15.1M ($14.9 capital, and $200K operating). To reach the proposed LOS target, would require $63.4M annually for lifecycle activities, representing an average annual gap of $4.6M ($3.2M capital, and $1.4M operating). The proposed LOS was set in consideration of the current condition of the assets, affordability and achievability. Drinking Water, Stormwater and Wastewater have 19% of assets in "Poor" to "Very Poor" condition. The proposed LOS was set in consideration of the current condition of the assets, affordability and achievability.

Figure 21: Tax Supported Assets Lifecycle Expenditure Needs

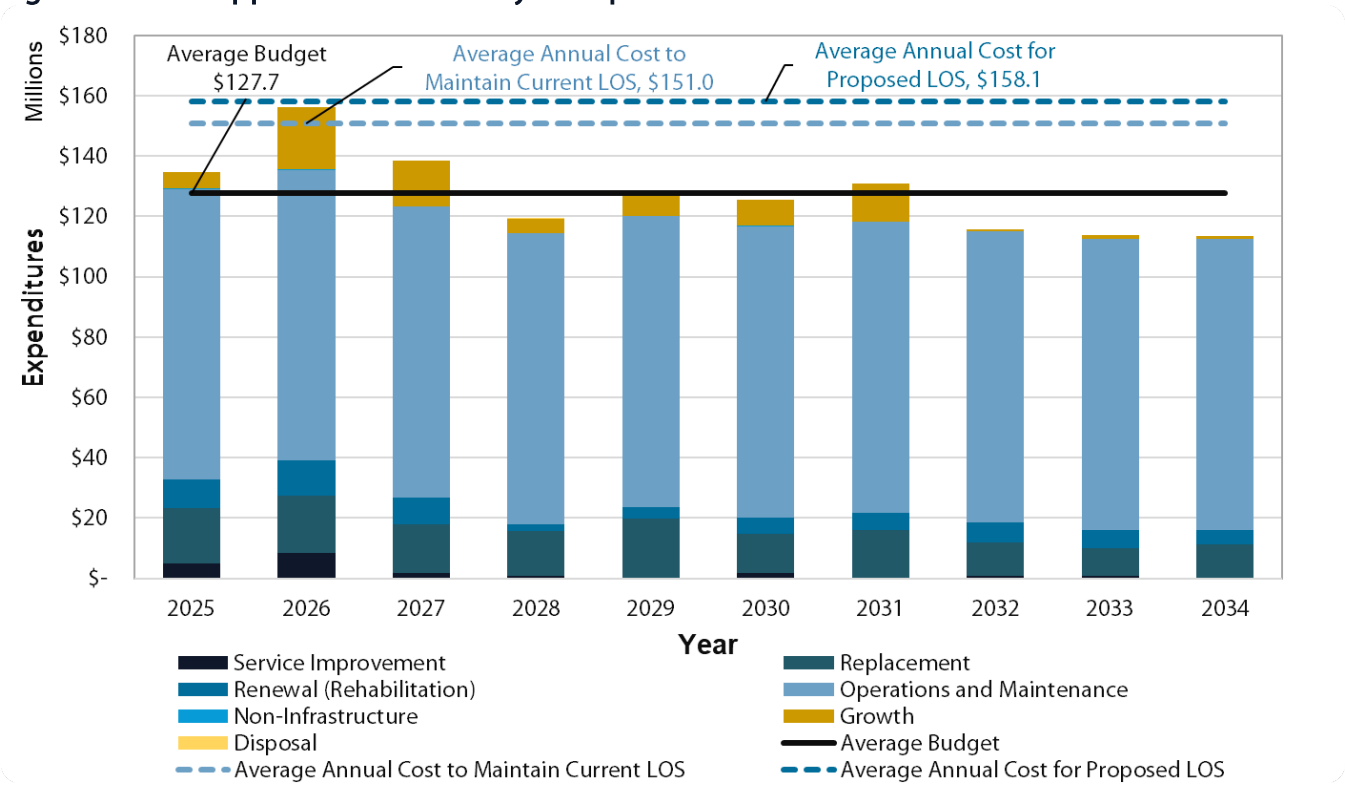
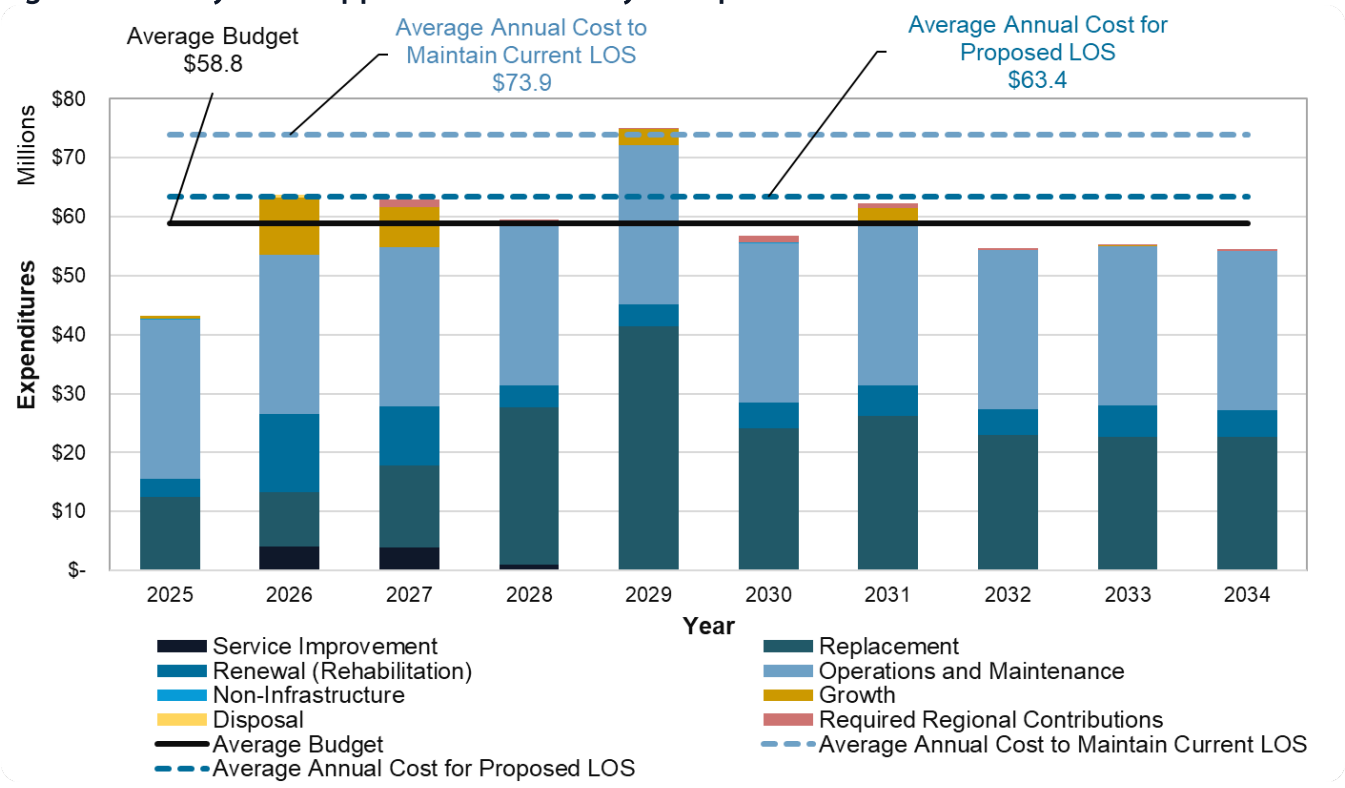


Figure 22: Utility Rate Supported Assets Lifecycle Expenditure Needs



Asset Investment Needs: Growth Needs

Growth and O&M expenditures highlighted above are presented in greater detail in Figure 23, including estimated annual funding required for O&M, and capital growth expenditures. For current LOS, expenditures for O&M were determined by estimating the requirements needed to accommodate growth. For Proposed LOS, efforts were made to quantify the cost of O&M activities to achieve the Proposed LOS through discussions with subject matter experts and considering the current state of the assets.

For this analysis, growth expenditures were informed by the City's capital budget, which documents the capital requirements for growth. The percent of current replacement value being spent on O&M was calculated and assumed to be sufficient to meet current LOS. Capital growth expenditures were added to the City's current replacement value, and the ratio of O&M spending to current replacement value was used to forecast required future expenditures. More funding is required to perform O&M activities on the increasing asset portfolio. Ensuring adequate O&M for assets is essential to make sure assets continue to provide the level of service expected from the community. For tax supported assets, additional O&M required to accommodate growth and maintain current LOS accounts for $5.1M of the total annual average funding gap, and $7.7M for proposed LOS. For utility assets, the operations gap represents $200K annually for current LOS, and $1.4M for proposed LOS. This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

Figure 23: Tax Supported O&M and Capital Growth Chart

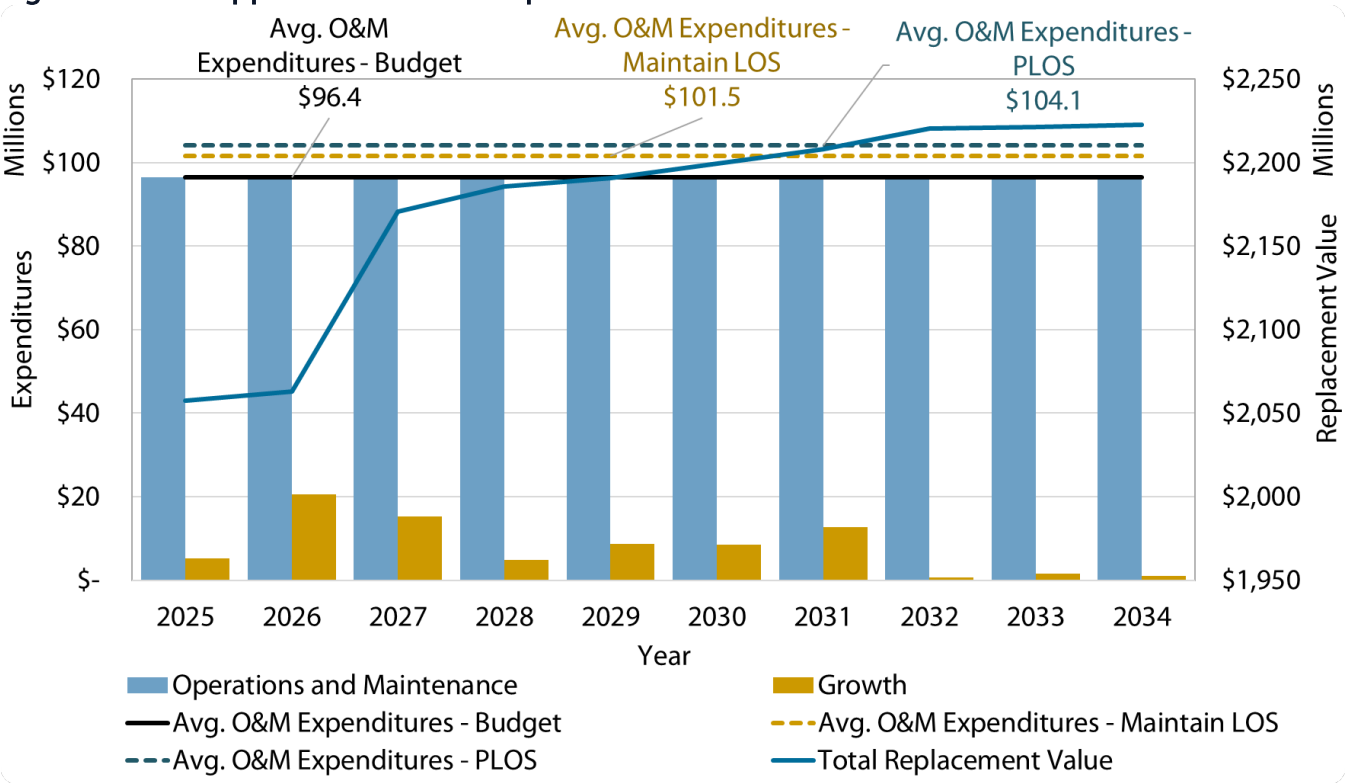
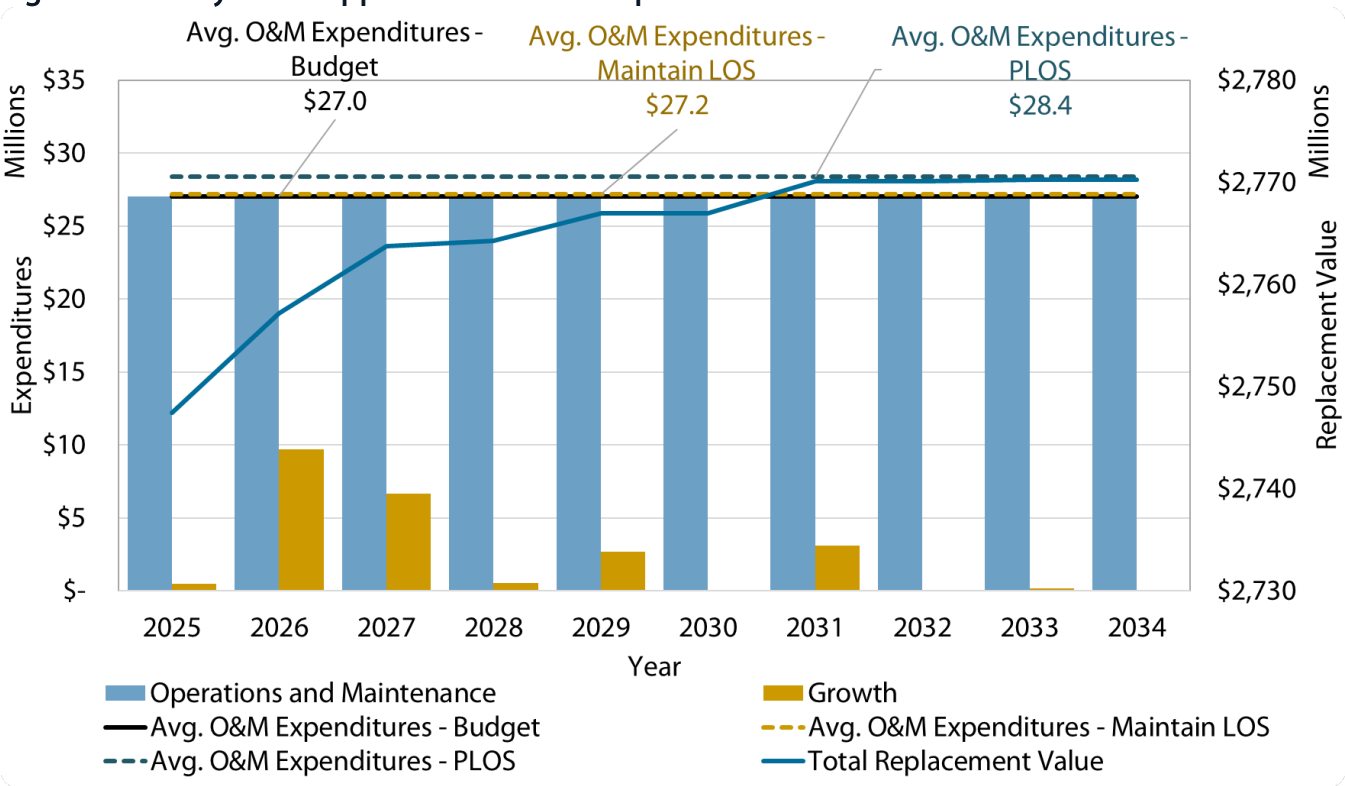


Figure 24: Utility Rate Supported O&M and Capital Growth Chart



Current Funding Gap Assessment

The City, like many municipalities, is facing challenges in consistently carrying out rehabilitation and replacement activities for its assets due to funding and resource constraints, as well as competing priorities. This can result in the accumulation of an infrastructure backlog, where necessary work outlined in lifecycle management plans is not completed in a timely manner. The infrastructure gap, as described, represents the annual difference between annual average budget and expenditures required to maintain current LOS, and proposed LOS.

Closing the infrastructure gap will require strategic planning, prioritization, and potentially exploring alternative funding sources or financing mechanisms, work which the City has already started. It is essential for the City to continue to develop comprehensive strategies that balance immediate needs with long-term sustainability to ensure the continued provision of essential services to its residents.

The following section summarizes the compiled expenditures and infrastructure gaps across all asset categories. The City is currently experiencing an average annual total infrastructure gap of approximately $34.9M for proposed LOS for both tax supported and utility assets. This represents a substantial challenge that requires strategic action. By adopting a proactive and integrated approach, the City can work toward maintaining the functionality, safety, and resilience of its critical infrastructure for the benefit of residents and businesses.

Figure 25 and Figure 26 show the City's current replacement values and funding gaps by service sectors. The City currently has approximately $4.8B in assets, with Stormwater, Water, Wastewater, and Transportation representing the highest replacement values.

Typically, infrastructure funding gaps are seen to be in line with the highest value assets however this is not the case for Cambridge, apart from Transportation. Rather, many of the City's assets which are contributing relatively small proportions to the total current replacement value are representing disproportionately large shares of the funding gap.

Table 6 provides a detailed overview of the City's assets by service type and the associated proposed LOS funding gap. Although the identified funding shortfalls are considerable, the $25.9M capital funding gap accounts for just 0.54% of the total replacement value of the City's infrastructure. This context highlights both the scale of the challenge and the opportunity to address it effectively.

Figure 25: Replacement Value by Service

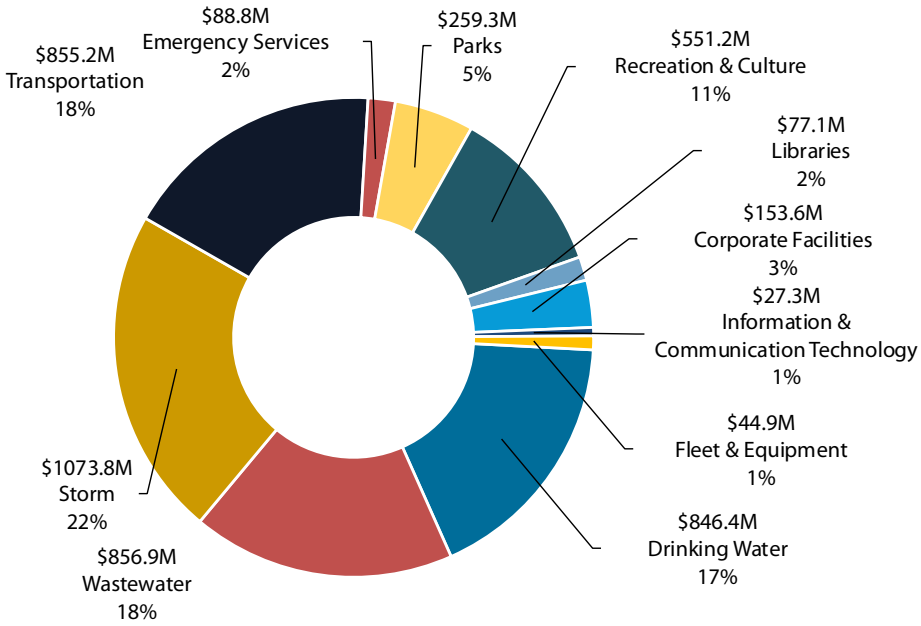


Figure 26: Capital Funding Gap by Service

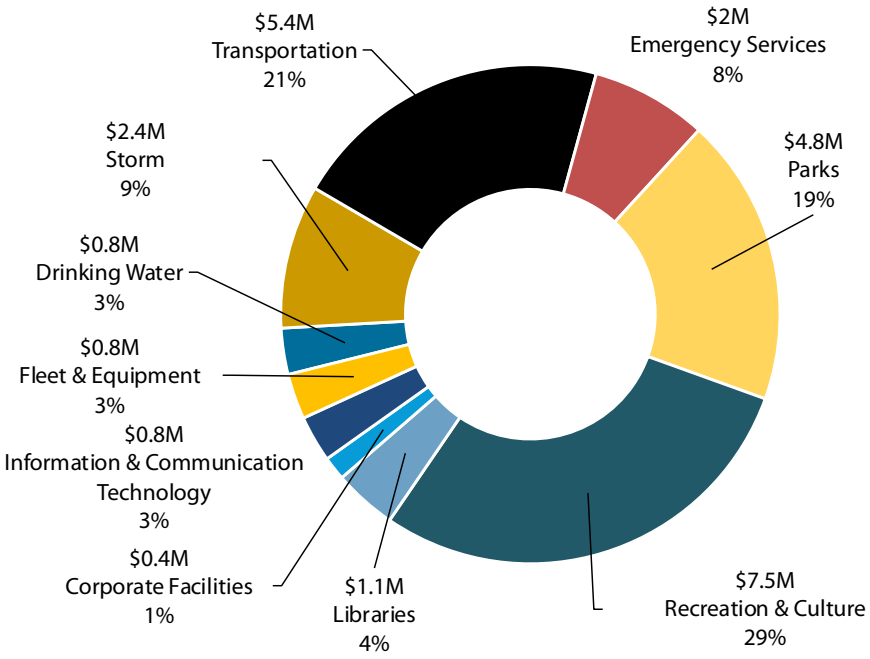


Table 6: Service Area Overview and Infrastructure Gap

Service	Current Replacement Value (CRV)	Average Annual Budget	Average Annual Need for PLOS	PLOS Capital Gap	O&M Gap	Total Gap	Capital Gap as % of CRV
Drinking Water	$846.4M	$24.8M	$25.6M	$0.8M	$0.1M	$0.8M	0.09%
Wastewater	$856.9M	$22.8M	$22.9M	No Gap	$0.1M	$0.1M	No Gap
Storm	$1,073.8M	$11.2M	$14.8M	$2.4M	$1.2M	$3.6M	0.22%
Utility Total	$2,777.0M	$58.8M	$63.3M	$3.2M	$1.4M	$4.6M	0.11%
Transportation	$855.2M	$29.2M	$35.1M	$5.4M	$0.5M	$5.9M	0.63%
Emergency Services	$88.8M	$33.7M	$37.0M	$2.0M	$1.4M	$3.3M	2.20%
Parks	$259.3M	$17.3M	$22.6M	$4.8M	$0.5M	$5.3M	1.87%
Recreation & Culture	$551.2M	$12.3M	$21.3M	$7.5M	$1.5M	$9.0M	1.36%
Library	$77.1M	$10.6M	$13.1M	$1.1M	$1.5M	$2.5M	1.38%
Corporate Facilities	$153.6M	$5.2M	$5.6M	$0.4M	No Gap	$0.4M	0.26%
Information & Communication Technology	$27.3M	$11.3M	$14.1M	$0.8M	$2.0M	$2.8M	2.85%
Fleet & Equipment	$44.9M	$8.3M	$9.4M	$0.8M	$0.3M	$1.1M	1.70%
Tax Supported Total	$2,057.5M	$127.7M	$158.1M	$22.7M	$7.7M	$30.4M	1.10%
All Assets	$4,834.5M	$186.5M	$221.4M	$25.9M	$9.0M	$34.9M	0.54%

Funding Strategies and Recommendations

To bridge the identified $25.9 capital funding gap, a thoughtful approach combining both financial and non-financial strategies is essential. Many of the recommended non-financial strategies align with best practices in asset management. Implementing incremental changes is advisable to ensure these strategies are both achievable and affordable. While these gradual enhancements to financial strategies are recommended and will substantially reduce the City's infrastructure gap, prioritizing investment in non-financial strategies is also crucial for effective gap reduction.

Non-Financial Strategies

Levels of Service (LOS) Targets

The City has set proposed LOS targets that consider risk, affordability, and achievability, in consideration of the unique needs of the various asset categories. It is recommended these metrics are updated and reviewed on an annual basis to assess the City's progress in achieving these targets. Adjustments can be made as needed to ensure that targets remain both achievable and financially sustainable while also helping to reduce the infrastructure gap.

Asset Prioritization and Asset Management Practices

As the City continues to develop its asset management program, the importance of asset prioritization and management practices becomes increasingly evident in addressing infrastructure gaps. Effective allocation of limited financial resources is crucial, and this can be achieved by optimizing investment decisions based on asset conditions, criticality, and risk. This approach ensures that resources are not diverted to low-priority assets while high-risk assets are allowed to deteriorate.

Proactive asset management is key, encompassing preventative maintenance and rehabilitation efforts. These practices help extend the life cycles of assets and reduce the need for costly emergency repairs. By implementing measures to optimize asset management processes, the City can also work towards reducing operational costs. This includes leveraging technology to gain insights into asset conditions, maintaining comprehensive asset registers, and utilizing data from computerized maintenance management systems to inform asset management planning.

Overall, a mature asset management program will enable the City to make informed decisions, prioritize investments effectively, and ensure the sustainability of its infrastructure.

Recent investments in the wastewater collection system have proven successful. The system is routinely inspected to prevent critical infrastructure failures, and because of these inspections and subsequent maintenance activities, there has been a 66% reduction in sanitary blockages since 2020, and a reduction in inflow and infiltration from 32% to 20% between 2016 and 2023. This is evidence of the City's commitment to asset management practices, and the impacts that they can have on providing value to the community.

Asset Management Data and Systems

The City is continually investing in technologies to better understand the costs associated with asset ownership and to enhance long-term prioritization and planning. When assets are tracked in a designated asset register, it provides easier reporting.

For assets already managed through a computerized maintenance management system, it is advisable to review this data to determine how it can be utilized in asset management planning. This data can provide insights into asset conditions, rather than relying solely on age and estimated service lives, potentially narrowing down the needs. If an asset is nearing or has surpassed its estimated service life but has required minimal reactive maintenance and is still in "Good" condition, it may not need to be replaced. By analyzing how maintenance data informs asset renewals and replacements, this information can be leveraged for more accurate asset management forecasting. To further enhance the City's ability to make data-driven decisions regarding asset renewal, it is recommended to invest in a decision support system. Such a system can integrate data from asset registers and maintenance management systems, apply analytics, and assist in prioritizing investments based on a combination of condition, criticality, and lifecycle cost. This would improve the accuracy and consistency of renewal planning and support more transparent, defensible decision-making.

Investment in a decision support system would assist with asset renewal investment opportunities and allow the City to run various scenarios across all asset categories to further prioritize assets based on risk.

Efficiency Measures and Lower Cost Alternatives

The City continues to explore efficiency measures and optimum cost alternatives to ensure that services are provided at the lowest possible cost. Some of these options are not able to be forecasted, so are not assumed within this AMP. An example being spot repairs of sanitary pipes, that are determined on a case-by-case basis, and that do not necessarily improve the condition of the pipe but allow the pipe to reach its expected service life. Other options like centralizing service functions, public/private partnerships and leveraging new technologies can be explored to ensure sustainable and cost-effective operations and ensure staff are provided with adequate resources to maintain assets in a state of good repair.

Sanitary and drinking water relining are one of the strategies currently in place in the City, that provides improved performance of assets, and extends their service life, while being less costly than open cut replacements of pipes.

Community Engagement

Engaging with the community to communicate the importance of infrastructure investment and potentially garner support for additional funding measures. This would also be beneficial when evaluating target performance for levels of service.

Advocacy

Advocating for increased funding support from higher levels of government and seeking partnerships with neighbouring municipalities to share resources and costs can also help address the funding gap.

Financial Strategies

Stormwater Management Funding

The City has recently moved the cost to provide stormwater management to the water bill with a separate user rate, with 50% of costs recovered through the 2025 Budget. The complete cost of the stormwater budget will be removed from the property tax bill effective with the 2026 budget. This change allows the City to establish a dedicated funding source for stormwater assets that are increasingly under pressure as a result of climate change and have been historically underfunded.

Stormwater management funding provides a stable, predictable revenue stream, reducing reliance on general tax revenue which allows for better long-term planning and investment in infrastructure. Stormwater utility or rate budgets help the municipality generate needed revenue and manage their stormwater systems more effectively and sustainably.

User Rates and Fees

The City can look for opportunities to assess the cost of providing City services to ensure that rate supported user fees include the lifecycle costing of assets and reflect full recovery of all costs. The City can implement or adjust these user fees and charges as a financial strategy to help close the infrastructure gap, particularly for asset renewals and replacements.

The City currently assesses the utility rates through the long-range financial plan for water and wastewater, and stormwater. Water, wastewater, and stormwater assets make up 57% of the City's assets valued at $2.7B, and at this time the 10-year capital renewal and replacement gap for this group of assets is about $3.1M annually.

By aligning fees with the true cost of service delivery, including long-term asset lifecycle costs, the City can ensure that the users of a service contribute proportionally to its sustainability. This approach promotes financial responsibility and helps reduce reliance on property taxes or external funding sources. Fee structures should continue to be annually reviewed and updated to reflect inflation, increased service demand, and the projected costs of maintaining assets in a state of good repair.

Special Infrastructure Levy and Capital Reserves

Prior to 2024 the City’s main sources of funding for asset renewal works were:

- An annual contribution from the Tax Supported Operating Budget to the Capital Works Reserve; and

- Annual contributions from the Rate Supported Water Utility Operating Budget to the Water and Wastewater Capital Reserves.

The contribution to the Capital Works Reserve was being inflated annually at a rate of 4%. This contribution had also historically been used to fund new infrastructure that is not eligible for development charges funding but is required to support growth and meet community expectations for improved service levels.

The last several years have seen an increase in the use of incremental tax levies by municipalities in order to build up the fiscal capacity to fund asset management needs. While they come under different names – special capital levy, capital infrastructure levy, infrastructure renewal levy – the concept is generally the same: included in the annual operating budget is an incremental provision (either a dollar amount or a percentage of the tax levy) that is transferred to a Capital Asset/Infrastructure Renewal Reserve, which then serves as a dedicated source of funding for future asset management capital works.

The ultimate goal is to achieve a level of annual funding to the reserve that will adequately fund the municipality's asset renewal capital needs over a longer term. An incremental increase in the form of an infrastructure levy can provide a reliable and sustainable source of funding, enabling the City to prioritize and address infrastructure needs over time without overburdening tax and rate payers or relying heavily on uncertain grants and external sources. Incremental tax and rate increases can help close the infrastructure gap by gradually providing additional revenue to fund the long-term maintenance, renewal, and improvement of the City's infrastructure.

As part of the 2024 Budget process, City staff prepared a business case entitled "Sustainable Infrastructure Renewal Funding". Staff proposed several options to address the need for additional funding for asset renewal works, and City Council ultimately adopted resolutions that provided for:

- The establishment of an Infrastructure Renewal Reserve Fund;
- Increased inflationary adjustments to the Capital Levy Reserve (from 4% to 6.6%);
- A re-purposing of 80 percent of the Capital Levy Reserve to be an initial contribution to the new Infrastructure Renewal Reserve Fund; and
- An incremental 1 percent contribution annually to the Infrastructure Renewal Reserve Fund commencing in 2024 and continuing until a fully sustainable infrastructure plan is achieved.

As calculated in 2024, a 1 percent tax levy amounts to the equivalent of about $17 per household and currently raises approximately $1.2 million. City Council has approved 1% incrememnts of $1.084M in 2024 and $1.187M in 2025, for a total of 2%. Table 7 sets out the continuity of the Sustainable Infrastructure Renewal Reserve Fund.

Table 7: Sustainable Infrastructure Renewal Reserve Fund Continuity ($000)

Description	2024 Actual Value	2025 Estimated Value
Opening Balance	-	$4,108
Plus: contribution from operating budget	$6,107	$8,278
Plus: incremental 1% of tax levy	$1,084	$1,187
Less: Transfer to Equipment Reserve	-$1,000	
Less: Transfer to Storm Reserve	-$2,000	
Less: funding of asset renewal works		-$9,754
Plus: interest earned	$7	$143
Closing Balance	$4,108	$3,962

One way to assess whether funding sustainability (or adequacy) has been achieved would be as follows:

1. All asset renewal projects are included in the 10-year capital plan (i.e. no projects are left out or remain unfunded); and
2. There is sufficient funding being contributed annually to the Infrastructure Renewal Reserve Fund to:
   - Fully fund the asset management capital plan over at least a 10-year period without the issuance of long-term debt (possibly with some minor temporary reserve shortfalls) or with the strategic use of debt financing for the most significant projects which aligns with the City's current practice; and
   - Account for any donated assets built and financed by developers to support growth in subdivisions.

The amount of funding in the City's capital asset renewal reserves and reserves at the end of 2024 is noted in Table 8.

Table 8: Asset Management Capital Reserve Balances (as of Dec. 31, 2024, in $000s)

Reserve	Value ($000s)
Tax Supported	
Capital Works	$1,653
Infrastructure Renewal Fund	$4,108
Fleet Equipment	$4,905
Facility Capital	$598
Facility Capital - Library	$348
Library Furniture & Equipment	$146
Subtotal – Tax Supported Balances	$11,758
Rate Supported	
Wastewater Capital	$20,954
Water Capital	$23,313
Stormwater Capital	$2,003
Subtotal – Rate Supported Balances	$46,270
Total Capital Reserve Balances	**$58,028**

The following table summarizes key outcomes of the Asset Management Plan and current reserve balances levels as it relates to capital renewal investments.

Table 9: Capital Renewal Investment Comparisons

City Services	Current Replacement Value	10-Year Capital for Renewal/Replacement for PLOS	Existing Asset Management Capital Reserve Balances
Tax Supported Services	$2.0 B	$370.7 M	$15.7 M
Rate Supported Services	$2.8 B	$353.6 M	$46.3 M

Relatively speaking, the City's rate-supported assets are better funded than tax-supported services (this is not uncommon across the province). The continued implementation of the 1 percent increment to the tax-supported Infrastructure Renewal Levy will be critical to ensure the capacity of the City to undertake the necessary capital works to mitigate risk to service delivery without incurring onerous amounts of long-term debt. In addition, as capital costs continue to escalate, it will

be essential to adjust the reserve contribution at the rate of construction cost inflation so as to not fall further behind the required funding level.

Having a dedicated infrastructure levy is a best practice in maintaining assets and provides municipalities with a more predictable multi-year funding commitment that is based on projections of long-term infrastructure needs. The infrastructure renewal fund contribution is recommended to be reviewed at the beginning of each Council term after receiving an updated State of Infrastructure report from staff. The special infrastructure renewal levy should remain in place until a fully funded infrastructure renewal plan is achieved.

Improving the quality of asset management data at the City along with incremental funding and the implementation of other financial and non-financial strategies can all contribute to achieving the goal of asset management funding sustainability over time.

Strategic Use of Debt Financing

When debt financing is required, the City leverages the Region of Waterloo's long-standing Moody's AAA credit rating to obtain the most competitive rates available in the debt capital markets. The strategic use of debt financing is an essential component of long-term financial sustainability planning for a growing and asset intensive municipality such as the City of Cambridge. While the City currently has a low level of debt outstanding and modest debt servicing costs, it has approved debt to finance a number of significant projects including a new Recreation Complex and other recreation facilities, as well as certain road projects. The City has the fiscal capacity to debt finance new and transformative investments to serve a growing City and to meet service level expectations.

The Province, through O. Reg. 403/02 under the Municipal Act, imposes a limit (referred to as the Annual Repayment Limit or ARL) on the amount of debt service charges for long-term debt that a municipality can incur. The ARL regulation requires the debt service charges associated with a municipality's long-term debt to not exceed 25% of the municipality's net own-source revenues. If a municipality wants to authorize a new capital work that would cause it to exceed its ARL, it needs to obtain prior approval from the Ontario Land Tribunal.

The City's most recent ARL published by the province in 2024 indicates that the City's debt servicing costs are at 3.4% of own-source revenue. The City's more recent internal projections with consideration for additional approved debt by Council put the current level at 3.7%. Given its capacity to issue new debt, the City could consider debt financing some of its most significant asset renewal projects as set out in its 10-year Capital Budget. This would allow asset renewal works to proceed at the optimal time to achieve the level of service goals, at a time when there may not be sufficient reserve or grant funding available. Debt financing also allows for the cost of significant replacements and renewal works to be spread over a growing property assessment base and a broader range of customers who will ultimately benefit from the infrastructure.

Examples of asset renewal works that could be considered for debt financing in the 2025-2034 Capital Investment Plan, totalling $38.4M include:

- Riverside Dam Construction (currently forecasted as debenture funded)
- Soper Park Pool (currently forecasted as debenture funded)
- Townline Road Reconstruction (currently forecasted as debenture funded)
- Accessible Ball Diamond

Other examples also include:

- Ainslie Street (associated with a Regional project)
- Elgin Street North (Glamis Road to CP Rail Crossing) Phases 1 and 2
- Wellington St. and Brook St. Reconstruction
- Cooper Street Reconstruction
- Main Street Reconstruction
- Winter Materials Storage Facility Replacement

The above list is not intended to be exhaustive. Many of the above projects are funded from multiple budgets including Transportation (tax supported) and water, wastewater and storm water management (all rate supported). The decision to issue debt to finance a given capital project will be made as each project is approved through the City's annual budget process, and the decision will be influenced by such factors as:

- The balance available in capital reserves;
- Debt capital market conditions and prevailing interest rates;
- Cash flow needs;
- Future budget capacity for new debt servicing costs and the source of funding (e.g. property taxes, water rates, wastewater rates or stormwater rates), and
- Debenture requirements for other projects (e.g. growth and service improvement-related).

The City's current Debt Management Policy effects further conservative limits on debt servicing costs beyond the 25% provincial limit. This is often common practice across many municipalities. The City's policy limits tax-supported debt servicing costs to 10% of own-source revenue and rate-supported debt servicing costs to 15% of user rate revenues. As the City issues debt over the period of the capital forecast, it is projected that the City will reach its internal debt capacity limit of 10% for tax-supported services. Projections also show that rate-supported debt servicing costs will remain well within the 15% internal limit. The City may wish in future to consider a higher internal limit on the tax-supported side and take on some additional debt financing which could help to lower the gap and upgrade key assets at the optimal time. That being said, it is acknowledged that the resulting debt servicing costs will increase property taxes each year.

Increase long-term investment returns by adopting the Prudent Investor Standard

The City of Cambridge has an Investment Policy that sets out eligible investments as well as portfolio issuer and sector parameters. The policy provides a framework for the optimal utilization of investments providing the highest investment return within statutory limitations and the need to protect and preserve capital while maintaining solvency and liquidity. The policy allows for the City

to invest in securities issued by Canadian governments (federal, provincial and municipal), certain boards, schools and financial institutions, as well as investment funds managed by ONE Investment. These are all eligible investments under the Municipal Act and O. Reg. 438/97 and are commonly referred to as the "legal list". The most recent update to the City's Investment Policy was in Q1-2025.

The City in future may consider adopting the Prudent Investor Standard under Section 418.1 of the Municipal Act. Though much of the investment planning criteria is encompassed in the City's existing investment policy, this Standard allows for an expanded set of investment opportunities which, in the long term, can help municipalities achieve a higher level of risk-adjusted investment earnings. A change to this investment governance model is permanent and involves the appointment of an investment board or joint investment board with other municipalities and excludes member of Council and staff (except for the Treasurer).

In terms of investments, generally even a small increase in the annual net yield on the City's investments can make a difference in terms of the funding available in its capital, stabilization and contingency reserves to meet its future asset management needs and corporate obligations.

Targeted application of the City's Operating Budget Surplus Allocation Policy

The City's Year-End Operating Surplus Allocation Policy accurately describes year-end operating surpluses as "one-time funding that cannot be relied on to recur on an on-going basis." The policy provides that any year-end operating surplus should only be allocated towards one-time, non-recurring expenditures such as capital project funding, reducing debt requirements, replenishment of reserves and reserve funds or allocations to reserves and reserve funds to achieve targeted levels.

The policy guidelines for the allocation of surplus provide that after a small number of specific reserve allocations (e.g. identifiable operating reserves), and a minimum of 50% of remaining funds thereafter be distributed to the Rate Stabilization Reserve, that any residual remaining surplus be "directed towards the reduction of future debt requirements and/or other reserves/reserve funds identified by the Chief Financial Officer as underfunded." Given the magnitude of future asset renewal investments needed to achieve and maintain service levels, it recommended that the Infrastructure Renewal Reserve Fund be considered as a primary recipient of any unallocated annual Operating Budget surplus, especially in the event where the Rate Stabilization Reserve has reached its maximum target. This will reduce the funding gap and minimize the need for future debt financing of asset management projects, thereby retaining the City's fiscal capacity to debt finance significant investments in new and expanded municipal infrastructure.

Grants & Contributions

The City will continue to leverage and seek further available grants and contributions. Although these grants are challenging to estimate and forecast and should not be relied upon as a consistent future funding source, the City can leverage them to help address expenditures and alleviate financial pressures. The analysis within this AMP includes the funding currently available and forecast to be available for infrastructure, including the Cananda Community Building Fund (CCBF).

Growth & Development

Promoting development in strategically located, cost-efficient areas helps maximize tax and rate revenue while minimizing the financial burden of infrastructure and service expansion. By focusing growth in areas with existing utilities, transportation networks, and public services, the City can enhance fiscal sustainability, reduce long-term maintenance costs, and improve overall efficiency. This approach supports responsible urban planning, encourages higher land productivity, and increases revenue. The Region continues to update and refine financing plans through the annual budget process to include additional revenues generated from growth.

It is recommended upon completion of updated master plans that Development Charge Update Studies be completed to ensure that development charges are keeping in line with the needs of growing infrastructure. It is also recommended that though Development Charge legislation permits a 10-year lapse between fulsome Background Study completions, the City undertake this work no more than 5 years for the same purposes as ensuring development charges maintain pace with the increased growth infrastructure requirements. The City currently does not have a parkland dedication by-law however work is currently underway as identified as a recommendation within the Parks Master Plan.

Asset Divestitures

It is recommended to sell non-essential assets to generate revenue and reduce maintenance costs where feasible. This is not an applicable option for all asset types, such as linear infrastructure, and careful consideration of assets for possible divestiture should be undertaken prior to implementing this strategy. The asset's relevance to core services and community value should be evaluated, along with consideration of the asset's condition, financial implications, legal and regulatory review, and engagement with stakeholders. The City may consider alternative uses or partnerships for an asset rather than divestiture to ensure future community needs are met.

Public-Private Partnerships

A public-private partnership is a cooperative arrangement between the public and private sector. The City is successfully using this strategy to deliver ice facilities to residents. Under this model, the City works with a third party to have them expand infrastructure that supplies municipal services which otherwise the City would have to provide. The City continues to explore opportunities for more public-private partnerships to deliver services, in particular in the area of Recreation service growth. Future partnerships could reduce the City's capital needs.

Sponsorship Strategy

The City currently has an approved Sponsorship Strategy that outlines the City's approach to accepting sponsorship for facilities and assets. Work is currently underway on updating policy which will additionally outlines what the funds generated are used for (i.e. the sustainability of those facilities).

These various strategies will continue to be reviewed by the City and decided on during the budget process. By implementing a well-rounded combination of financial, operational, and policy-driven strategies, the City can more effectively address its growing infrastructure gap. This integrated approach enables the City to prioritize essential investments, extend asset lifespans through improved lifecycle practices, and direct limited resources to where they will have the most meaningful impact.

With proactive planning and targeted investment, the City can uphold and enhance service levels, ensuring infrastructure continues to meet the needs of today's residents while preparing for future growth. These strategies promote long-term fiscal responsibility by balancing resident affordability with the need for continuous asset renewal and replacement. It reinforces sound asset stewardship by embedding financial planning, risk assessment, and performance tracking into both daily operations and long-term strategic planning.

In doing so, the City is better positioned to remain resilient amid economic, environmental, and demographic shifts while ensuring its infrastructure supports a safe, vibrant, and sustainable community for generations to come. This financial framework also offers critical insights to guide future budgeting, helping establish sustainable funding levels for the delivery of municipal services.

Ongoing O.Reg. 588/17 Journey

At Cambridge, we have long recognized the benefits of adopting leading practice asset management approaches working progressively to implement leading practice approaches that support sustainable service delivery efficiently while managing risks.

With the introduction of O.Reg.588/17 for Asset Management, we have furthered our approaches to develop an AMP that is fully compliant in order to meet the third and final phase in 2025. We recognize that this is an ongoing process of improving our asset management practices so we remain committed to continuing this journey to complete an updated AMP every 5 years as required by O.Reg 588/17.

O.Reg. 588/17 Compliance

Through development of the 2019 AMP and 2024 interim report, the City completed the first two phases as required by O.Reg. 588/17. This updated AMP represents full compliance with the 2025 deadline for phase 3.

Table 10 provides a summary of the information required for the AMP in accordance with this regulation and outlines the sections of the document where this information is presented. As shown, specific information for each asset category can be found in the Asset Specific Appendices (A-K).

Table 10: O.Reg. 588/17 Compliance

Topic	Summary of AMP Requirements	Compliance
General	The municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2021 (Phase 1), and in respect of all of its other municipal infrastructure assets by July 1, 2024 (Phase 2). The municipality shall prepare a revised asset management plan for July 1, 2025 (Phase 3) to include proposed levels of service, financial strategy and asset lifecycle management strategy.	**Compliant** Appendices A-K
General	The municipality must post its current strategic asset management policy by July 1, 2019 and asset management plan on a website that is available to the public, and shall provide a copy of the policy and plan to any person who requests it. The municipality shall review and update its asset management plan at least five years after the year in which the plan is completed and at least every five years thereafter. Every asset management plan prepared or updated, must be, • endorsed by the executive lead of the municipality; and • approved by a resolution passed by the municipal council. Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed. • The annual review must address: • The municipality's progress in implementing its asset management plan; • any factors impeding the municipality's ability to implement its asset management plan; and • a strategy to address the factors impeding municipalities' ability to implement its asset management plan.	**Compliant** Plan Governance

Topic	Summary of AMP Requirements	Compliance
State of Infrastructure	**Required for Phase 1 for core assets, Phase 2 for non-core assets:** For each asset category: • A summary of the assets in each category • The replacement costs of the assets in the category • The average age of the assets in the category • The information available on the condition of the assets in the category A description of The municipality's approach to assessing the condition of the assets in the category	**Compliant** State of Infrastructure Appendices A-K
Current Levels of Service	**Required for Phase 1 for core assets, Phase 2 for non-core assets:** For each asset category, the current levels of service being provided, determined in accordance with qualitative descriptions and technical metrics, based on data within the past two calendar years; • With respect to core municipal infrastructure assets, the qualitative descriptions and the technical metrics set out in the Regulation. • With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality. • The current performance of each asset category, determined in accordance with the performance measures established by the municipality, based on data within the past two calendar years.	**Compliant** Levels of Service Appendices A-K

Topic	Summary of AMP Requirements	Compliance
Proposed Levels of Service	**Required for Phase 3 (July 1, 2025):** For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following, is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics: • With respect to core municipal infrastructure assets, the qualitative descriptions and the technical metrics set out in the Regulation. • With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality. An explanation of why the proposed levels of service are appropriate for the municipality, based on an assessment of the following: • The options for the proposed levels of service and the risks associated with those options to the long-term sustainability of the municipality • How the proposed levels of service differ from the current levels of service • Whether the proposed levels of service are achievable • The municipality's ability to afford the proposed levels of service. The proposed performance of each asset category for each year of the 10-year period, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.	**Compliant** Levels of Service Appendices A-K
Asset Lifecycle Management Strategy	**Required for Phase 3 (July 1, 2025):** For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service for the next 10 years and the costs of providing those activities based on an assessment of the following: • The full lifecycle of the assets; • The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service; • The risks associated with the options for lifecycle activities; and • The lifecycle activities defined that can be undertaken for the lowest cost to maintain the current levels of service.	**Compliant** Asset Lifecycle Management Strategy Appendices A-K

Topic	Summary of AMP Requirements	Compliance
Financial Strategy	**Required for Phase 3 (July 1, 2025):** For each of the 10 years following the year for which the current levels of service are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets. An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by Cambridge to maximize the funding projected to be available. If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities, • An identification of the lifecycle activities that the municipality will undertake, and • If applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities.	**Compliant** Financial Strategy Appendices A-K

Stakeholder Engagement

Stakeholder engagement is a key component of planning processes at the City and supports us in developing plans and strategies to meet the needs of our communities and stakeholders. Our engagement with stakeholders through a range of methods directly informs our organizational goals and creates the basis of effective strategy development. This section describes our efforts to engage our stakeholders.

Service Users

Our service delivery review has identified the key services delivered by our assets along with service user groups. These users are formed largely of those in our communities who receive and access the range of services along with more transient stakeholders who access the services in our area on a more temporary basis, such as visitors.

We engage our service users through a range of methods both formal and informal to inform operational improvements and strategic planning, including:

- **Formal stakeholder consultation:** We host a number of events aligned to our planning processes and service delivery areas designed to engage with stakeholders on topics of interest. Examples include public consultation sessions for master planning and growth and our strategic plan.
- **Surveys:** Various services offer their users the opportunity to provide dedicated feedback on occasion through completion of a survey. These surveys are valuable to support us in assessing their priorities and planning to meet their expectations.

- **Feedback:** Our users are a primary source of information regarding the quality of our service delivery. We invite stakeholders to provide feedback on any number of items and raise any concerns regarding their services. We maintain open channels of communication accessible by phone, email, website, social media and mail.
- **Notifications:** We have processes in place to ensure our users are notified in cases where their services will be disrupted for execution of planned improvement work on assets that will result in temporary disruption of services.

Through these interactions and dedicated stakeholder engagement methods, we are able to assess stakeholder views on the delivery of services facilitated by our assets and identify areas of concern and priority. This feedback is used to inform our planning process and support prioritization of asset improvements and decision-making.

In addition, this Asset Management Plan has been informed by Our Strategic Plan – the basis of which was an extensive public consultation exercise. We have also incorporated information and feedback from our service area teams who interact with our communities daily during service delivery and response to community raised service concerns to inform the development of our asset management processes.

We will continue to utilize these opportunities for engagement with our stakeholders and communities, and future revisions of our asset management plans will incorporate the outputs of these exercises and demonstrate how the outputs have informed our LOS.

Service Delivery Partners

We highly value our partnerships with external parties and recognize the benefits of working with them to secure safe and effective delivery, incorporate leading practices and techniques, and to achieve efficiency in delivery. Examples of our service delivery partners include:

- **Contracted parties:** We maintain partnerships with contracted external parties to undertake work on our behalf. We manage our relationships through our well-defined procurement processes governed by regulation and leading practices in supply chain management.
- **Local Government Authorities:** Our assets and the services we deliver are integrated with those of the Region of Waterloo and other local government entities such as the Grand River Conservation Authority. We have established formal forums as a means of engagement with these parties for ongoing areas of management such as transportation. As valued partners in government, we also actively consider the impacts to these parties in undertaking any service-related initiatives and ensure careful coordination.

We maintain close relationships with these partners and have established processes for engagement when required to ensure collaborative and transparent ways of working for the betterment of our collective communities and stakeholders. We also maintain appropriate controls and processes to

ensure the impact of our work on stakeholders and delivery partners gets communicated to avoid risks and adverse impacts.

Public and Private Infrastructure Owning Bodies

Interfaces between Cambridge and Region of Waterloo

Cambridge is the second largest city within the Waterloo Region. In addition to the federal and provincial services, Cambridge residents and businesses receive services from two levels of government: the City of Cambridge and the Region of Waterloo.

Local Private Utilities Coordination

Local private utilities (e.g., electricity, natural gas, and telecommunications) are a critical component to the overall service delivery model provided for residents of Cambridge. A Utility Coordination Committee has been established for coordination among the utility providers and City staff. Specifically, the Design and Approval representatives from Cambridge's Engineering Department meet with the representatives from local private utility companies on a monthly basis.

The schedule for these meetings is tied to Capital Budget Planning forecasts, and it is sent to utility providers so that the companies are aware of upcoming reconstruction plans. Further to this, Cambridge sends design drawings for each project to the utility companies, early in the design stage, for comment. This allows the utility companies to review potential conflict points and inform Cambridge of any upcoming needs for upgrades within the limits of construction.

Plan Governance

This AMP presents our approach to effective management of our assets incorporating leading practice approaches to demonstrate compliance with the requirements of O.Reg.588/17. It is intended to continuously communicate our approaches and plans for development with our communities and stakeholders and further develop a culture of service-focused asset management. We intend to build on these efforts and the development of this AMP to further our asset management objectives and secure full regulatory compliance in advance of the required milestones.

This section outlines our commitment to a continuous improvement approach for asset management at the City along with our plan to monitor and govern future updates for full compliance with regulatory milestones.

AMP Monitoring & Review

In order to maintain our continuous improvement approach and achieve regulatory compliance, we will implement monitoring controls and governance for ongoing review of our asset management plan and continuous improvement opportunities to advance our capabilities.

AMP Governance

The future development of the AMP and associated improvement initiatives will be governed by the stakeholders actively involved in advancement of asset management at the City. Figure 27 illustrates the governance structure of our AMP along a description for each participating group.

Figure 27: Asset Management Plan Governance Structure

Mayor and City Council

Approve by resolution the Strategic Asset Management Plan and its update every five years and conduct annual reviews of the Asset Management Plan implementation progress.

Manager and Deputy City Manager(s)

Executive endorsement of the Asset Management Plan. Recommend adequate resources required to implement and maintain core AM practices. Monitor levels of service and make recommendations to Council.

Asset Management Steering Committee

Provide organization-wide leadership in AM Practices and concepts. Maintain the Strategic Asset Management Policy by overseeing its update every five years or as required. Maintain compliance with the Strategic Asset Management Policy and provincial asset management regulations. Identify the infrastructure priorities, in accordance with Council and corporate priorities as well as the Strategic Plan, which drive investment decisions. Oversee asset management planning activities that fall within committee members service area and in support of others. Oversee that levels of risk at each asset class are updated annually based on the degree to which assets are meeting or not meeting approved asset levels of service. Recommend and oversee asset management best practices roadmap initiatives

Corporate Asset Management Team

Maintaining corporate asset registry with support from respective business service areas. Preparing long-term infrastructure renewal plans. Supporting asset management policy implementation. Supporting continuous improvement through benchmarking service levels.

Capital Budget Working Group

Advance a balanced, achievable and realistic capital plan that focuses on sustainability of existing assets while incorporating strategic initiatives in line with the City's strategic actions. Consider readiness of projects, priority ranking, project resourcing, and funding capacity in development of the Capital Investment Plan.

Business Service Areas

Responsible for measuring and monitoring levels of service and escalating when not able to achieve the target levels of service. Responsible for maintaining data with support from Asset Management Team, maintaining the assets, and commit to provide the levels of service as prescribed by council. Track and analyze AM program progress and results with support from Asset Management Team.

The application of this governance structure will provide multiple benefits to enhancing our asset management approaches, including:

- Maintain focus and priority of the asset management plan in supporting our service delivery and strategic objectives
- Continuously identify and review opportunities and progress of implementation to ensure efficiencies and improvements are realized
- Communication and awareness of asset management requirements and priorities to advance the culture of asset management
- Alignment with related City initiatives and strategic objectives for well-considered and streamlined approach to implementation of initiatives.

Our plan will be reviewed annually by our Asset Management Team and Steering Committee working in conjunction with our Business Service Areas and Senior Leadership teams. Updates to the plan will be published externally with council approval ahead of all required regulatory milestones outlining changes and compliance with milestone requirements. A review of the governance structure will also be undertaken as part of the annual review to ensure participation of appropriate stakeholder groups as processes advance.

Continuous Improvement

We aim to continuously improve our ability to effectively manage our assets. To support this goal, a number of potential future improvement tasks and their benefits have been provided below.

Define Functional Asset Hierarchy Structure Standard

Development of a functional asset hierarchy including definition of objectives as they relate to asset management and maintenance management.

Benefits / Outcomes:

- **Alignment with O. Reg 588 and industry standards e.g., ISO 14224:** Promotes informed infrastructure investment decisions and structured data capture.
- **Optimized Resource Utilization:** Sustains levels of service with optimized resources, improving workforce effectiveness.
- **Cost-Effective Service Levels:** Identifies the most cost-effective ways to achieve proposed levels of service.
- **Enhanced Asset Management Execution:** Aligns maintenance activities with system function and levels of service.
- **Consistency Across the Organization:** Promotes consistency in maintenance and reporting practices.

- **Public Transparency and Accountability:** Facilitates public trust and understanding of the annual review of asset management plans.
- **Drill-Down to Problems and Roll-up Costs:** Function-based hierarchies enable streamlined problem analysis, coordinated planning of work on multiple assets, and systematic application of remedies.

Ongoing Asset Management Reporting, including Annual Update of Progress Implementing AMP

O.Reg. 588/17 requires that the City provide an annual update of the progress implementing the AMP, following the 2025 Asset Management Plan. It is recommended that this includes an update to the State of the Infrastructure, and the LOS and KPI metrics as set out in this AMP.

Benefits/Outcomes:

- **Alignment with O. Reg 588:** This is a requirement of the regulation.
- **Public Transparency and Accountability:** Ensures the public is aware of the progress being made in AMP, and the benefit of the implementation of the recommendations in this plan in providing services.
- **Supports Asset Management Planning and Long-Term Planning:** The annual update provides an opportunity to ensure asset management continues to evolve in the City to ensure data-driven decisions.

Grant Funding

To support the continued efforts to find alternatives to address the funding gap, it is imperative that the City continue to look for opportunities to leverage grant funding from various levels of government in support of asset management planning. This requires tracking existing and new grants as they come available, organizing the coordination of the application processes among various stakeholders, and application submittals.

Benefits/Outcomes:

- **Cost Savings:** The City heavily relies on grant funding to support infrastructure and services to minimize impacts on the taxpayers. Without these grant funds, the City would be forced to lower/remove services available or put the additional costs on the tax levy and increase rates.

Data Methodology

Review and develop consistent methods for determining data fields that may change over time, particularly replacement values.

Benefits/Outcomes:

- **Accurate Financial Reporting:** Regularly updating asset values ensures that financial statements reflect the true cost of replacing assets. This helps to provide a clear and accurate picture of the City's financial health.
- **Inflation Adjustment:** Inflation can significantly impact the cost of materials and labour needed to replace assets. By updating replacement values, the City can account for these changes and avoid underestimating future costs.
- **Insurance Coverage:** Accurate replacement values are essential for determining appropriate insurance coverage. If asset values are outdated, insurance may not fully cover the cost of replacing damaged or lost assets.
- **Budgeting and Planning:** Knowing the current replacement costs helps in effective budgeting and long-term planning. It ensures that sufficient funds are allocated for asset maintenance and replacement.
- **Asset Management:** Regular updates to asset values aid in better asset management, helping the City make informed decisions about repairs, upgrades or replacements.

Condition Assessment: Develop a consistent framework and data collection protocol

Document and provide more information on condition definitions and how condition ratings are assigned to individual asset categories. Identify which subjectively rated assets require a formal objective condition rating process and look to define and implement those processes, where able.

- **Standardize Condition Definitions:** Establishing clear, well-documented definitions that reflect the unique characteristics and performance expectations of each asset category.
- **Validate Across All Assets:** Ensuring that these definitions are applied consistently across the entire asset portfolio, with validation processes in place to confirm accuracy and relevance.
- **Enhance Stakeholder Understanding:** Documenting and communicating condition definitions to all relevant stakeholders, including asset managers, decision-makers, and operational teams, to promote a shared understanding and support informed decision-making.
- **Develop a consistent framework and data collection protocol** for condition assessments on linear and non-linear assets. Include attribute data required for data collection and how condition data is integrated with the work management system.

Benefits/Outcomes:

- **Increased Transparency and Reliability:** Defining how condition ratings are assigned provides increased transparency and reliability in the data when how condition is evaluated is clear. It is also a requirement of O. Reg. 588/17 to provide "a description of the municipality's approach to

assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate."

- **Consistency:** By ensuring there is consistency, asset reporting will be repeatable, and the City will be able to regularly assess the improvements/declines in asset condition to improve oversight on assets.

Data Updates & Data Governance

Review and update basic asset information where possible, such as installation dates to improve accuracy and precision. This may include reviewing historic documents to determine values or developing consistent strategies for addressing gaps and understanding how these assumptions may impact decision-making.

Align data sources and ensure that asset registries are maintained regularly and stored appropriately and continue the development of processes to annually review asset sub-systems and TCA data. Identify gaps in current process to ensure better alignment between all systems going forward.

Benefits/Outcomes:

- **Accuracy and Reliability:** Regular updates ensure that the data used for asset management is accurate and reflects the current state of assets.
- **Risk Management:** Updated data helps in identifying potential risks and mitigating them promptly.
- **Compliance:** Keeping up-to-date data ensures compliance with regulatory requirements.
- **Data Quality:** A robust framework ensures high data quality by establishing standards and practices for data management. This reduces errors and consistency and improves the accuracy of asset management forecasts.
- **Operational Efficiency:** Effective data governance streamlines data management processes, reducing redundancy and improving efficiency.
- **Strategic Decision-Making:** With reliable and well-governed data, asset managers can make strategic decisions that drive growth and innovation.

Business Process Mapping

Develop and maintain business processes; a detailed, easy to read visual component outlining the process of a venture from start to finish. This not only applies to asset management processes, but data and lifecycle management as well. This includes reviewing current processes and explicitly defining tasks, decision points, inputs and outputs, as well as roles and responsibilities.

Benefits/Outcomes:

- **Ensures data will support data-driven, defensible, and strategic decision-making:** Asset management planning forecasts will be more accurate, and more time available further

enhancing problem solving than simply reporting. The outcome from this visual will reduce costs, confusion on asset information and asset planning.

Maintenance Maturity Assessment

Conduct a Maintenance Management Maturity Assessment in alignment with a generally accepted framework such as a Global Forum for Maintenance and Asset Management (GFMAM). Perform data analysis, conduct surveys and interviews to determine the current state and desired future state. Develop a 5-year improvement roadmap to achieve the desired future state.

Benefits/Outcomes:

- **Provides a Roadmap** to improve overall execution of the defined asset management plan from the maintenance perspective. The roadmap serves as a common guide for all groups.
- **Build Consistency and Alignment Across the Organization:** Builds further alignment between the asset management plan and O&M.

Work Management System Audit and Assessment

Complete an audit of current work management systems including data extraction, current state interviews, and reporting overall findings using metrics based on typical industry standards such as a Society for Maintenance and Reliability Professionals (SMRP). Develop a roadmap with initial recommendations to improve work management, data and information management, and bridge gaps between maintenance and asset management.

Benefits/Outcomes:

- **Build Consistency and Alignment Across the Organization:** Builds further alignment between the asset management plan and O&M.
- **Improved Resource Utilization:** By analyzing current processes and identifying inefficiencies, the audit can help optimize resource allocation, reducing waste and improving productivity.
- **Enhanced Decision-Making:** The audit provides detailed insights and expert recommendations, enabling more informed and effective decision-making.
- **Increased Efficiency:** Identifying gaps and areas for improvement can streamline operations, leading to faster and more efficient workflows.
- **Cost Savings:** By addressing inefficiencies and optimizing maintenance practices, the audit can lead to significant cost reductions.
- **Compliance and Risk Management:** Ensuring alignment with industry standards like SMRP can help mitigate risks and ensure compliance with regulations.

Asset Management System Audit and Assessment

Assessment of functionality and integration of Asset Manager Software for automation of LOS, Risk, and deterioration models as well as the Capital Budgeting and Planning software.

Benefits/Outcomes:

- **Provides the most accurate and up-to-date information:** Allows for ease of reporting with clear definitions of sources of information.
- **Decision support systems:** allow forecasting to be done similar to the analyses completed for this AMP, with opportunities to continually enhancing the forecasts to incorporate several strategies and alternative interventions for consideration. Consistent and repeatable reporting allows for improved decision making and supports accurate forecasting, while allowing for different scenarios and alternatives to be explored to ensure assets are maintained and replaced at the lowest possible cost.

Asset Management and CMMS Improvement Implementation

Implement the recommendations of the Work Management and Asset Management System Audit and Assessment, including expanding CMMS systems to areas not currently leveraging technology to track work.

Benefits/Outcomes:

- **Build Consistency and Alignment Across the Organization:** Builds further alignment between the asset management plan and O&M.
- **Improved Resource Utilization:** To optimize resource allocation, reducing waste and improving productivity.
- **Enhanced Decision-Making:** Enables more informed and effective decision-making.
- **Increased Efficiency:** Identifying gaps and areas for improvement can streamline operations, leading to faster and more efficient workflows.
- **Cost Savings:** By addressing inefficiencies and optimizing maintenance practices, the audit can lead to significant cost reductions.
- **Provides the most accurate and up-to-date information:** Allows for ease of reporting with clear definitions of sources of information.
- **Decision support systems:** allow forecasting to be done similar to the analyses completed for this AMP, with opportunities to continually enhancing the forecasts to incorporate several strategies and alternative interventions for consideration. Consistent and repeatable reporting allows for improved decision making and supports accurate forecasting, while allowing for different scenarios and alternatives to be explored to ensure assets are maintained and replaced at the lowest possible cost.

Maintenance Management Master Plan

Develop a Maintenance Management Master Plan; a document that outlines the strategic approach to managing maintenance activities within an organization. It serves as a roadmap to guide maintenance, operations, and asset management to ensure maintenance activities align with the organization's overall goals and objectives. The plan considers factors such as equipment reliability, risk management, cost optimization, regulatory compliance, and the overall lifecycle of assets.

Benefits/Outcomes:

- **Operationalization and enhancements** to O.Reg. 588
- **Sustained levels of service** with optimized resources
- **Show commitment to optimize resources** to improve the effectiveness of the workforce. (O.Reg. 5.4.1.iv)
- **Create a process to assess the most cost-effective way** to achieve the proposed levels of service. (O.Reg. 6.2.iv)
- **Create a process to identify maintenance and operating costs** to achieve the proposed levels of service by projecting and forecasting proactive maintenance tasks and corrective maintenance. (O.Reg. 6.6.i)

Failure Analysis

Develop a list of failure modes and mitigating actions to drive decision making around the refurbishment and replacement of assets and the timing of these.

Benefits/Outcomes:

- **Improve Prioritization:** Identification of critical failure modes will ensure that the City focuses on the assets and failures that can have the most impact on its ability to deliver services.
- **Accurate Forecasts:** By understanding when the City should/needs to replace assets, these decisions can more accurately be integrated into forecasting to ensure accurate investments are identified. By having an improved understanding of asset failure, the City can more accurately forecast asset needs and target assets more likely to fail based on reliable data. Assets as they reach the end of their service life are prone to increased risks and failures and more costly for reactive maintenance.

Incorporate Asset Management into Budget Development

Develop processes to align budgets with asset management planning, including incorporating LOS into business cases for capital projects, explanation of lifecycle cost impacts of new assets, focusing communication of budget requests to the long-term needs of the assets and the impacts to service delivery, and aligning budgets to Lifecycle Activities, specifically for the Operation Budget.

Benefits/Outcomes:

- **Connects Spending to Service Delivery:** Asset management links infrastructure investments to the levels of service the City wants to provide. Instead of budgeting based on what was spent last year, decisions are grounded in what assets are needed, when, and why to meet service expectations.
- **Supports Long-Term Financial Planning:** Municipal budgets often focus on the next year or two, but infrastructure assets last decisions. Asset Management provides a long-term view of costs, helping Councils understand future funding needs and avoid unexpected spikes.
- **Prioritization of Limited Resources:** Asset management helps identify high-risk assets and prioritize investment where it will have the most impact, improve value for money.
- **Improved Transparency and Accountability:** By linking asset needs to budget decisions, the City can explain their decisions clearly to Council and the public, building trust and demonstrating that funding requests are data-driven and strategic.
- **Supports Sustainable and Resilient Communities:** Well-managed infrastructure supports growth, economic development and quality of life. By budgeting with asset management in mind municipalities are better equipped to adapt to climate change, manage growth, and protect public interest through data driven decisions.

Lifecycle Strategy Enhancements

Continue to expand and improve on lifecycle management strategies used to forecast the infrastructure needs of assets. Determine how lower cost alternatives for interventions can be included in forecasting (e.g. relining pipes, etc.).

Benefits/Outcomes:

- **Cost Savings:** Optimize maintenance practices and reduce unplanned downtime, leading to substantial cost savings. Understanding and documenting where cheaper alternatives (like pipe relining instead of open-cut replacement) can be leveraged also helps to ensure services are provided at the lowest possible cost.
- **Accurate Forecasting:** The City often uses alternative lifecycle strategies to improve asset reliability. These are often on a case-by-case basis and not well documented for how and why these alternatives are appropriate. Understanding these alternatives and documenting them will allow for more accurate forecasting.

Implement a Criticality and Risk Assessment Framework

Build a criticality and risk assessment framework aligned to organizational objectives and levels of service.

Benefits/Outcomes:

- **Improved Asset Management:** Prioritize maintenance and investment based on asset criticality and risk, leading to more efficient resource allocation.
- **Enhanced Risk Mitigation:** Identify and address high-risk areas, reducing the likelihood of asset failure and associated costs.
- **Cost Savings:** Optimize maintenance practices and reduce unplanned downtime, leading to substantial cost savings.
- **Compliance and Resilience:** Ensure compliance with regulations and improve the resilience of municipal infrastructure
- **Risk and criticality-based decisions** to sustain level of service at the lowest cost.
- **Consistent framework** for use in objective decision-making across the organizations such as asset management, maintenance and operations.

Education & Awareness

Continue to educate and advocate for the adoption and use of best practices in Asset Management across all areas of the organization. Develop opportunities for public engagement to inform and educate the public on asset management, its importance, and benefits to the community to increase transparency.

Benefits/Outcomes:

- **Public Transparency and Accountability:** Facilitates public trust and understanding of the annual review of asset management plans. The City can explain their decisions clearly to Council and the public, building trust and demonstrates that funding requests are data-driven and strategic. When residents understand the true cost of owning and maintaining infrastructure—and the challenges involved in delivering reliable services—they are more likely to support necessary tax and rate increases.

Change Management Planning

Change Management is critical for successfully implementing asset management in the City because asset management isn't just about data and systems, it's about people, processes and culture. A Change Management Plan is a structured approach that guides how an organization prepares for, implements, and sustains change. It focuses on the people side of change and ensures that staff, leadership, and other stakeholders understand, accept, and adopt new processes, tools and responsibilities.

Benefits/Outcomes:

- **Shifts in Organizational Mindset:** Asset management requires moving from reactive, siloed decision-making to a coordinated, long-term approach. Change management helps staff and

leadership understand the "why" behind the shift and embrace new ways of thinking about service delivery and infrastructure planning.

- **Clarifies Roles and Responsibilities:** There are various staff across the City that are significantly impacted and included in asset management processes. To ensure effective AM, a change management approach defines who does what, ensuring that everyone from finance to operations, knows their role and contributes consistently.
- **Break Down Siloes:** Asset management requires cross-departmental collaboration, change management fosters communication and shared goals between departments like engineering, finance, IT, and public works.
- **Builds Buy-In and Engagement:** Without staff and leadership buy-in, even the best asset management plans won't be implemented. Change management ensures people are engaged early, understand the benefits, and feel supported through the transition.
- **Enables Adoption of New Tools and Processes:** Whether it's new software, lifecycle strategies, or budgeting models, asset management often involves change. A strong change management process ensures staff are trained, supported and ready to use new tools and follow new processes effectively.

Integrating Climate Change into Asset Management Planning

Enhance climate resilience through the following:

- **Assess Climate Risks to Infrastructure:** Identify climate hazards (e.g., extreme weather, flooding, heat stress, freeze-thaw events, etc.) that could impact asset performance and service levels.
- **Improve Climate Data Integration:** Incorporate climate projections into asset lifecycle planning and decision-making processes.
- **Enhance Financial Planning for Climate Resilience:** Use risk-based financial strategies to estimate the short and long-term costs of climate adaptation and mitigation, leveraging guidance from reports such as the Financial Accountability Office of Ontario's (FAO) Costing Climate Change to Public Infrastructure.
- **Update Master Plans and Policies:** Ensure alignment between existing asset management plans, climate action strategies, and other municipal planning documents to support a cohesive adaptation and mitigation approach.
- **Implement Climate-Responsive Asset Management Practices:** Adjust lifecycle strategies, levels of service, and capital planning to incorporate climate change considerations and resilience measures such as nature-based solutions, floodproofing, and energy-efficient infrastructure investments.

Benefits/Outcomes:

- **Long-term Service Reliability & Financial Sustainability:** Integrating climate considerations into asset management planning is essential to ensuring long-term service reliability, financial sustainability, and infrastructure resilience. Climate change can accelerate asset deterioration, increase maintenance and replacement costs, and introduce new risks that must be proactively managed.
- **Improved Decision-Making:** By integrating climate change into asset management planning, the Region can make informed investment decisions that protect assets, services, and communities from the impacts of climate change and extreme weather events.

APPENDICES

Appendix A

Transportation Asset Management Plan

A.1 Introduction

The City maintains a diverse portfolio of transportation assets to provide safe and effective means to keep our communities moving. We have three different asset classes within transportation designed to facilitate safe movement across the community.

Table 11: Transportation – Assets

Asset Class	Active Transportation	Roads	Parking
Asset Type	• Sidewalks • Trails • Pedestrian Bridges • Walkways • Bike Lanes • Street Furniture	• Roads and Laneways • Pavement Edges • Street Lighting • Road Bridges (including major culverts) • Structural Walls • Signage • Guiderails • Pedestrian Crossings	• Public Parking Lots & Stalls (excluding public parking lots specific to parks and recreation) • Parking meters

This collection of assets is critical to our City as it enables the safe movement of people and goods to support the economic prosperity of the community and to provide access to recreational activities helps us to realize our vision of a connected city. Like many of our assets, transportation assets currently face increased challenges as a result of aging infrastructure, climate change, and increasing demand. Our investment in these assets must therefore be carefully considered to ensure optimal investment for renewal while investing to meet the growing needs of our community.

Given the intricacies of our infrastructure, it is important to distinguish between the services provided by the City, the Region of Waterloo and Rail Authorities. The Region of Waterloo provides services including Grand River Transit, the ION, and Regional road services, among others. As such, the assets that provide these services are not included in the asset inventory. The City is responsible for maintenance activities on Regional roads as per negotiated agreement with the Region. Rail Authorities are responsible for railway crossing infrastructure (signage, signals, lights, etc.) as well as the sidewalk, pavement & railway track that is located within their corridor. The City is responsible for

pavement markings, advance warning signage and 50% of the maintenance cost for the railway crossing infrastructure.

This appendix provides information regarding our approach to the management of transportation assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

A.1.1 Strategic Connections

The following strategic and master plans related to transportation assets were considered while developing this AMP.

Table 12: Transportation – Strategic Connections

Document	Strategic Connection
Master Plans	Includes Transportation master plans and active transportation networks (Moving Cambridge - Transportation Master Plan 2019, Cycling Master Plan 2020, Trails Master Plan 2010).
Asset Management Plan Documents	Provides long-term planning for road resurfacing, parking facility maintenance, and active transportation network expansion.
Annual Business Plan	Outlines transportation-related service delivery, road maintenance priorities, and investments in parking facilities and active transportation.
Proposed Capital Investment Plan	Informed by Asset Management Plans/Service Master Plans the 10-year Capital Plan details specific projects for future investments in assets related to the service area.
Operating Budget & Forecast	Covers ongoing costs for road maintenance, street cleaning, snow removal, parking facility operations, and active transportation enhancements.
Climate Adaptation Plan	Addresses how extreme weather impacts roads, sidewalks, and parking infrastructure, promoting climate-resilient transportation planning.
Energy Conservation and Demand Management Plan	Encourages energy-efficient street lighting, sustainable parking structures, and alternative transportation initiatives like electric vehicle (EV) infrastructure.
Multi-Year Accessibility Plan	Ensures roads, sidewalks, transit stops, and parking facilities meet accessibility standards for universal mobility.
Cambridge Connected Strategic Plan	Aligns transportation infrastructure projects with the city's priorities for mobility, sustainability, and economic development.
Region of Waterloo Strategic Plan	Supports regional transportation goals, including road safety, transit integration, and active transportation improvements.
Development Charges Background Study	Identifies how new roads, sidewalks, and parking infrastructure are funded through development charges as the city grows.

Document	Strategic Connection
City of Cambridge Official Plan	Guides transportation planning, ensuring integration of road networks, pedestrian-friendly streets, cycling infrastructure, and parking strategies.
Growth Plan for the Greater Golden Horseshoe	Addresses regional transportation growth, emphasizing multimodal transportation, transit-supportive road networks, and reduced traffic congestion.

A.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 13: Transportation – Key Considerations

Type	Considerations
 Climate Risk	• Severe storms; flash flooding • Increased freeze/thaw cycles • Increased road maintenance cost due to freeze / thaw cycles (more potholes)
 Climate Adaptation	• Drainage trails / walkways • Design roads, bridges and parking lots for flood risk • Source water protection plan (salting ground water risk management)
 Climate Mitigation	• Public demand / interest in active transportation options • LED lighting (street and trail lights) • Support transition to alternative fuels by providing EV charging options
 Heritage Interest	• Heritage bridge - Black Bridge Rd • Several heritage retaining and structural walls

Type	Considerations
Accessibility Interest	• Design for new and/or reconstruction of streets, sidewalk, walkways, trails, pedestrian crossings and parking spaces to incorporate Facility Accessibility Design Standards

A.2 State of Infrastructure

A.2.1 Overview

Transportation assets are those that enable us to get where we need to go throughout our city. Our transportation assets are some of our most highly utilized and visible assets within Cambridge. It includes everything from the pedestrian bridges throughout the City to many of our major roads.

We recognize that the efficiency and value we can derive from our transportation assets extends into other portfolios, as it provides access to many of our services such as parks and facilities. This is what makes our transportation assets particularly important.

For our transportation assets, based on replacement value, 12% are in "Poor" or "Very Poor" condition, and 59% in “Good” or “Very Good” condition.

Table 14: Transportation – Overview

Replacement Value ('000s)	Condition	Asset Class
$855,235 Total replacement value of all assets within the transportation asset class.	Good Weighted average condition rating of transportation assets across all subclasses.	Three Distinct asset classes that we manage as a part of our municipal transportation portfolio.

A.2.2 Asset Class

Table 15: Transportation – Asset Class Overview

Active Transportation	Roads	Parking
• 687 km of sidewalk • 130 km of trails • 11 km of walkway • 36 pedestrian bridges • 10 pedestrian boardwalks • 6 pedestrian culverts • 254 street furniture	• 1,041 lane km of pavement (includes shared assets) • 6 road bridges • 11,504 streetlights • 20,026 signs • 8 km of guiderail • 23 road culverts	• 25 parking lots • 9 EV charging stations

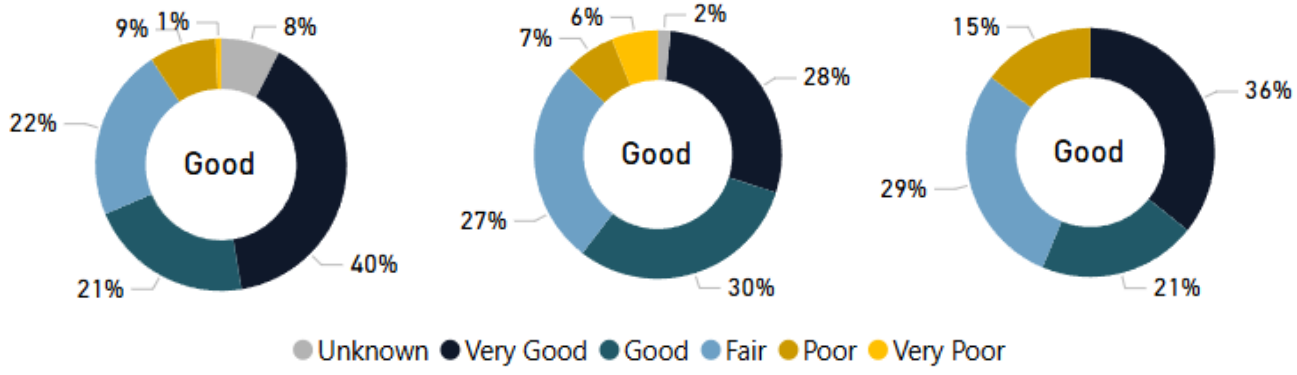


Figure 28: Transportation – Asset Class Condition Breakdown by Replacement Value

Active Transportation

Replacement Value ('000s)

$207,869

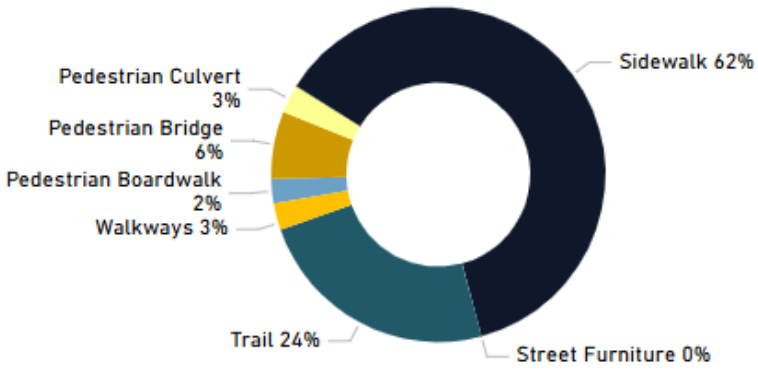
Weighted Avg. Condition Rating

Good

Average Age

29 Years

Figure 29: Transportation – Active Transportation (% Replacement Value)



Roads

Replacement Value ('000s)

$644,603

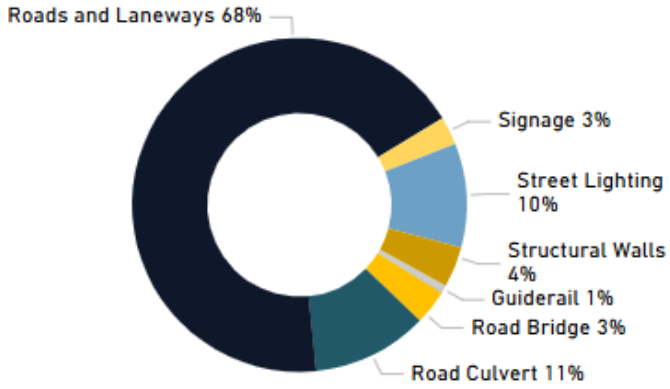
Weighted Avg. Condition Rating

Good

Average Age

34 Years

Figure 30: Transportation – Roads (% Replacement Value)



Parking

Replacement Value ('000s)

$2,763

Weighted Avg. Condition Rating

Good

Average Age

20 Years

Figure 31: Transportation – Parking (% Replacement Value)

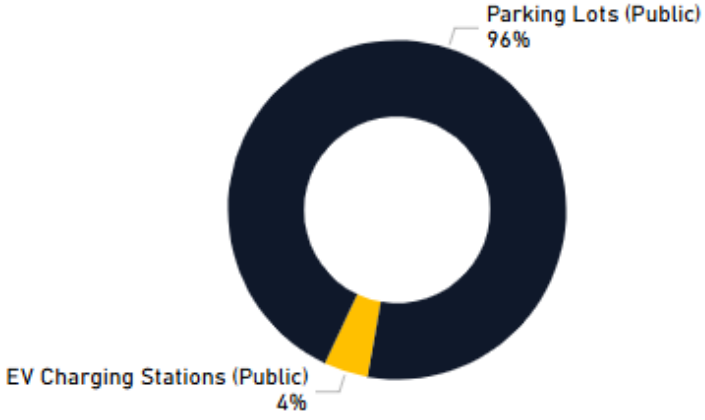
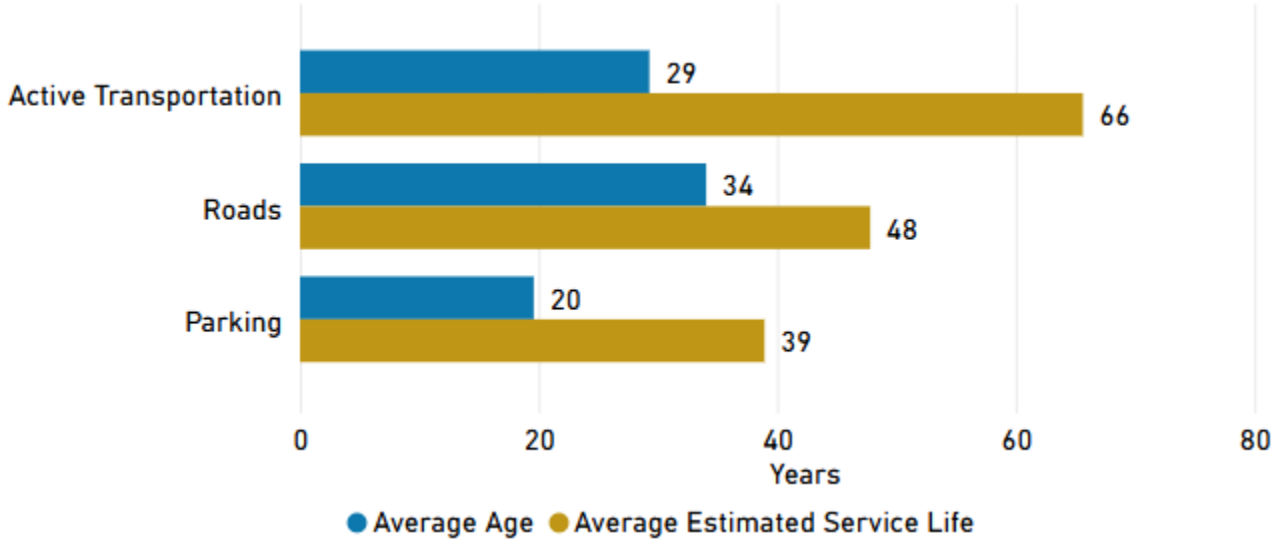


Figure 32: Transportation – Age and Estimated Service Life



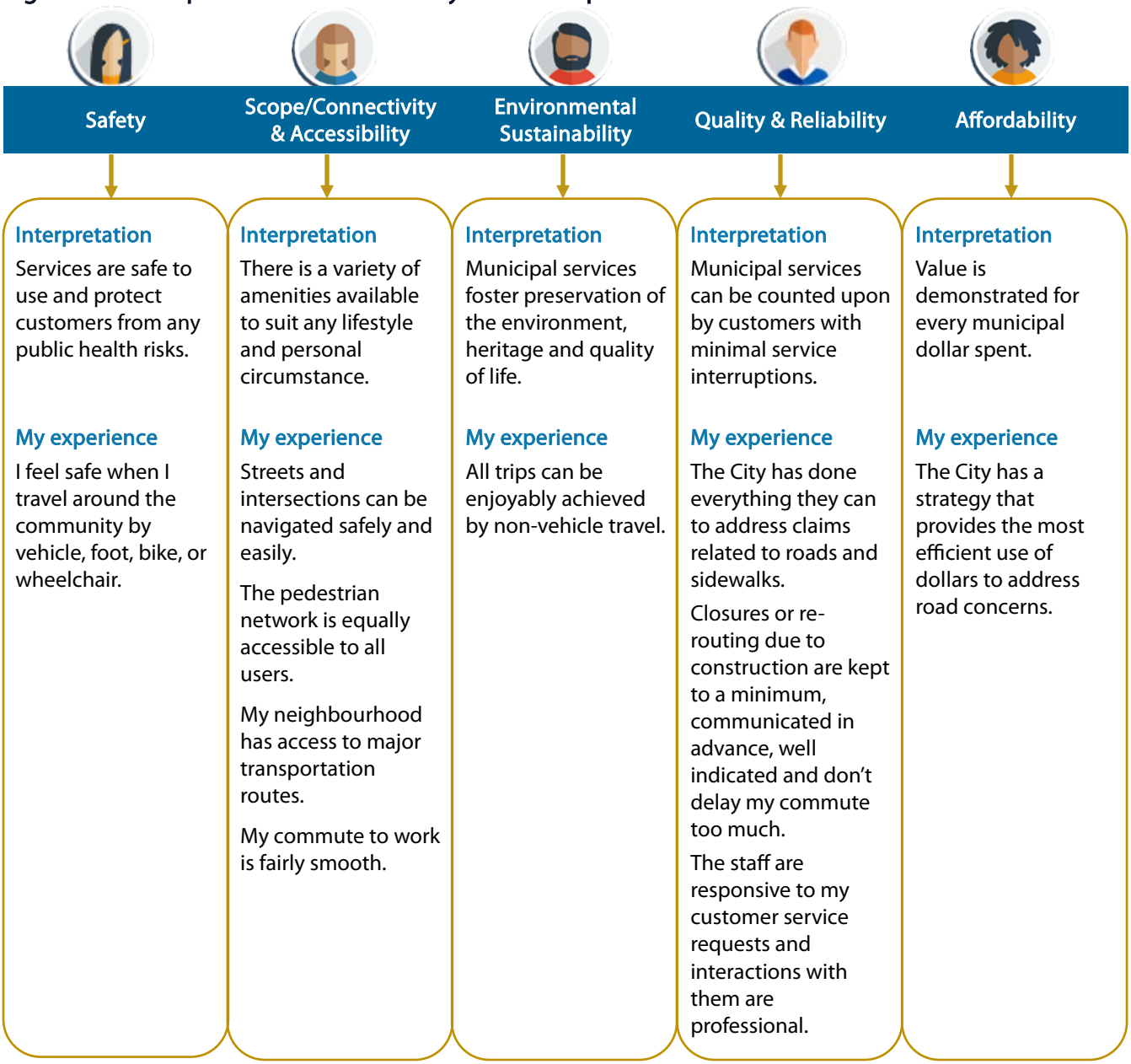
A.3 Levels of Service

A.3.1 Level of Service Framework

We have developed a Level of Service (LOS) framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. We have identified the concerns and priorities of our stakeholders in the "My Experience" headings below. These priorities come from stakeholder feedback through comments received during the course of our day-to-day operations and dedicated feedback channels such as the engagement undertaken to support our Transportation Master Plan - Moving Forward.

Figure 33: Transportation – Community Service Expectations



With the identification of stakeholder-informed transportation priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

A.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, for our core assets, we are required to report on the community and technical metrics for our current LOS. As such, we have reported the prescribed metrics from the regulation for roads, bridges and culverts, as well as additional City-established metrics within our LOS framework. These regulated community metrics tend to be qualitative descriptions of the services provided,

while the technical metrics focus on quantitative measures. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 16 and Table 17.

Table 16: Transportation – Community Levels of Service

Service Attribute	Performance Measure
Roads - Scope	The City has arterial, collector, highways and local roads that it operates and maintains to ensure high connectivity for the community. A map showing the extent of the City's roads network is provided in Appendix O.
Roads - Quality & Reliability	The City seeks to maintain an overall average weighted condition of road pavement as "Good" to "Very Good" to ensure that a high-level of service is retained and that the safety of the community is maintained. The City aims to provide a balanced approach to service delivery with inspection focusing on those assets that are in "Poor" condition by leveraging a risk-based approach to prioritize renewal or rehabilitation of roads. The City ensures full compliance with Ontario Minimum Maintenance Standards.
Bridges & Culverts - Scope	The City's municipal bridges are used by all types of vehicles on the road, including heavy transport vehicles, motor vehicles, emergency vehicles, and cyclists since the City has 29 bridges / major culverts and 36 pedestrian bridges across the City.
Bridges & Culverts - Quality & Reliability	The majority of the City's bridges are in "Good" condition; therefore, there are no major concerns regarding how the bridge condition could affect the use of the bridges. We also inspect our bridges every 2 years in line with the Ontario Structure Inspection Manual.

Table 17: Transportation – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Roads - Scope	Number of lane-kilometres of each of arterial roads as a proportion of square kilometres of land area of the municipality (Note: includes regional, provincial and Cambridge roads)	2.5	Maintain
Roads - Scope	Number of lane-kilometres of collector roads as a proportion of square kilometres of land area of the municipality	4.84	Maintain

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Roads - Scope	Number of lane-kilometres of local roads as a proportion of square kilometres of land area of the municipality	5.25	Maintain
Roads - Quality & Reliability	Average pavement condition index Paved Roads (Note: equivalent to PQI measured by Cambridge)[3]	7.02	Maintain
Roads - Quality & Reliability	Average surface condition (e.g., excellent, good, fair or poor) index Unpaved Roads	NA-there are no unpaved roads in the municipality	N/A
Bridges & Culverts - Scope	Percentage of bridges in the municipality with loading or dimensional restrictions (Note: road bridges)	3.40%	Maintain
Bridges & Culverts - Quality & Reliability	Average bridge condition index value for Bridges	78.62	Maintain
Bridges & Culverts - Quality & Reliability	Average bridge condition index value for Culverts	80.60	Maintain
Transportation - Quality & Reliability	Percentage of replacement value of Transportation assets rated "Very Poor"(or "Poor")	11.92%	12.55%
Transportation - Affordability	Operations and maintenance spending as a percentage of the replacement value of Transportation assets	1.59%	1.59%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

[3] See Appendix O.3 for a map of the 2024 Roads Pavement Condition

Table 18: Transportation – Key Performance Indicators (KPI)

Asset	Key Service Attribute	Performance Measure	Current LOS
Multi-Use Trails & Paths	Scope	Km of bicycle paths, multi-use trails and seasonal trails per 100,000 population[4]	90.1 km
Sidewalks	Connectivity & Accessibility	Percentage of City owned roads with sidewalks	79%
Multi-Use Trails & Paths	Safety	Kilometres of paved trails open during winter season	64.2 km
Parking Lots	Environmentally Sustainable	Number of public electrical vehicle charging stations per 1000 residents (City owned)	0.06
Roads	Quality & Reliability	Centreline kilometres of roads renewal (reconstruction, resurfacing) completed	6.0 km
Roads	Quality & Reliability	Number of work orders relating to a public service request	409
Multi-Use Trails & Paths	Scope / Connectivity & Accessibility	Percentage of residential properties within 800m (10 min walk) distance to Trails	77%

The maps cited in the LOS tables for the City are shown in Appendix O.

A.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its transportation assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 19: Transportation – Lifecycle Activities

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Master Transportation Plan and other strategic plans	All	5 years
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years

[4] See Appendix O.2 for a map of the current Active Transportation Network

Description	Asset	Frequency
Operations and Maintenance (Condition Assessments)		
Sidewalk safety inspection program (May and September) via City staff biking along all sidewalks in the City and recording defects according to provincial requirements and are categorized according to various defect types and severity levels.	Sidewalks and Walkways	Annual
Pedestrian bridges (span greater than three metres): formal inspection as per Provincial requirements. Data is used as input for capital planning process	Pedestrian bridges	Biannual
Bridges and large culverts with a span greater than three metres: formal inspection as per Provincial requirements. Data is used as input for capital planning process.	Road bridges (incl large culverts)	Biannual
Inspection of bike lanes (as part of the road patrol program)	Bike Lanes	Depending on class of roads as per MMS
Perform condition assessments through photographic inspections to calculate the Pavement Quality Index for renewal planning. Routine road patrols by Road Operations also inform system analysis.	Roads and Laneways	3 years
Regular high level condition assessment of retaining walls by summer staff, and detailed condition assessment on 'as needed' basis by engineering consultant.	Structural Walls	4 years
Formal condition assessment program: photographic inspections that inform calculation of the Pavement Quality Index.	Parking Lots (Public)	3 years
Rehabilitation and Renewal		
Pedestrian bridge rehabilitation or reconstruction based on annual needs assessment	Pedestrian bridges	As required
Road reconstruction based on annual needs assessment	Roads	As required
Road resurfacing based on annual needs assessment	Roads	As required
Laneway reconstruction based on annual needs assessment	Roads	As required
Structural wall rehabilitation or reconstruction based on annual needs assessment	Structural Walls	As required

Description	Asset	Frequency
Road bridge and large culvert rehabilitation or reconstruction based on annual needs assessment	Road bridges (incl large culverts)	As required
Walkway reconstruction based on annual needs assessment	Walkways	As required
Parking lot rehabilitation or reconstruction based on annual needs assessment	Parking Lots (Public)	As required
Growth & Service Enhancement		
Construction of new pedestrian bridges, roads, and sidewalk network	All	As required
Acquisition of new transportation assets	All	As required
New sign installation as identified by City staff	Signage	As per transportation and studies.
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

Table 20 shows regular planned operation and maintenance activities for transportation assets. The City performs maintenance activities on Regional roads as per negotiated agreement with the Region. Throughout this table, an 'x' within the City Roads or Region Roads columns denotes that City of Cambridge staff perform this activity.

Table 20: Transportation – Planned Operations and Maintenance Activities

Activity	City Roads	Region Roads
Crack sealing	City contracts this out	Region
Spring Clean-up	x	x
Tree trimming/ brush control	x	Region
Shouldering	x	x
Sign Maintenance and replacement	x	Region
Grass cutting - boulevard	x	Region
Bridge - deck washing	x	Region
Winter Maintenance Road	x	x

Activity	City Roads	Region Roads
Winter Maintenance Roads - cul de sacs	City contracts this out	-
Winter Maintenance - Walkways	x	-
Winter Snow Removal	x	x
Winter Maintenance - Sidewalk	x	x
Parking Lot Winter Maintenance	City contracts this out	-
Winter Road inspections	x	x
Road Patrol and Inspections	x	x
Road Repair, by small area resurfacing, including curb repair	x	
Trench Inspections	x	x
Stairs - walkways maintenance	x	-
Parking Lot maintenance	x	-
Pavement Markings	City contracts this out	Region
Parking Stall - pavement markings	City contracts this out	City contracts this out
Traffic calming measures	x/Contract	Region
Traffic related services (permits, crossing guard, traffic investigations)	x	Region

Table 21 shows the unplanned O&M activities for transportation. Throughout this table, an 'x' within the City Roads or Region Roads columns denotes that City of Cambridge staff perform this activity.

Table 21: Transportation – Unplanned Operations and Maintenance Activities

Activity	City Roads	Region Roads
Pothole patching	x	x
Guiderail Repair	City contracts this out	Region
Walk-way maintenance	x	-
Utility cut restorations	x	x
Snow Fence Installation/Removal	x	Region
Traffic Signals	Region	Region
Trail/Multi-purpose Trails maintenance	x	-

Activity	City Roads	Region Roads
Traffic Island repair	x	Region
Sidewalk Repair	x	x
Pavement Edge repair	x	x
Retaining Wall Repair	x	Region
Street Lights & Poles repairs	City contracts this out	Region
Emergency Response - Accident clean up, spills debris etc.)	x	x
New driveway entrances / widenings	x	Region
Third party utility cut restorations related to hydro, gas, communication lines	City contracts this out	x

Note: The City of Cambridge provides maintenance services to Region roads as per agreement with the Region.

A.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

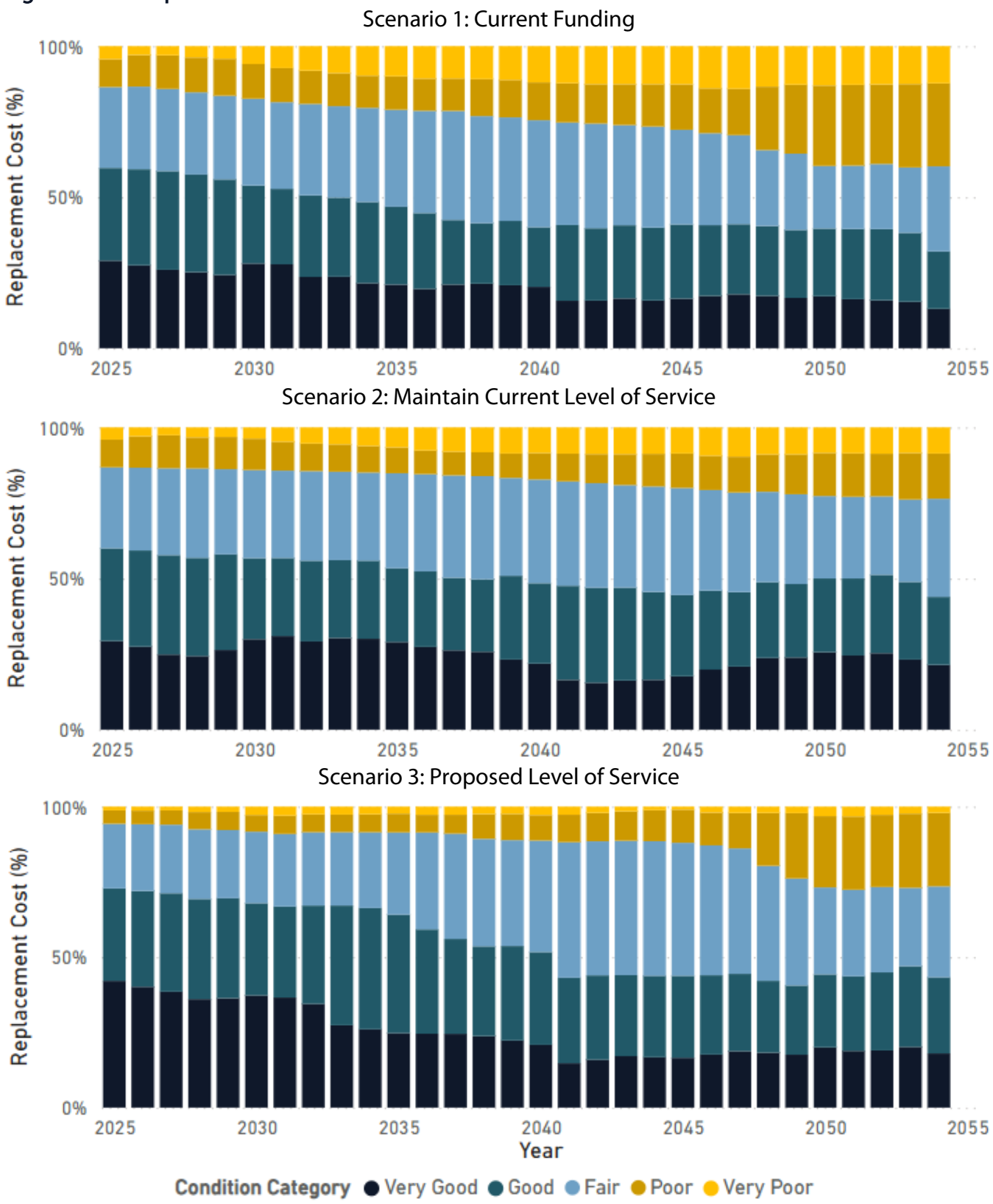
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 34. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 34: Transportation – Condition Profiles for Service Level Scenarios



Scenario 1: Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $9.4M. The condition distribution for the anticipated funding scenario is shown in Figure 34. Overall condition decreases in this scenario.

The share of assets in "Very Poor" and "Poor" conditions increases significantly, particularly after 2035, eventually comprising nearly half of the total asset value by 2055. At the same time, assets in "Very Good" and "Good" conditions decline steadily, indicating a need for reinvestment to maintain higher condition standards. The proportion of assets in "Fair" condition remains relatively stable initially but also begins to shrink in later years. Overall, the chart illustrates a growing backlog of deteriorating assets and highlights the long-term risk of continued underfunding.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $17.8M for renewal, rehabilitation and replacement activities is needed to maintain performance for Transportation Assets with a capital funding gap of $8.4M. The performance forecast for scenario 2 is shown in Figure 34.

This scenario shows a more stable long-term outlook for transportation assets. The proportions of assets in "Very Good" and "Good" condition are better preserved over time compared to Scenario 1, with minimal long-term decline. The share of assets in "Fair" remains relatively consistent throughout the 30-year period. Notably, assets in "Poor" and "Very Poor" condition grow only slightly, indicating that current funding is adequate to sustain the existing level of service and avoid major deterioration. Overall, this scenario reflects a balanced asset condition profile with moderate reinvestment, effectively preventing the accumulation of critical condition assets.

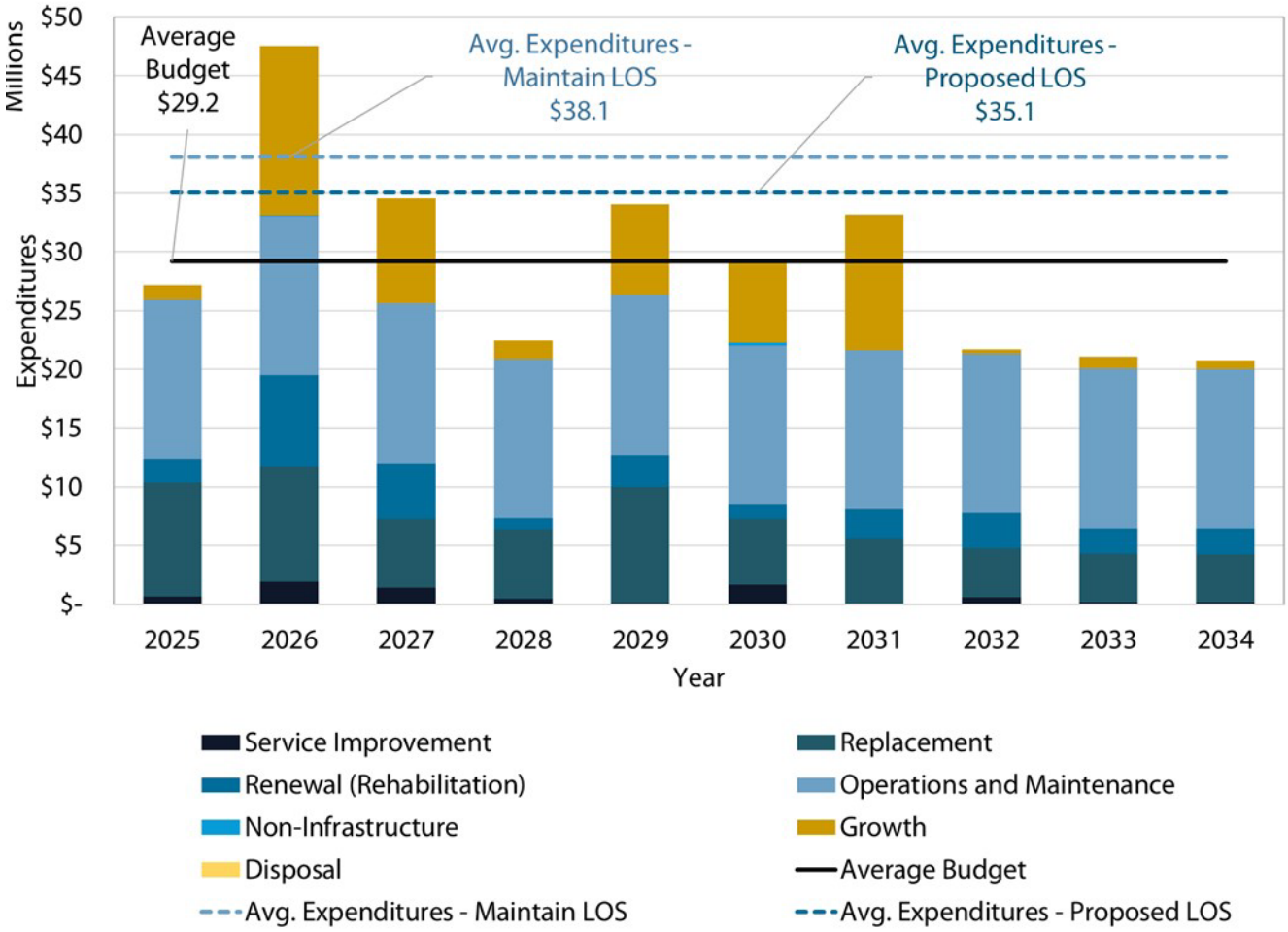
Scenario 3: Proposed Level of Service

It was determined that an average annual budget of $14.0M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Transportation Assets with a capital funding gap of $5.4M. Under this scenario, assets are maintained at an optimized service level based on identified asset needs, especially in the earlier years of the forecast period. From 2025 to approximately 2040, a larger proportion of transportation assets remain in "Very Good" and "Good" condition, with relatively lower portions in "Poor" and "Very Poor" states. However, by 2045, there's a gradual decline in asset condition, with a noticeable increase in assets classified as "Poor" and "Very Poor." Despite this decline, the overall condition profile remains better than under the current funding scenario. This scenario suggests that proactive investment aligned with lifecycle strategies results in improved asset performance over time, although continued reinvestment is necessary to sustain these gains beyond 2045.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 35 and Table 22, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle

activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 35: Transportation – Expenditure Scenario Comparison



The scenario comparison indicates that Transportation has an average annual total gap of $5.9M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $5.4M, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 22. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize transportation maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 22 shows that maintaining the current level of service requires $17.8M in average annual renewal, rehabilitation, and replacement investments, with a capital gap of $8.4M. Achieving the

proposed level of service requires an average annual $14.0M for renewal, rehabilitation and replacement activities, as well as additional funding for service improvements, that are currently unfunded. In total, the proposed LOS average annual capital gap is $5.4M.

An average annual O&M gap of $477.8K is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 22: Transportation – Lifecycle Activity Investments & Average Annual Infrastructure Gap

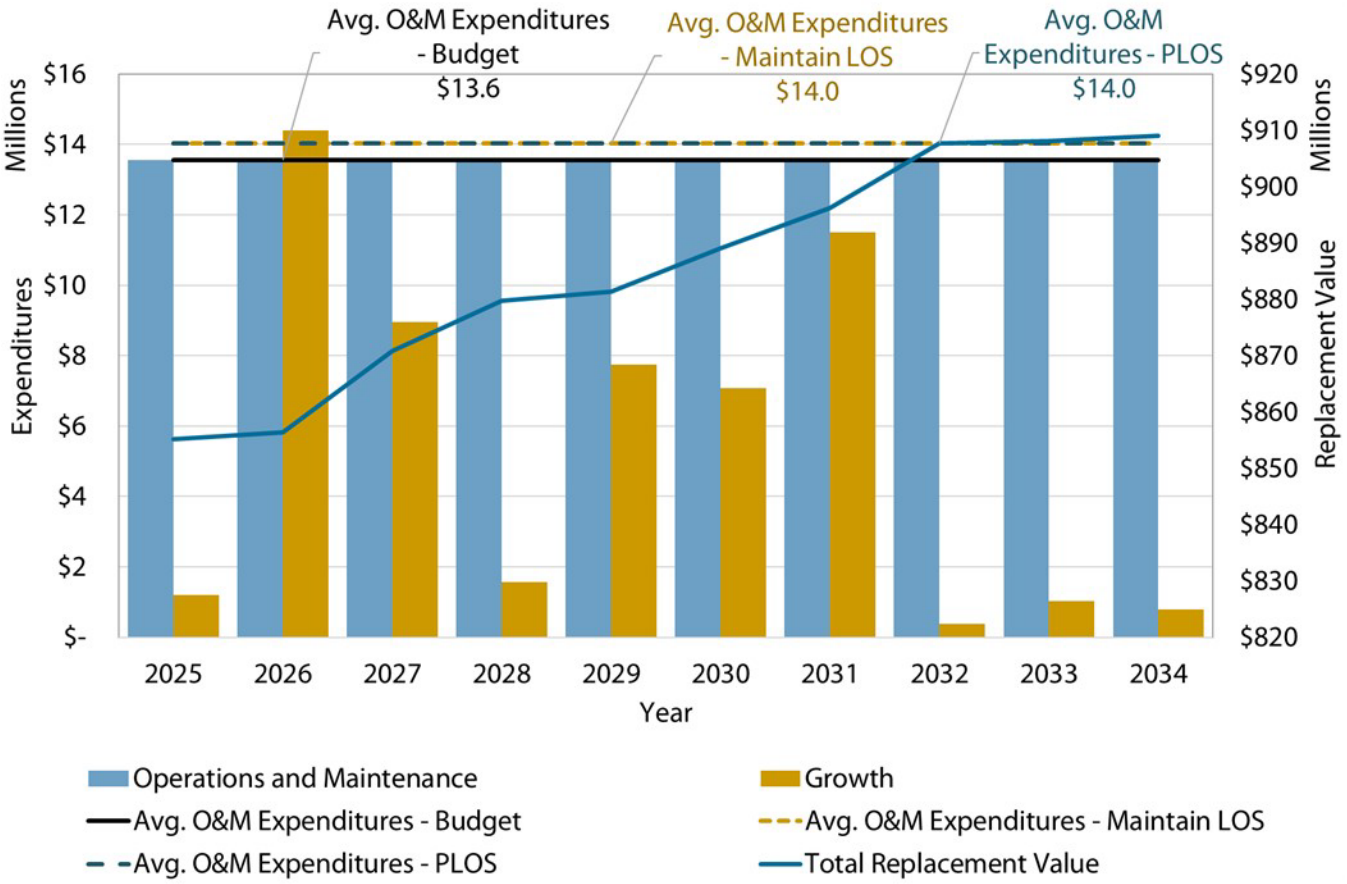
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$5,463,929	$5,463,929	$5,463,929
Non-Infrastructure	$31,025	$31,025	$31,025
Rehabilitation & Replacement	$9,403,081	$17,837,483	$13,960,000
Service Improvement	$727,077	$727,077	$1,568,997
Total Capital Expenditures	$15,625,113	$24,059,515	$21,023,952
Capital Infrastructure Gap		$8,434,402	$5,398,839
Operations & Maintenance	$13,553,300	$14,031,140	$14,031,140
Operations & Maintenance Gap		$477,840	$477,840
Total Expenditures	$29,178,413	$38,090,655	$35,055,092
Total Funding Gap		**$8,912,242**	**$5,876,679**
Gap as Percentage of Replacement Value		**1.04%**	**0.69%**

The growth and O&M expenditures shown are shown in greater detail in Figure 36, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible

cost. For Transportation assets, additional O&M were only required to accommodate growth, which accounts for $477K of the total annual average funding gap. This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

Figure 36: Transportation – Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

A.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Transportation assets are provided in Table 23.

Table 23: Transportation – Data Confidence

Asset Class	Data Source	Data Confidence
Active Transportation	GIS Database	High
Roads	GIS Database	High
Parking	GIS Database	High

Opportunities for improvement include:

Active Transportation

- Ongoing monitoring of utilization of Key active transportation routes, pedestrian bridges during various seasons (winter/summer)

Roads

- While roadway data is based on recent inspections with information taken from the road needs study and is generally highly reliable, secondary road assets such as signs, guiderails and street lighting would benefit from additional data collection, inspection procedures, and programs to fill key gaps in the asset register related to age, condition, and value of the assets.

Parking

- Ongoing review of parking space utilization will provide needs for additional parking and/or enhance alternate transportation modes to mitigate parking needs.

Appendix B

Drinking Water Asset Management Plan

B.1 Introduction

The City maintains a diverse portfolio of drinking water assets to deliver clean water to our community. Drinking water is a part of the environmental services provided by the City and has one asset class.

Table 24: Drinking Water – Assets

Asset Class	Water System
Asset Type	• Water Mains (including valves, valve chambers, hydrants and water services) • Water Meters • Bulk Water Stations

This collection of assets is critical to our City as the sound management of drinking water for the community helps us realize our vision of a safe, healthy, and sustainable Cambridge with reliable infrastructure that supports growth and environmental stewardship. Like many of our assets, drinking water assets are facing increased challenges as a result of aging infrastructure, climate change, and increasing demand due to growth in our City. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

Given the intricacies of our asset base, it is important to distinguish between the City's services and the Region of Waterloo's services. The Region of Waterloo owns and operates all supply wells, water treatment facilities, water reservoirs, and storage facilities such as towers and standpipes. The Region also owns a vast network of transmission watermains within the City that City staff operate and maintain on the Region's behalf. These Regionally owned assets are therefore not included as part of this AMP.

This appendix provides information regarding our approach to the management of drinking water assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

B.1.1 Strategic Connections

The following strategic and master plans related to drinking water assets were considered while developing this AMP.

Table 25: Drinking Water – Strategic Connections

Document	Strategic Connection
Annual Water System Performance Report	An overview of the City's drinking water system operations, monitoring results, key performance indicators and compliance with regulatory standards over the previous year.
Asset Management Plan Documents	Provides long-term planning for renewal and expansion of the water network. Ensures financial sustainability of water assets. Informs lifecycle management and investment strategies.
Annual Business Plan	Links water service priorities with performance indicators and budgeting. Ensures financial sustainability of water-related projects.
Capital Investment Plan	Funds water infrastructure maintenance and expansion. Prioritizes long-term sustainability and financial forecasting.
Operating Budget & Forecast	Covers ongoing costs for water system maintenance and compliance monitoring.
Long-Range Financial Plans	Ensures sustainable funding for drinking water distribution network and contribution to Region for water supply, treatment and large diameter transmission pipes.
Climate Adaptation Plan	Strengthens water system resilience to flooding and drought. Reduces service disruptions from extreme weather.
Transform WR	Supports source water protection, improving water infrastructure, and promoting water conservation practices.
Cambridge Connected Strategic Plan	Guides water infrastructure improvements based on community needs. Aligns water service enhancements with municipal growth projects.
Region of Waterloo Strategic Plan	Aligns water services with regional growth, equity, and climate resilience. Supports integrated planning for long-term water sustainability.
Development Charges Background Study	Identifies how new components of the drinking water distribution system are funded through development charges as the city grows.
City of Cambridge Official Plan	Guides land use to match water capacity. Promotes efficient infrastructure planning.
Growth Plan for the Greater Golden Horseshoe	Addresses how population growth impacts wastewater capacity, emphasizing sustainable and resilient infrastructure.

B.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 26: Drinking Water – Key Considerations

Type	Considerations
 Climate Risk	• Increased freeze/thaw cycles • Possible higher water usage and lower supply during prolonged drought
 Climate Adaptation	• Increased water system maintenance cost due to freeze / thaw cycles leading to higher risk of water main or services breaks and water loss • Water usage and conservation management strategies
 Climate Mitigation	• N/A
 Heritage Interest	• No significant interests
 Accessibility Interest	• No significant interests

B.2 State of Infrastructure

B.2.1 Overview

Drinking water assets are those that enable us to have access to clean and safe drinking water. It includes the water pipes (including valves, chambers, hydrants and water services) and meters that service our homes as well as bulk water dispensing units. Our drinking water assets are some of our most utilized and important assets, as our community would not thrive without them. We recognize that these assets are imperative to the livelihood of our community and therefore must be managed and maintained.

Table 27: Drinking Water – Overview

Replacement Value ('000s)	Condition	Asset Class
$846,388	Fair	One
Total replacement value of all assets within the drinking water asset class.	Weighted average condition rating of drinking water assets across all subclasses.	Distinct asset class that we manage as a part of our municipal drinking water portfolio.

B.2.2 Asset Class

Table 28: Drinking Water – Asset Class Overview

Water System
• 555 km of Water Mains (incl. shared ownership) • 40,500 Water Meters & Communication Units (or Radios) • 2 Bulk Water Stations • 6,135 Valves • 834 Water Chambers • 393 km of Water Service Pipe • 3,724 Hydrants

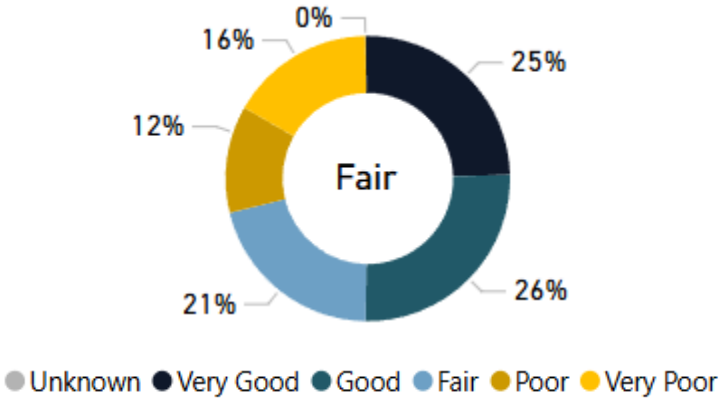


Figure 37: Drinking Water – Asset Class Condition Breakdown by Replacement Value

Water System

Replacement Value ('000s)

$846,388

Weighted Avg. Condition Rating

Fair

Average Age

33 Years

Figure 38: Drinking Water – Water System (% Replacement Value)

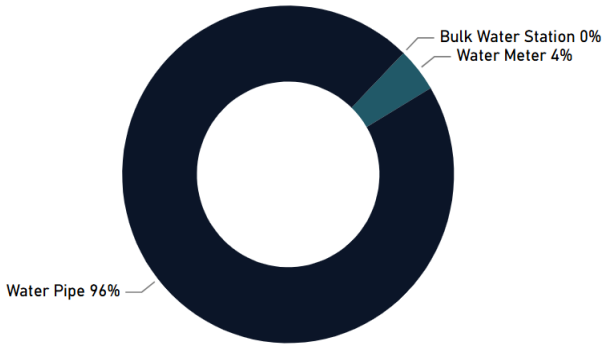
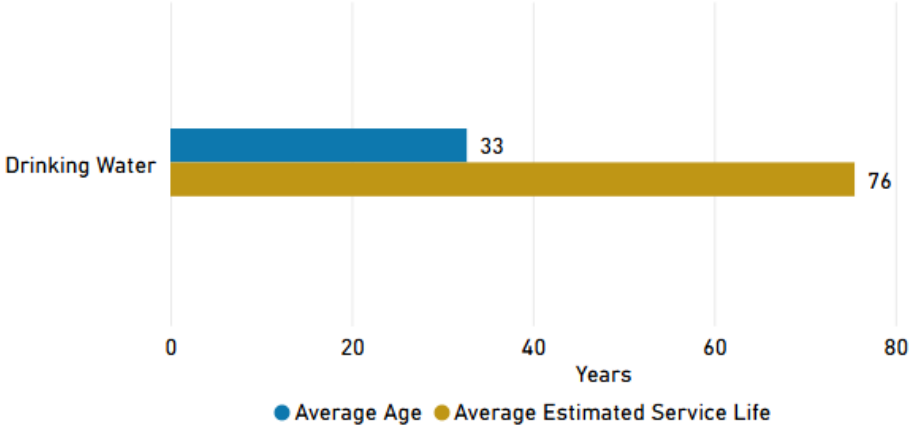


Figure 39: Drinking Water – Age and Estimated Service Life



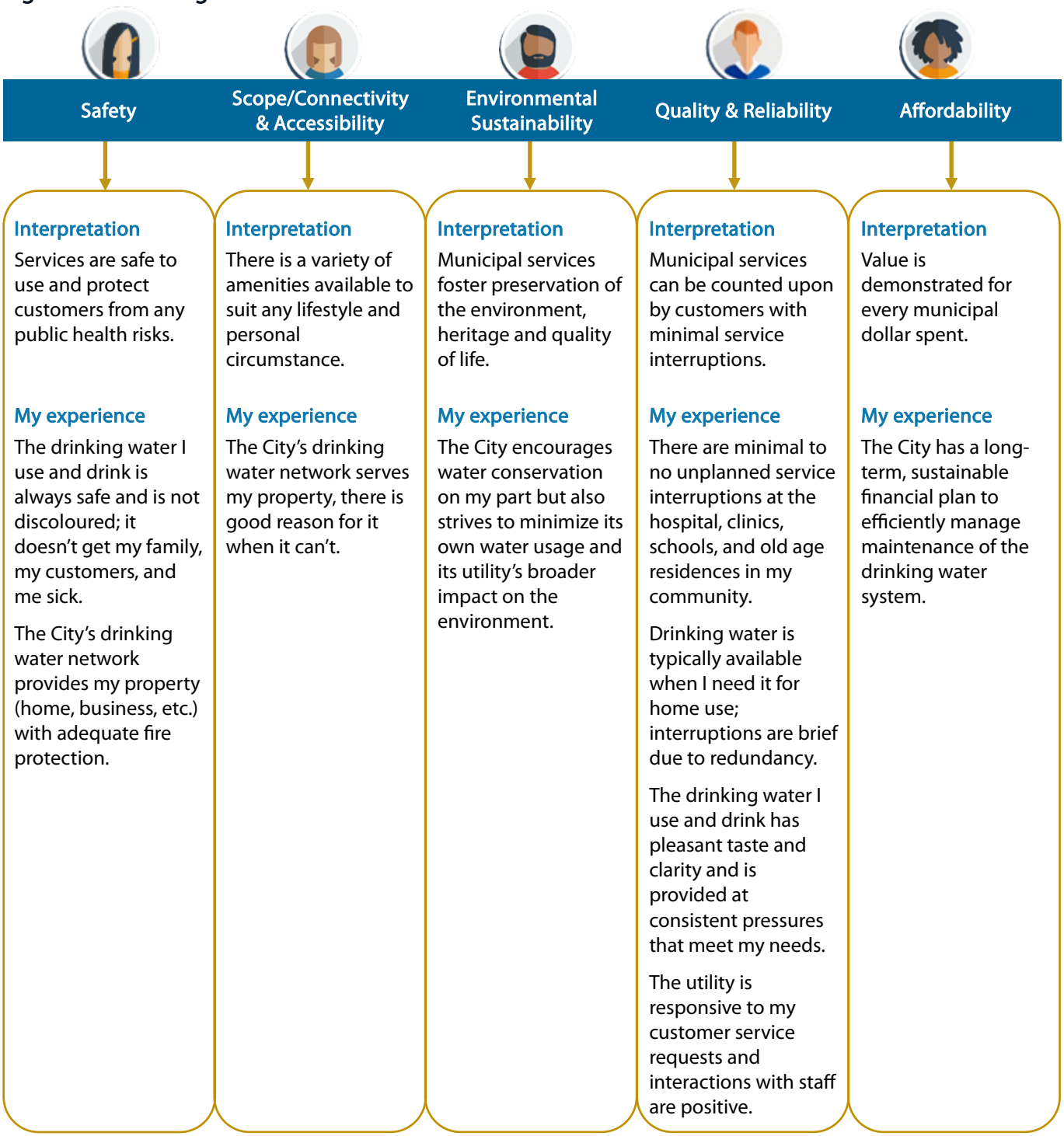
B.3 Levels of Service

B.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of drinking water assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our water master plans and construction projects.

Figure 40: Drinking Water – LOS Framework



With the identification of stakeholder-informed drinking water priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

B.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, for our core assets, we are required to report the technical metrics for our current LOS. As such, we have reported the prescribed metrics from the regulation for Drinking Water, as well as additional City-established metrics within our LOS framework. These regulated community metrics tend to be qualitative descriptions of the services provided, while the technical metrics focus on quantitative measures. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 29 and Table 30.

Table 29: Drinking Water – Community Levels of Service

Service Attribute	Performance Measure
Scope	The municipal drinking water system connects to most residential, commercial and industrial spaces in the City. A map showing the extent of the City's water network is provided in Appendix O.
Scope	The municipal drinking water system and hydrant network provides safe drinking water and fire protection to most residential, commercial and industrial spaces in the City
Quality & Reliability	The City is constantly monitoring water quality and service to ensure minimal disruptions and that it complies with the Ontario Drinking Standards, Objectives and Guidelines. In the event of a water quality issue or service disruption, the City will provide notice and guidance to all affected users. The City also has an objective to minimize water loss within the City by detecting leakage and repairing defects in the water system promptly.

Table 30: Drinking Water – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Scope	Percentage of properties connected to the municipal water system	99%	Maintain Current
Scope	Percentage of properties where fire flow is available	99%	Maintain Current

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0 to 41,403 properties	Maintain Current
Quality & Reliability	The number of connection days per year due to water main breaks compared to the total number of properties connected to the municipal water system	71.4 to 41,403 properties	Maintain Current at maximum
Quality & Reliability	Percentage of replacement value of Water assets rated "Very Poor"(or "Poor")	28.67%	28.67%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Water assets	1.33%	1.33%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 31: Drinking Water – Key Performance Indicators (KPI)

Asset	Key Service Attribute	Performance Measure	Current LOS
Valves	Scope / Connectivity & Accessibility	Percentage of valves turned	13%
Hydrants	Scope / Connectivity & Accessibility	Percentage of hydrants inspected	100%
Water Pipe	Scope / Connectivity & Accessibility	Km of water main renewal (lining, replacement) completed	4.81 km
Water Pipe	Scope / Connectivity & Accessibility	Percentage of watermain cleaned (swabbing or flushing) in system	23%
Drinking Water	Quality & Reliability	Number of work orders relating to a public service request	2597

Asset	Key Service Attribute	Performance Measure	Current LOS
Drinking Water	Quality & Reliability	Number of adverse water quality incidents	9
Water Meter	Quality & Reliability	Percentage of target meters proactively replaced	100
Drinking Water	Quality & Reliability	Percentage of nonrevenue water (Volume of Non-Revenue water in % of water purchased)	17.30
Hydrants	Quality & Reliability	Average age hydrants (years)	31
Water Pipe	Quality & Reliability	Average age of water main (or average remaining life) (years)	36
Water Pipe	Quality & Reliability	Number of water main breaks per year	32
Water Pipe	Quality & Reliability	Average age service connection (years)	31
Services	Quality & Reliability	Number of service leaks per year	100
Drinking Water	Environmentally Sustainable	Overall water consumption per account (Non Residential) per day (m^3)	19.79 m^3
Drinking Water	Environmentally Sustainable	Overall water consumption per account (Residential Single Family) per day (m^3)	0.51 m^3
Drinking Water	Environmentally Sustainable	Overall water consumption per account (Residential Multiple Family) per day (m^3)	2.8 m^3

The maps cited in the LOS tables for the City are shown in Appendix O

B.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its drinking water assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 32: Drinking Water – Lifecycle Activities

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Servicing Plans and other strategic plans	All	As required
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years
Quality Management Practices (DWQMS)	All	Annual
Quality Control and Assurance	All	As required
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	As per maintenance schedule
Watermain break monitoring (acoustic leak-detection), analysis, and investigations	Watermains	Ongoing
Valve turning	Watermains	5-6 years
Water quality/Residual maintenance/Dead-end flushing	Watermains	Weekly, bi-weekly or monthly
Proactive swabbing and flushing of selected areas to remove build up (tuberculation) on pipe walls	Watermains	Every 5 years or as required
Lead service identification	Water Services	Ongoing
Shallow services (maintenance/lowering of services)	Water Services	As required
Curb Stop Assessment /Locate	Water Services	As identified
Hydrant Painting	Hydrants	Every 5 years or as required
Hydrant Inspections	Hydrants	Annually

Description	Asset	Frequency
Water Meter Chamber Inspection	Water Meters	As required
Proactive Water Meter Replacement	Water Meters	Every 20 years
Rehabilitation and Renewal		
Rehabilitation (lining) and replacement of water system (pipes) assets based on annual needs assessment	Watermains	As required
Looping dead-end watermains	Watermains	As required
Growth & Service Enhancement		
Construction of new assets and/or upsizing to existing pipes	All	As required
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

B.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance

(condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

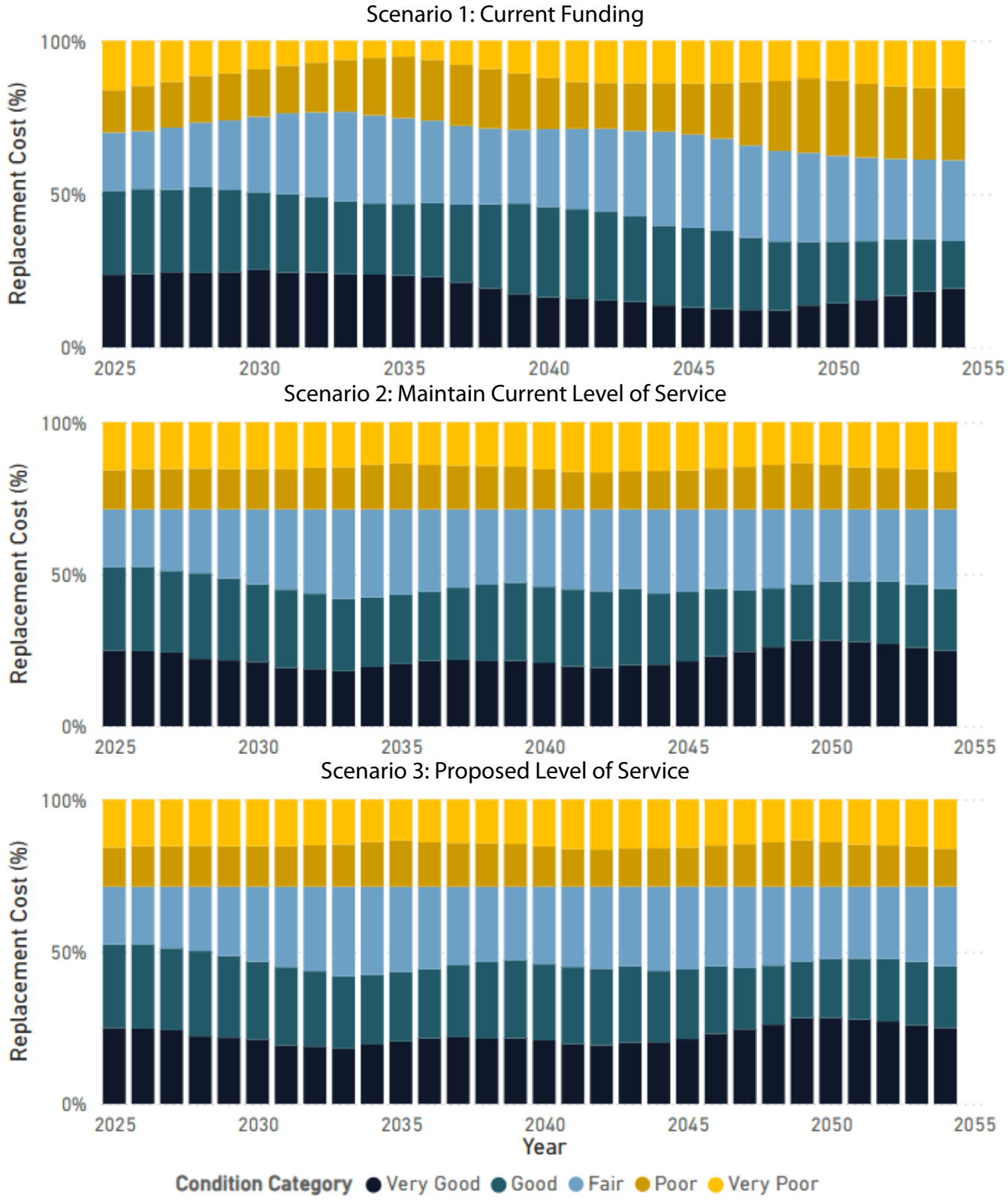
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 41. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 41: Drinking Water – Condition Profiles for Service Level Scenarios



Scenario 1: Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $12.0M. The condition distribution for the anticipated funding scenario is shown in Figure 41. Overall condition decreases in this scenario.

Under current funding, asset conditions deteriorate significantly over time. The proportion of assets in "Very Poor" and "Poor" condition increases steadily, especially after 2035, while assets in "Good" and "Very Good" condition decline. This scenario highlights an increasing infrastructure deficit and growing long-term risk due to insufficient reinvestment.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $9.2M for renewal, rehabilitation and replacement activities is needed to maintain performance for Drinking Water Assets with no capital funding gap. The performance forecast for scenario 2 is shown in Figure 41.

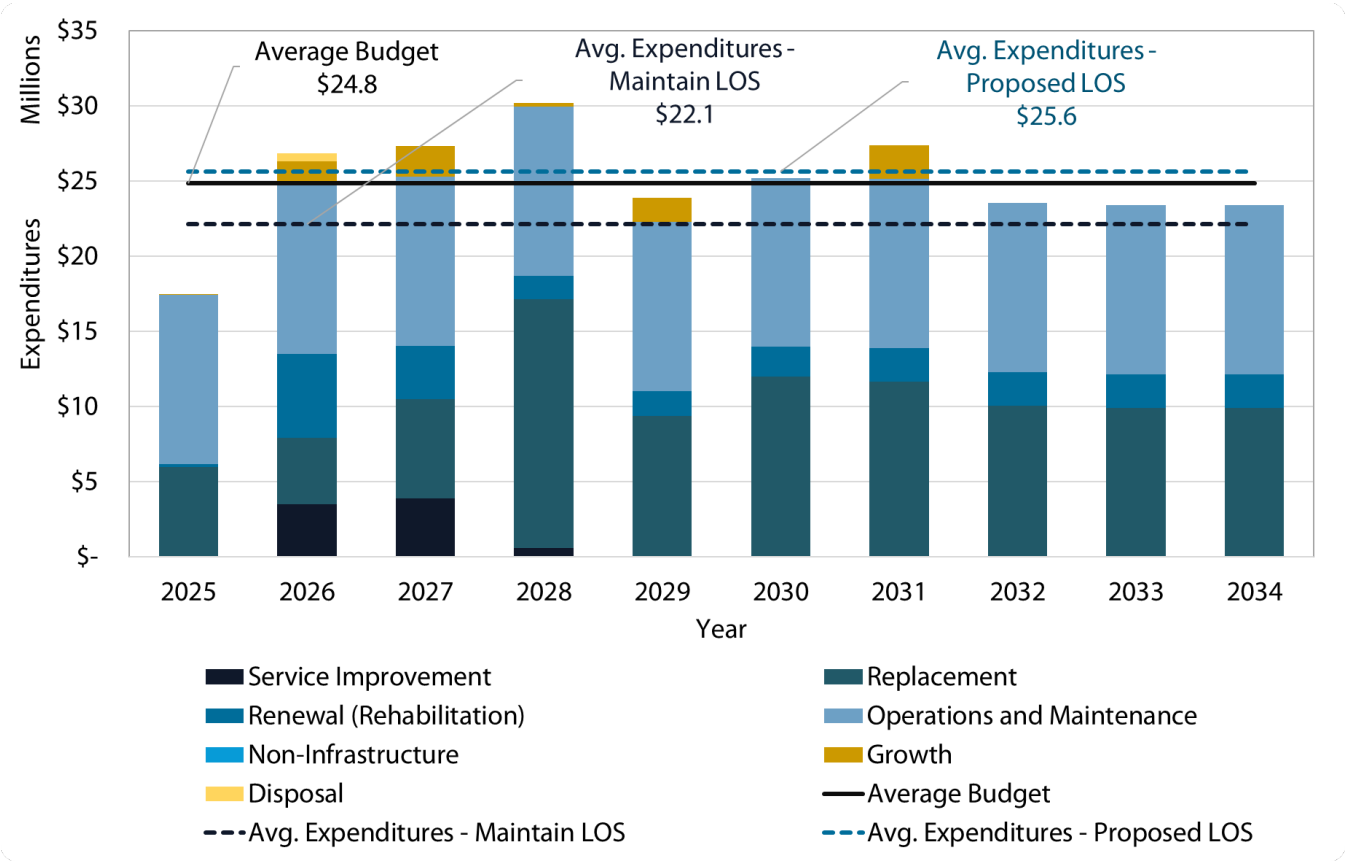
This scenario shows a more stable long-term outlook for Drinking Water assets. While some decline still occurs, assets in "Good" and "Very Good" condition decline at a slower rate. "Poor" and "Very Poor" condition assets remain relatively consistent. The current level of investment is sufficient to prevent major deterioration but does not significantly improve asset condition.

Scenario 3: Proposed Level of Service

It was determined that an average annual budget of $12.8M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Drinking Water Assets with a capital funding gap of $777K. This scenario is closely aligned with Scenario 2 and prevents major deterioration of asset condition.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 42 and Table 33, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 42: Drinking Water – Expenditure Scenario Comparison



The scenario comparison indicates that Drinking Water has an average annual total gap of $835K to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $777K, and the O&M gap, which is discussed below. The water system is expected to grow over the next 10 years to service additional population and support growing industries and hence the need for additional operating costs to maintain water system infrastructure.

The total funding gap is outlined in Table 33. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize Drinking Water maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 33 shows that maintaining the current level of service requires $9.2M in average annual renewal, rehabilitation, and replacement investments. Achieving the proposed level of service requires an average annual $12.8M for renewal, rehabilitation and replacement activities. In total, the proposed LOS average annual capital gap is $777K.

An average annual O&M gap of $58K is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 33: Drinking Water – Lifecycle Activity Investments & Average Annual Infrastructure Gap

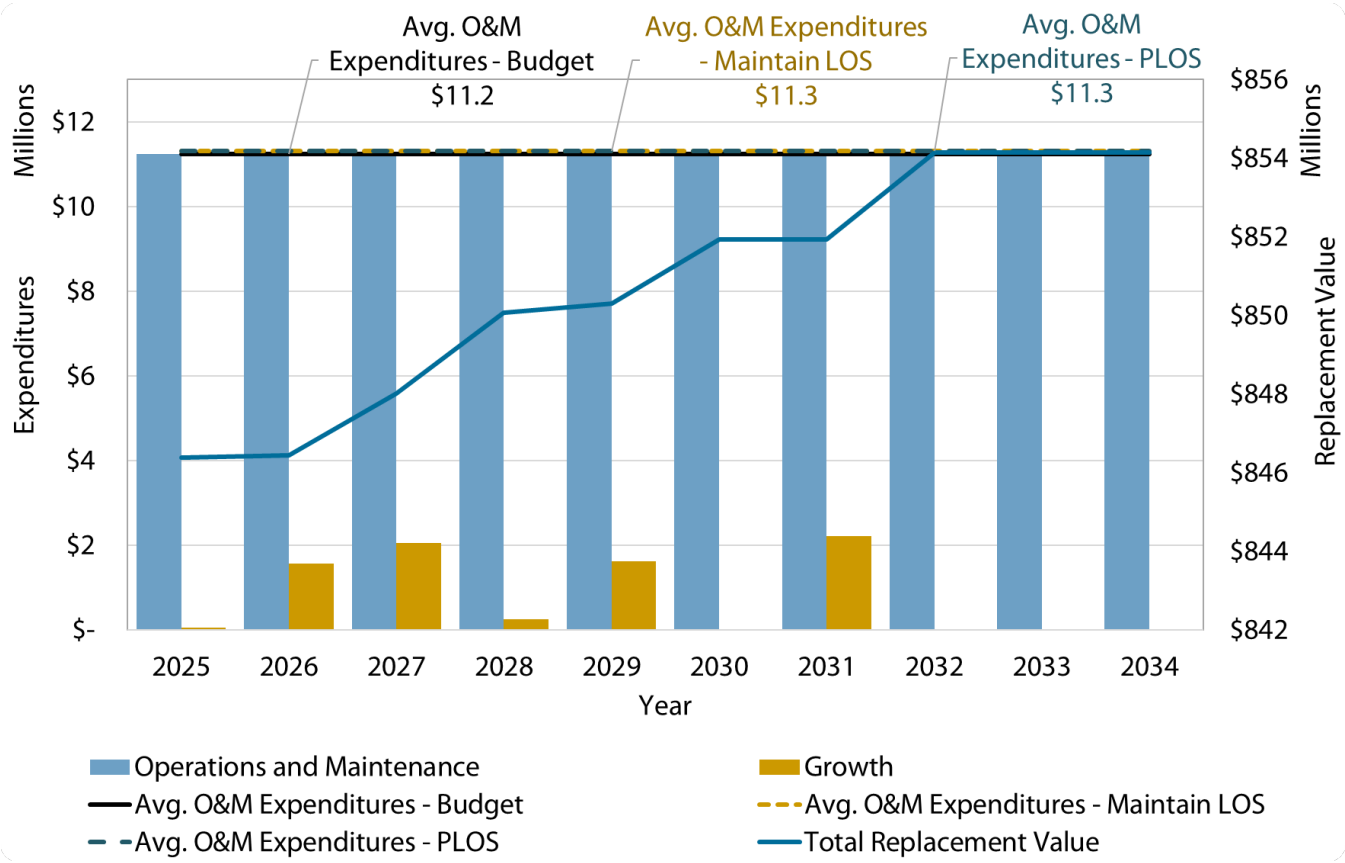
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$775,974	$775,974	$775,974
Non-Infrastructure	$0	$0	$0
Rehabilitation & Replacement	$11,975,648	$9,168,113	$12,752,225
Service Improvement	$799,050	$799,050	$799,050
Total Capital Expenditures	$13,550,672	$10,743,137	$14,327,249
Capital Infrastructure Gap		No Gap[5]	$776,577
Operations & Maintenance	$11,248,500	$11,306,502	$11,306,502
Operations & Maintenance Gap		$58,002	$58,002
Total Expenditures	$24,799,172	$22,049,639	$25,633,751
Total Funding Gap		**No Gap[5]**	$834,579
Gap as Percentage of Replacement Value		**No Gap[5]**	**0.10%**

The growth and O&M expenditures shown in Figure 42 are shown in greater detail in Figure 43, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Drinking Water assets, additional O&M were only required to accommodate growth, which accounts for $58K of the total annual average funding gap. This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

[5] "No Gap" indicates that capital and/or operating funding associated with the LOS scenario is achievable with the available budget

Figure 43: Drinking Water – Operations & Maintenance – Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

B.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Drinking Water assets are provided in Table 34.

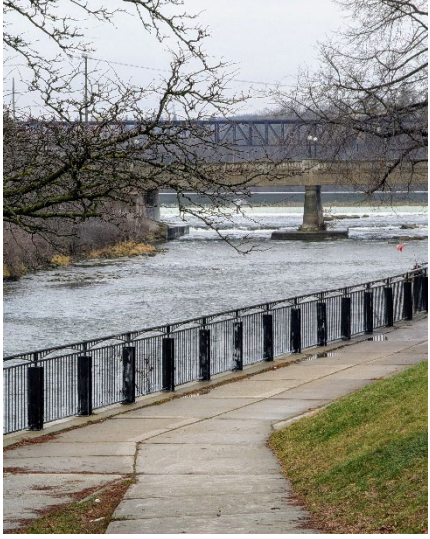
Table 34: Drinking Water – Data Confidence

Asset Class	Data Source	Data Confidence
Water System	GIS Database	High

Opportunities for improvement include:

Water System

- Maintain ongoing continuous improvement program to reduce non-revenue water use which includes, water loss through water main and service breaks, Hydrant flushing program, dead-end flushing program and other system maintenance program.



Appendix C

Stormwater Asset Management Plan

C.1 Introduction

The City maintains a diverse portfolio of stormwater assets to effectively manage precipitation throughout the community. Stormwater is a part of the environmental services provided by the City and has one asset class.

Table 35: Stormwater – Assets

Asset Class	Stormwater
Asset Type	• Storm System • Stormwater Management Facilities • Culverts • Dams

This collection of assets is critical to our City as the sound management of stormwater for the community helps us realize our vision of a clean and green city. Like many of our assets, stormwater assets are facing increased challenges as a result of aging infrastructure, climate change, and increasing demand due to growth in our City. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

This appendix provides information regarding our approach to the management of stormwater assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

C.1.1 Strategic Connections

The following strategic and master plans related to stormwater assets were considered while developing this AMP.

Table 36: Stormwater – Strategic Connections

Document	Strategic Connection
Master Plans	Includes stormwater management plans guiding infrastructure investment, regulatory compliance, and system resilience.
Asset Management Plan Documents	Provides long-term planning for storm infrastructure maintenance, renewal, and expansion.
Annual Business Plan	Outlines operational goals, performance targets, and funding allocations for stormwater management.
Proposed Capital Investment Plan	Allocates funding for stormwater infrastructure upgrades, sewer system expansions, and improvements.
Operating Budget & Forecast	Covers ongoing costs for stormwater system maintenance, infrastructure inspections, and regulatory compliance.
Climate Adaptation Plan	Addresses risks such as increased flooding, extreme weather events, and impacts on storm systems, promoting resilient infrastructure.
Strategic Plan	Aligns stormwater management goals with broader municipal infrastructure priorities, including sustainability and service reliability.
Region of Waterloo Strategic Plan	Supports regional goals for sustainable stormwater management, and flood prevention.
Development Charges Background Study	Identifies how new developments contribute to stormwater infrastructure funding, ensuring sustainable growth.
City of Cambridge Official Plan	Guides stormwater management planning, ensuring alignment with environmental policies and land-use decisions.
Growth Plan for the Greater Golden Horseshoe	Addresses how population growth impacts stormwater systems, emphasizing sustainable and resilient infrastructure.

C.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 37: Stormwater – Key Considerations

Type	Considerations
 Climate Risk	• Severe storms; flash flooding resulting in increased erosion and property damage
 Climate Adaptation	• Design and modify storm system for increased probability of severe storms • Increased maintenance requirements for stormwater assets (e.g. storm ponds; ditches, catch basins) • Promotion of Low Impact Development (LID) for onsite storage and infiltration of stormwater.
 Climate Mitigation	• N/A
 Heritage Interest	• No significant interests
 Accessibility Interest	• No significant interests

C.2 State of Infrastructure

C.2.1 Overview

Stormwater assets are those that enable us to effectively manage precipitation throughout the City. It includes the stormwater network that collects and directs rainfall runoff and the facilities that store it. The following tables provide an overview of the current state of our stormwater assets.

Table 38: Stormwater – Overview

Replacement Value (000s)	Condition	Asset Class
$1,073,750	Good	One
Total replacement value of all assets within the stormwater asset class.	Weighted average condition rating of stormwater assets across all subclasses.	Distinct asset class that we manage as a part of our municipal stormwater portfolio.

C.2.2 Asset Class

Table 39: Stormwater – Asset Class Overview

Stormwater
• 401 km of Storm Pipes • 134 Stormwater Management Facilities • 3 Dams • 548 Storm Outlets • 158 Storm Inlets • 48 Oil and Grit Separators • 1,260 Storm Culverts

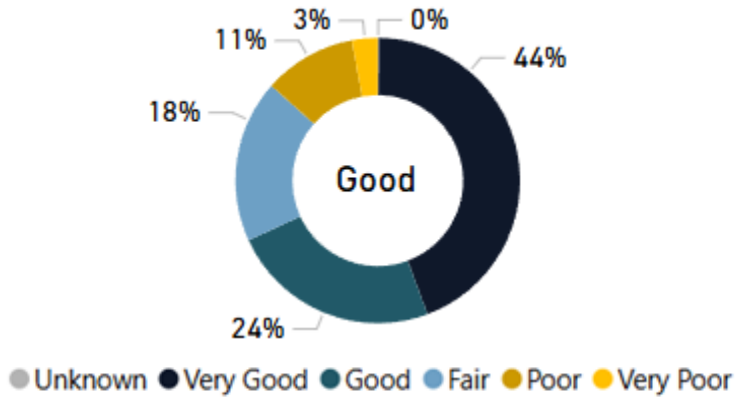


Figure 44: Stormwater – Asset Class Condition Breakdown by Replacement Value

Stormwater

Replacement Value ('000s)

$1,073,750

Weighted Avg. Condition Rating

Good

Average Age

29 Years

Figure 45: Stormwater (% Replacement Value)

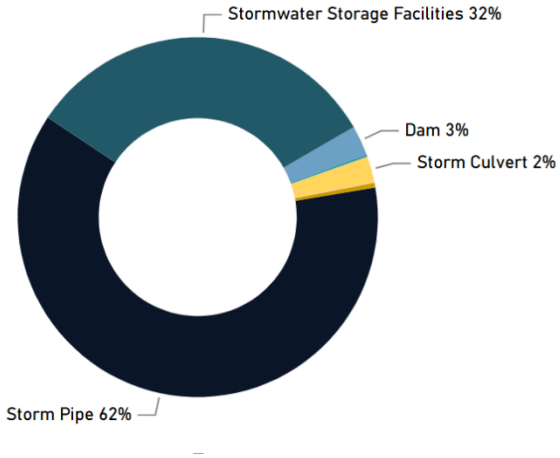
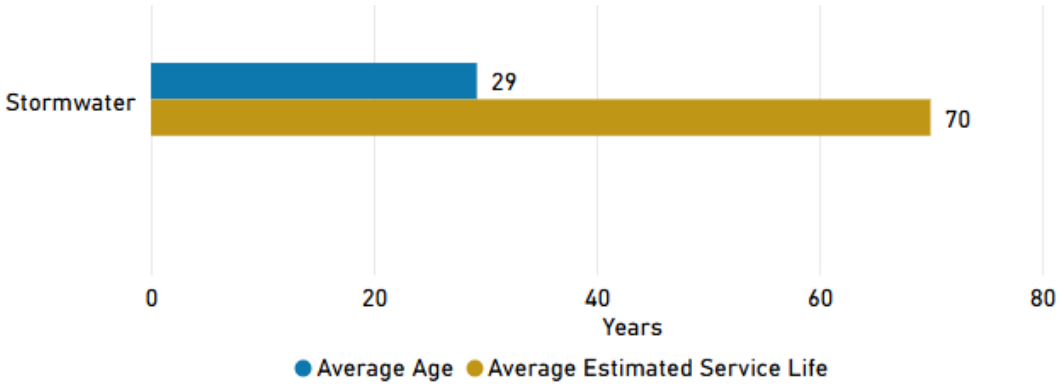


Figure 46: Stormwater – Age and Estimated Service Life



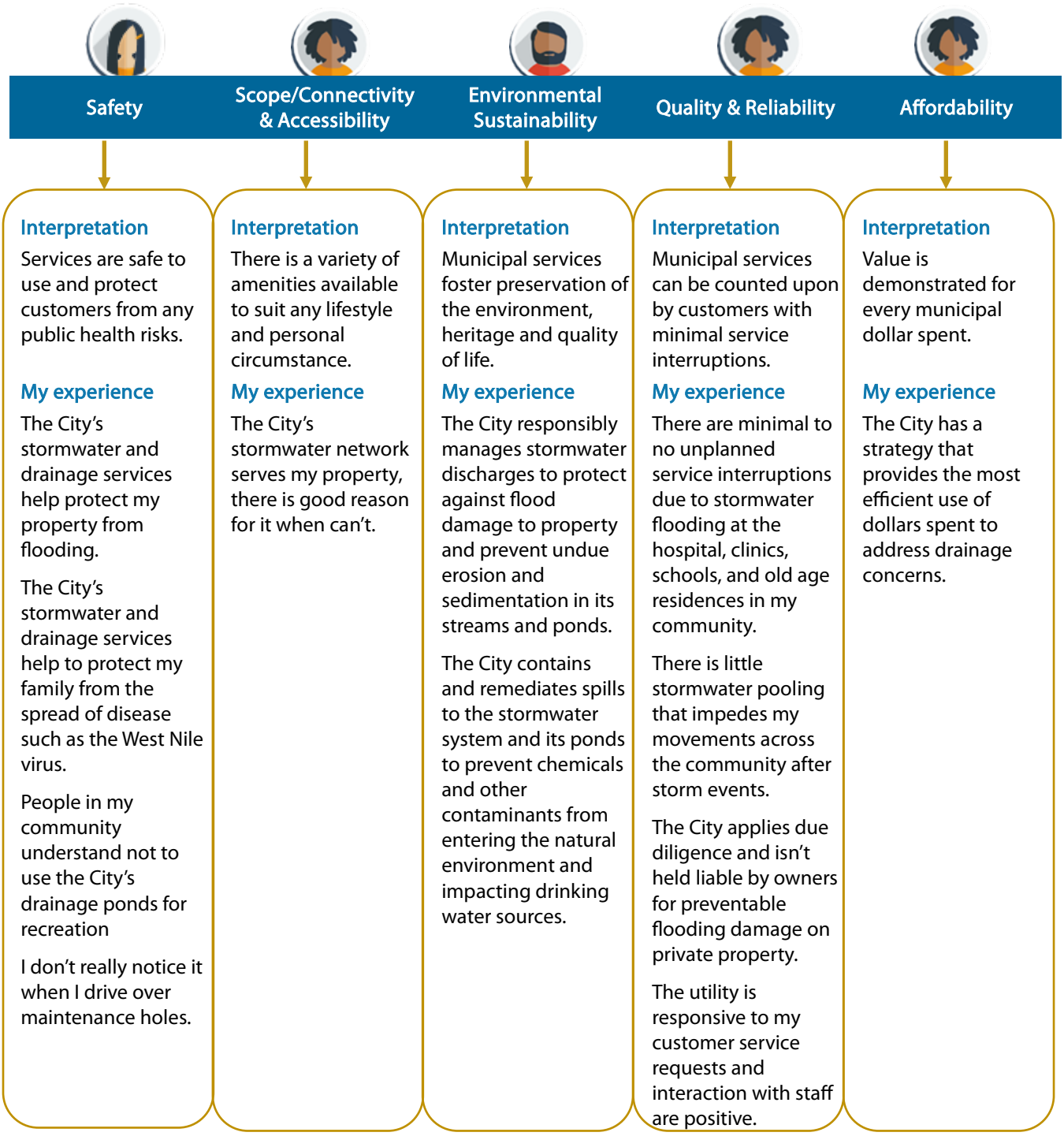
C.3 Levels of Service

C.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations. Establishing Stormwater as a distinct utility and user rate as recommended in prior studies, should also be taken into consideration, as these studies identified the need to increase service levels with dedicated funding.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. We have identified the concerns and priorities of our stakeholders in the "My Experience" headings below. These priorities come from stakeholder feedback through comments received during our day-to-day operations and dedicated feedback channels undertaken to support our Stormwater Master Plan.

Figure 47: Stormwater – LOS Framework



With the identification of stakeholder-informed stormwater priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

C.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, for our core assets, we are required to report the technical metrics for our current LOS. As such, we have reported the prescribed metrics from the regulation for Stormwater, as well as additional City-established metrics within our LOS framework. These regulated community metrics tend to be qualitative descriptions of the services provided, while the technical metrics focus on quantitative measures. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 40 and Table 41.

Table 40: Stormwater – Community Levels of Service

Service Attribute	Performance Measure
Scope	The municipal stormwater system mitigates the risk of fooding throughout the entire City. The City has outlined maps of its stormwater system. Specifically, those residences and businesses located near or on the floodplain benefit from having an effective stormwater management system. We strive to protect the environment and implement quality measures before releasing stormwater to the environment. A map showing the extent of the City's stormwater network is provided in Appendix O.

Table 41: Stormwater – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Scope	Percentage of properties in the municipality resilient to a 100-year storm	95%	Maintain Current
Scope	Percentage of the municipal stormwater management system resilient to a five-year storm	98%	Maintain Current
Quality & Reliability	Percentage of replacement value of Stormwater assets rated "Very Poor"(or "Poor")	13.44%	14.06%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Stormwater assets	0.39%	0.5%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 42: Stormwater – Key Performance Indicators (KPI)

Asset	Key Service Attribute	Performance Measure	Current LOS
Stormwater	Quality & Reliability	Number of work orders relating to a public service request	81
Stormwater	Quality & Reliability	Water Quality Metric	Future
Stormwater Management Facilities	Quality & Reliability	Pond dredging metric	Future
Stormwater Pipes	Quality & Reliability	Km of storm pipe renewal (reconstruction) completed	1 km
Stormwater Pipes	Quality & Reliability	Average age of stormwater pipe (or average remaining life) years	34
Stormwater Pipes	Quality & Reliability	Average PACP[6] structural condition	1 ("Very Good")

The maps cited in the LOS tables for the City are shown in Appendix O.

C.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its stormwater assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown in Table 43.

Table 43: Stormwater – Lifecycle Activities

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Master Plans (Stormwater Management MP) and other strategic plans	All	5 years (alternating renew & Update
Stakeholder engagement to understand community needs	All	As required

[6] PACP: Pipeline Assessment Certification Program (NASSCO)

Description	Asset	Frequency
Development Charges Study Report to determine needs	All	5 years
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	Maintenance schedule varies by asset type
Formal stormwater pipe condition assessment using CCTV	Stormwater Pipes	As per CCTV program
Formal condition assessment of Stormwater Management Facilities	Stormwater Management Facilities	2-3 years
Formal condition assessment of River Dams	Dams	5-10 years
Temporary Flood Wall testing, maintenance, and installation	Temp Flood walls	Annually
Grate inspections	Grates	Annually
Inspections	Maintenance Holes, Catch basins	As per inspection program
Visual Inspections	Minor Culverts	As needed
Inspections	Stormwater Management Facilities	Annually
OGS cleanout	Oil/Grit Separators	Annually or as required
OGS inspection	Oil/Grit Separators	Annually
Dual use Maintenance hole Inspection and Valve Operation	Maintenance Holes	Annually
Catch basin cleaning	Catch basins	Annually (25% per year)
Storm Flap Gate inspections	Storm Flap Gates	Annually
Ditch maintenance	Ditches	As required
Street sweeping	Roads	As per Minimum Maintenance Standards (MMS) or Regional Maintenance Agreement
Leaf pick up and disposal	Roads	Annually
Sampling and Monitoring	Stormwater Services	TBD

Description	Asset	Frequency
Rehabilitation and Renewal		
Replacement of storm system (pipes) assets based on annual needs assessment	Stormwater Pipes	As required
Replacement of storm culverts based on annual needs assessment	Minor Culverts	As required
Rehabilitation of stormwater management facilities (vegetation/sediment removal) based on annual needs assessment	Stormwater Management Facilities	As required (in future will be based on bathymetric survey)
Forebay cleanout	Stormwater Management Facilities	Future
Rehabilitation of river dams based on annual needs assessment	Dams	As required
Growth & Service Enhancement		
Construction of new pipes or upsizing to existing pipes	Stormwater Pipes	As per needs assessment
Upgrades to urban drainage systems that are subject to frequent but isolated flooding issues	Stormwater Network	As per development and master plans
Disposal		
Disposal activities related to replacement	All	As required

C.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

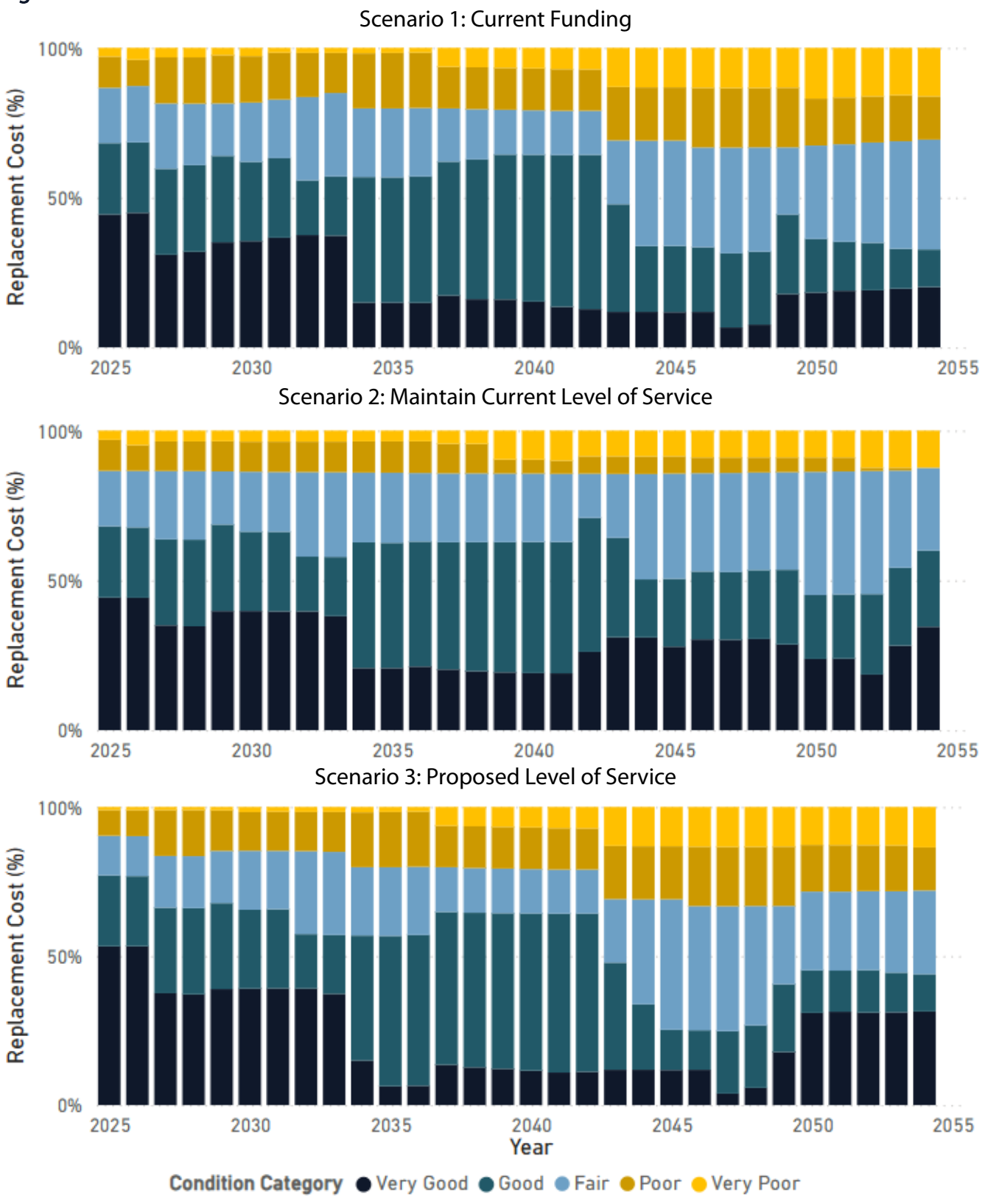
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 48. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 48: Stormwater – Condition Profiles for Service Level Scenarios



Scenario 1: Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $6.4M. The condition distribution for the anticipated funding scenario is shown in Figure 48. Overall condition decreases in this scenario.

The proportion of assets in "Very Good" condition declines steadily, while the share in "Poor" and "Very Poor" categories grows substantially, particularly after 2040. By 2055, a large portion of assets are in substandard condition, indicating that current funding levels are inadequate to maintain the existing infrastructure.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $19.1M for renewal, rehabilitation and replacement activities is needed to maintain performance for Stormwater Assets with a capital funding gap of $12.7M. The performance forecast for scenario 2 is shown in Figure 48.

This scenario shows a more stable profile over the 30-year period. The distribution of assets remains relatively consistent, with a balanced presence of "Very Good," "Good," and "Fair" conditions. Although there are some fluctuations, the proportions of assets in "Poor" and "Very Poor" condition remain comparatively low. This scenario suggests that maintaining current service levels with appropriate funding helps preserve asset quality and avoids the rapid decline seen in Scenario 1.

Scenario 3: Proposed Level of Service

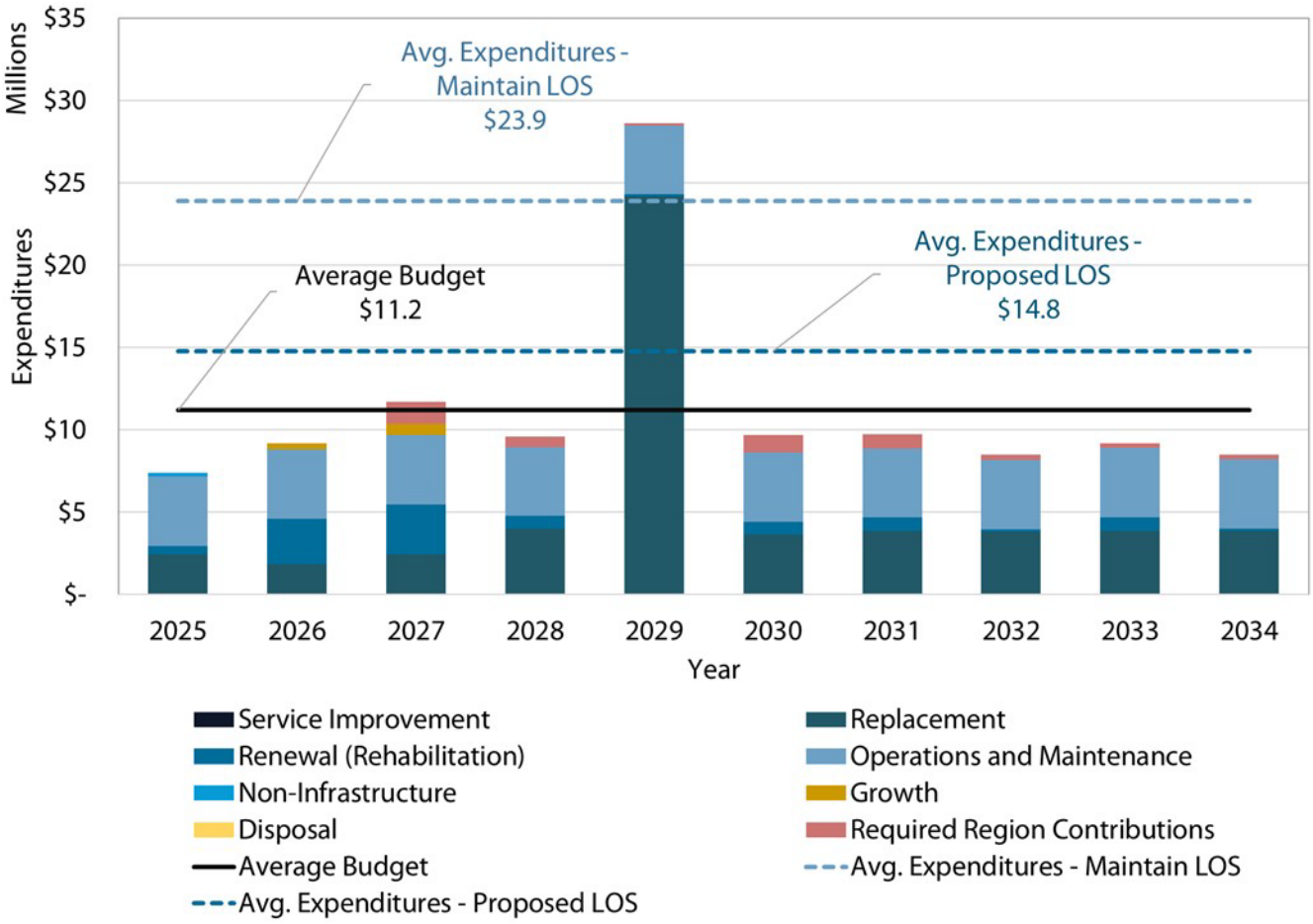
It was determined that an average annual budget of $8.8M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Stormwater Assets with a capital funding gap of $2.4M.

This scenario shows a proactive investment approach with long-term benefits. Although asset conditions temporarily dip around the mid-2030s to early 2040s—with a rise in “Poor” and “Very Poor” assets—the scenario demonstrates a strong recovery beginning around 2050. By 2055, the proportion of assets in “Very Good” condition increases significantly, and lower-risk categories dominate the profile. This indicates that the proposed service level supports a strategic reinvestment cycle, where initial upgrades take time to implement but ultimately result in improved asset health, sustainability, and long-term resilience.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 49 and Table 44, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

The City has recently moved the cost to provide stormwater management to the water bill with a separate user rate, with 50% of costs recovered through the 2025 Budget. The complete cost of the stormwater budget will be removed from the property tax bill effective with the 2026 budget. This change allows the City to establish a dedicated funding source for stormwater assets that are increasingly under pressure as a result of climate change and have been historically underfunded.

Figure 49: Stormwater – Expenditure Scenario Comparison



The scenario comparison indicates that Stormwater has an average annual total gap of $3.6M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $2.4M, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 44. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize Stormwater maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 44 shows that maintaining the current level of service requires $19.1M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $12.7M. Achieving the proposed level of service requires an average annual $8.8M for renewal, rehabilitation and replacement activities. In total, the proposed LOS average annual capital gap is $2.4M.

An average annual O&M gap of $1.2M is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 44: Stormwater – Lifecycle Activity Investments & Average Annual Infrastructure Gap

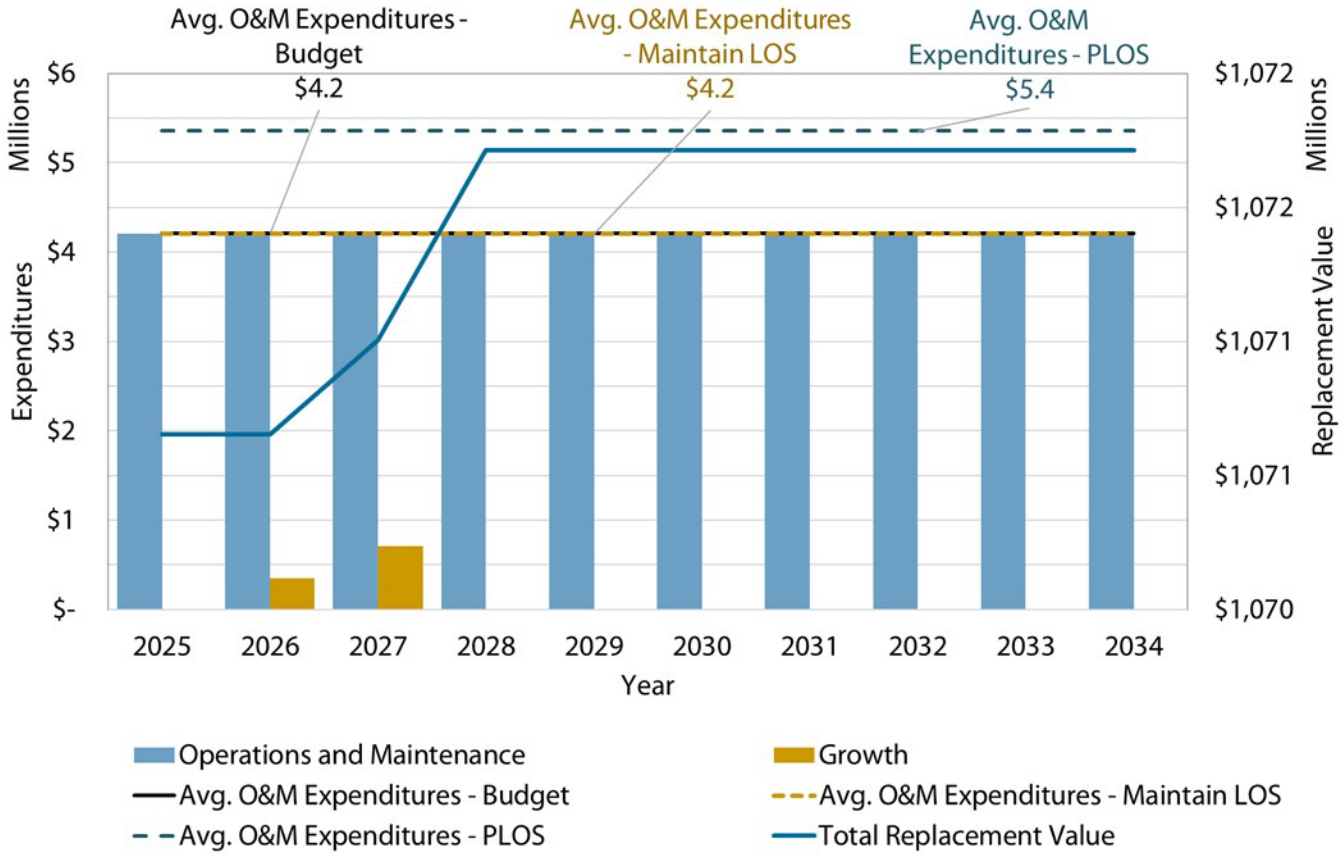
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$105,870	$105,870	$105,870
Non-Infrastructure	$23,300	$23,300	$23,300
Required Regional Contributions	$483,780	$483,780	$483,780
Rehabilitation & Replacement	$6,385,028	$19,081,745	$8,798,716
Service Improvement	$0	$0	$0
Total Capital Expenditures	$6,997,978	$19,694,695	$9,411,666
Capital Infrastructure Gap		$12,696,717	$2,413,688
Operations & Maintenance	$4,205,700	$4,208,740	$5,372,631
Operations & Maintenance Gap		$3,040	$1,166,931
Total Expenditures	$11,203,678	$23,903,435	$14,784,297
Total Funding Gap		**$12,699,757**	**$3,580,619**
Gap as Percentage of Replacement Value		**1.18%**	**0.33%**

The growth and O&M expenditures shown in Figure 49 are shown in greater detail in Figure 50, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing

maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Stormwater assets, additional O&M were only required to accommodate growth, which accounts for $1.2M of the total annual average funding gap.

Figure 50: Stormwater – Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

C.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Stormwater assets are provided in Table 45.

Table 45: Stormwater – Data Confidence

Asset Class	Data Source	Data Confidence
Stormwater	GIS Database	High

Opportunities for improvement include:

Stormwater

- Some stormwater assets including inlets and outlets were reliant on an assumed age-based condition, these assets would benefit from inspection and condition assessment to ensure that they are meeting the required levels of service and not negatively impacting the overall quality and effectiveness of the stormwater system.
- Review and improve data processes related to stormwater management facilities, such as determining replacement value and condition assessment.

Appendix D

Wastewater Asset Management Plan

D.1 Introduction

The City maintains a diverse portfolio of wastewater assets to manage sewage collection throughout the City. Wastewater is a part of the environmental services provided by the City and has one asset class.

Table 46: Wastewater – Assets

Asset Class	Wastewater
Asset Type	• Sanitary System • Sanitary Pumping Stations

This collection of assets is critical to our City as the provision of safe, reliable wastewater service for our customers, while preventing environmental pollution helps us comply with all regulatory requirements and continually improve delivery of a clean and green city. Like many of our assets, wastewater assets are facing increased challenges as a result of aging infrastructure, climate change, and increasing demand due to growth in our City. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

Given the intricacies of our asset base, it is important to distinguish between the City's services and the Region of Waterloo's services. The Region of Waterloo owns and manages treatment plants for wastewater. As such, the Regional assets that provide these services are not included as part of this AMP.

This appendix provides information regarding our approach to the management of wastewater assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

D.1.1 Strategic Connections

The following strategic and master plans related to wastewater assets were considered while developing this AMP.

Table 47: Wastewater – Strategic Connections

Document	Strategic Connection
Master Plans	Includes wastewater management plans guiding infrastructure investment, regulatory compliance, and system resilience.
Asset Management Plan Documents	Provides long-term planning for wastewater infrastructure maintenance, renewal, and expansion.
Annual Business Plan	Ensures sustainable funding for City wastewater collection system, pumping stations and contribution to Region for wastewater treatment.
Proposed Capital Investment Plan	Allocates funding for sewer lining, replacement, renewal and system expansions, and wastewater improvements.
Operating Budget & Forecast	Covers ongoing costs for wastewater collection and conveyance operations, infrastructure inspections, and regulatory compliance.
Long-Range Financial Plans	Ensures sustainable funding for wastewater collection system, pumping stations, and contribution to Region for wastewater treatment.
Climate Adaptation Plan	Addresses risks such as increased flooding, extreme weather events, and impacts on wastewater systems, promoting resilient infrastructure through maintenance and prevention of inflow and infiltration.
Energy Conservation and Demand Management Plan	Encourages energy-efficient wastewater pumping stations.
Strategic Plan	Aligns wastewater management goals with broader municipal infrastructure priorities, including sustainability and service reliability.
Region of Waterloo Strategic Plan	Supports regional goals for sustainable water management, flood prevention, and efficient wastewater treatment.
Development Charges Background Study	Identifies how new developments contribute wastewater infrastructure funding, ensuring sustainable growth.
City of Cambridge Official Plan	Guides wastewater infrastructure planning, ensuring alignment with environmental policies and land-use decisions.

Document	Strategic Connection
Growth Plan for the Greater Golden Horseshoe	Addresses how population growth impacts wastewater capacity, emphasizing sustainable and resilient infrastructure.

D.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 48: Wastewater – Key Considerations

Type	Considerations
 Climate Risk	• Severe storms; flash flooding causing inflow and infiltration
 Climate Adaptation	• Reduce inflow and infiltration due to rain events
 Climate Mitigation	• Reduce fossil fuel requirements for pumping stations (generators)
 Heritage Interest	• No significant interests
 Accessibility Interest	• Pump stations to meet City's Facilities Accessible Design Standards (FADS), as required

D.2 State of Infrastructure

D.2.1 Overview

Wastewater assets are those that enable us to effectively manage sewage. It includes the wastewater pipes that service our homes, and the pumping stations used to support the collection and conveyance of wastewater. Our wastewater assets are some of our most utilized and important assets, as our community would not thrive without them. We recognize that these assets are imperative to the livelihood of our community and therefore must be managed and maintained.

Table 49: Wastewater – Overview

Replacement Value ('000s)	Condition	Asset Class
$856,896	Good	One
Total replacement value of all assets within the wastewater asset class.	Weighted average condition rating of wastewater assets across all subclasses.	Distinct asset class that we manage as a part of our municipal wastewater portfolio.

D.2.2 Asset Class

Table 50: Wastewater – Asset Class Overview

Wastewater

- 560 km Sanitary Pipes (includes appurtenances and services)
- 19 Pumping Stations

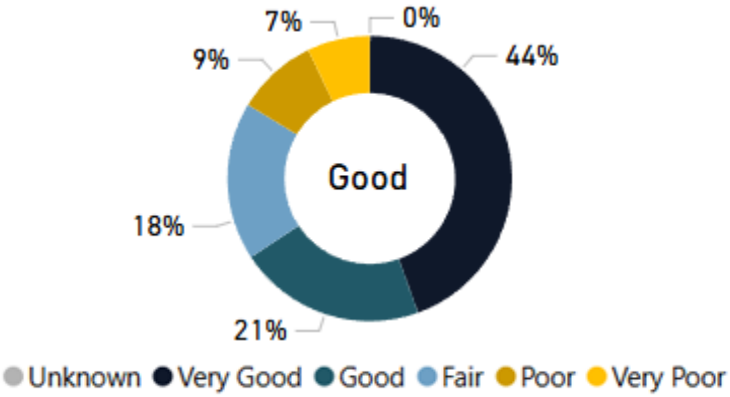


Figure 51: Wastewater – Asset Class Condition Breakdown by Replacement Value

Wastewater

Replacement Value ('000s)

$856,896

Weighted Avg. Condition Rating

Good

Average Age

34 Years

Figure 52: Wastewater (% Replacement Value)

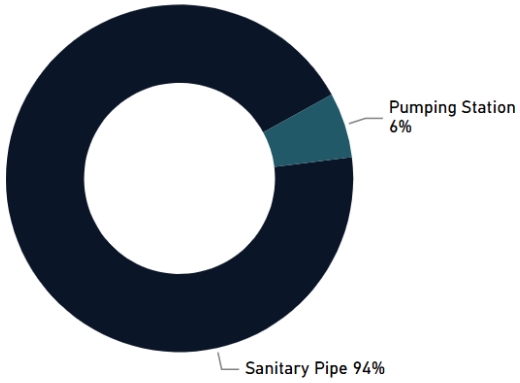
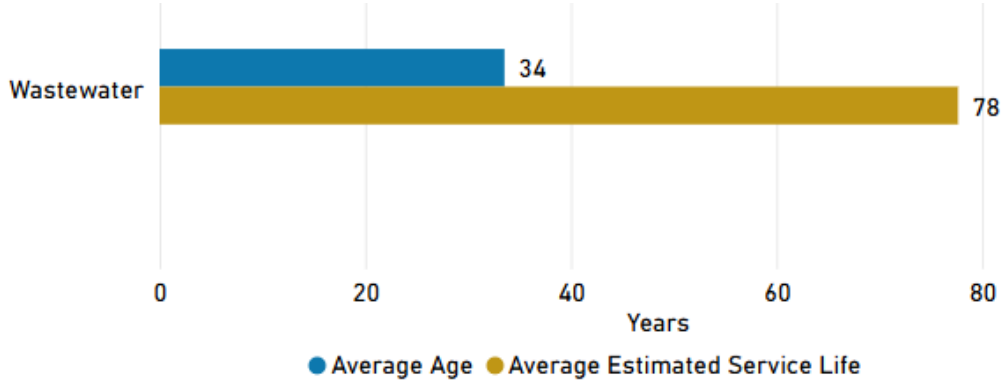


Figure 53: Wastewater – Age and Estimated Service Life



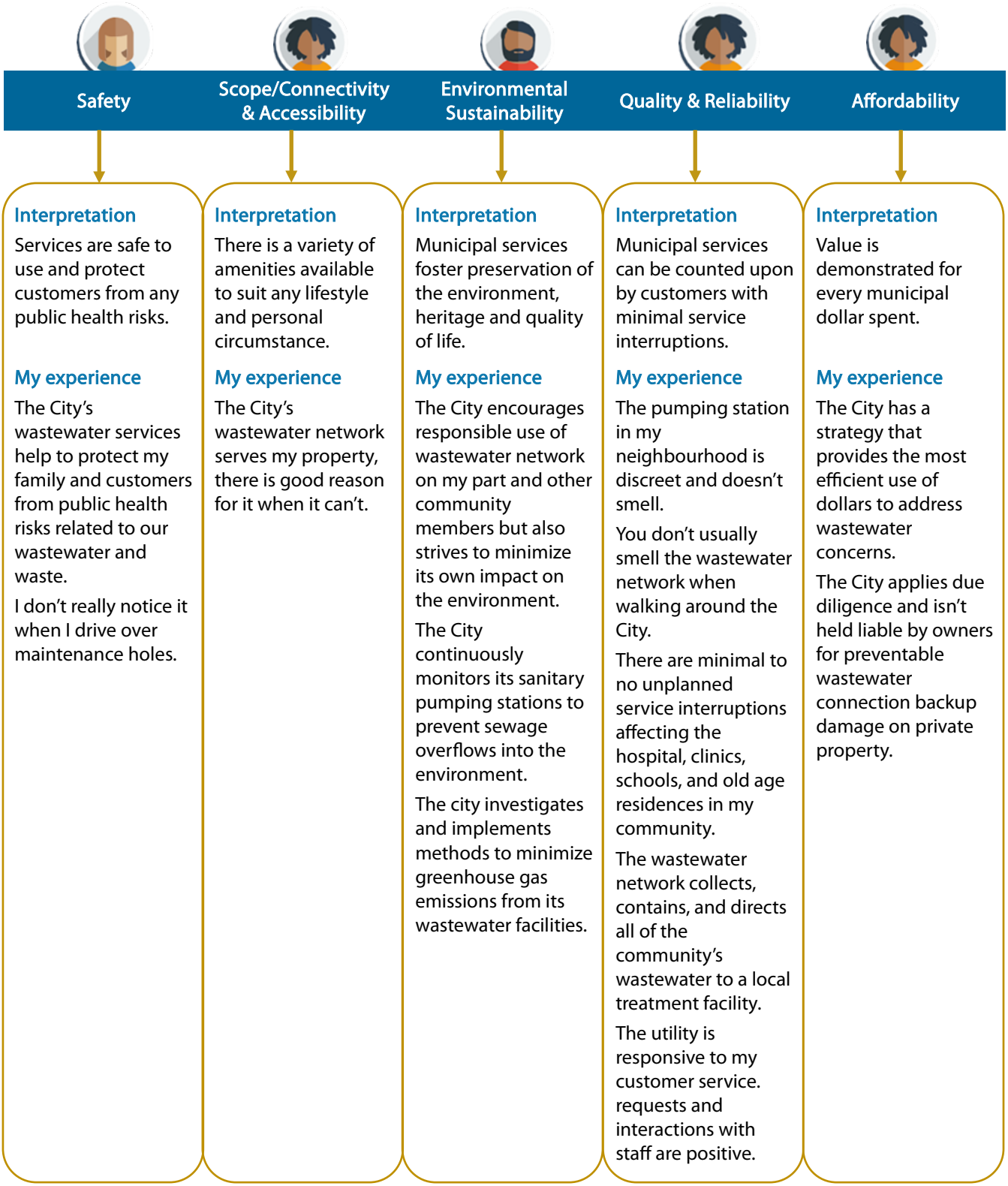
D.3 Levels of Service

D.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of wastewater assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our Wastewater Master Plan.

Figure 54: Wastewater – LOS Framework



With the identification of stakeholder-informed wastewater priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

D.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, for our core assets, we are required to report the technical metrics for our current LOS. As such, we have reported the prescribed metrics from the regulation for Wastewater, as well as additional City-established metrics within our LOS framework. These regulated community metrics tend to be qualitative descriptions of the services provided, while the technical metrics focus on quantitative measures. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 51 and Table 52. Community Levels of Service focus on providing a safe and reliable wastewater conveyance service for an affordable price and minimal personal disruption due to system repairs and maintenance. Technical Service Levels focus on establishing and tracking key performance indicators (KPI's) in order to prioritize maintenance and capital replacement needs.

Table 51: Wastewater – Community Levels of Service

Service Attribute	Performance Measure
Scope	Most of the residential, commercial, and industrial spaces in the City receive service from the municipal wastewater system. A map showing the extent of the City's wastewater network is provided in Appendix O.
Quality & Reliability	The number of sanitary overflows from the City's wastewater pumping stations is very low due to the continuous monitoring and alarm systems in place.
Quality & Reliability	The number of backups from the City's wastewater collection system is minimal due to regular inspections and maintenance programs.
Quality & Reliability	The City does not have any combined sewers
Quality & Reliability	Reducing stormwater infiltration into sanitary sewers and minimizing overloading of the municipal wastewater system is an objective of the City.
Quality & Reliability	Sanitary sewers in the municipal wastewater system are sized to maintain sufficient capacity during high use periods without backing up.
Affordability	The City prioritizes identifying and repairing areas where rain and groundwater can enter the wastewater system to keep rates low for customers.

Table 52: Wastewater – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Scope	Percentage of properties connected to the municipal wastewater system	94%	Maintain current
Quality & Reliability	The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	N/A (City of Cambridge eliminated all combined sewer systems in the 1970s)	N/A (City of Cambridge eliminated all combined sewer systems in the 1970s)
Quality & Reliability	The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system	10.5 to 40,763 properties	Maintain current
Quality & Reliability	The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	5 to 40,763 properties	0
Quality & Reliability	Percentage of replacement value of Wastewater assets rated "Very Poor"(or "Poor")	16.36%	16.63%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Wastewater assets	1.35%	1.35%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 53: Wastewater – Key Performance Indicators (KPI)

Asset	Key Service Attribute	Performance Measure	Current LOS
Wastewater	Quality & Reliability	Number of work orders relating to a public service request	72
Wastewater	Quality & Reliability	Percentage of infiltration and inflow of storm- or groundwater into sewage network (%)	15.2%
Wastewater Pipes	Quality & Reliability	Average age wastewater pipe (or average remaining life) Years	37
Wastewater Pipes	Quality & Reliability	Average PACP[7] structural condition	1 ("Very Good")
Wastewater Pipes	Quality & Reliability	Annual number of wastewater main backups / 100 km length of wastewater main	2.68 per 100 km
Wastewater Pipes	Quality & Reliability	Km of wastewater pipe renewal (lining, reconstruction) completed	3.13 km
Wastewater (Pump Stations)	Quality & Reliability	Average pump station major failures per year	8
Wastewater Services	Quality & Reliability	Average age service connection (years)	35
Wastewater Services	Quality & Reliability	Number of blocked service connections (/1000 service connections)	2.89

The maps cited in the LOS tables for the City are shown in Appendix O.

[7] PACP: Pipeline Assessment Certification Program (NASSCO)

D.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its wastewater assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 54: Wastewater Services – Lifecycle Activities

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Master Plans (Sanitary Sewer Servicing MP) and other strategic plans	All	5 years
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years
Operations and Maintenance		
Unplanned maintenance activities	All	As needed
Planned maintenance activities	All	Maintenance schedule by asset type
Formal wastewater pipe or lateral condition assessment using CCTV	Wastewater Pipes, Laterals	As per CCTV program. Prioritized based on age, condition, and consequence of failure of pipe.
Formal pump station condition assessments	Pump Stations	10 years
Safety Inspection	Pump Stations	Annually
Inspect and record	Pump Stations	Weekly
Bi-Annual Wetwell Cleaning	Pump Stations	Bi-Annual
Annual Generator inspection	Pump Stations	Annually

Description	Asset	Frequency
Sonar or Flow Monitoring	Wastewater Pipes, Forcemains	As per program
Inspection of access issue mainlines	Wastewater Pipes	As required
Combined maintenance hole investigation	Maintenance Holes	As required
Maintenance hole inspections	Maintenance Holes	Every 3 years, ongoing activity
Swabbing	Forcemains	Every 5 years
H2S Monitoring	Maintenance Holes	Ongoing
Maintenance hole component replacement and repairs	Maintenance Holes	As required
Lateral Blockage Clearing	Laterals	Emergency based / Daily
Lateral Relining	Laterals	Emergency based / Annual program
Inspections	Siphons	Bi-weekly
Valve Turning	Siphons	Bi-Annually (Spring & Fall)
Flushing	Siphons	Annually
Rehabilitation and Renewal		
Rehabilitation (lining) or replacement of wastewater system (pipes) assets based on annual needs assessment	Wastewater Pipes	As required
Renovation or replacement of pumping stations based on needs assessment	Pump Stations	As per Sanitary Master Plan

Description	Asset	Frequency
Growth & Service Enhancement		
Construction of new pump stations or upgrades to existing pump stations	Pump Stations	As required based on master plans and development plans; capacity model
Acquisition of new pump station equipment	Pump Stations	As required based on master plans
Construction of new pipes or upsizing to existing pipes	Wastewater Pipes	As required based on master plans and development plans; capacity model
Disposal		
Disposal activities related to replacement	All	As required

D.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

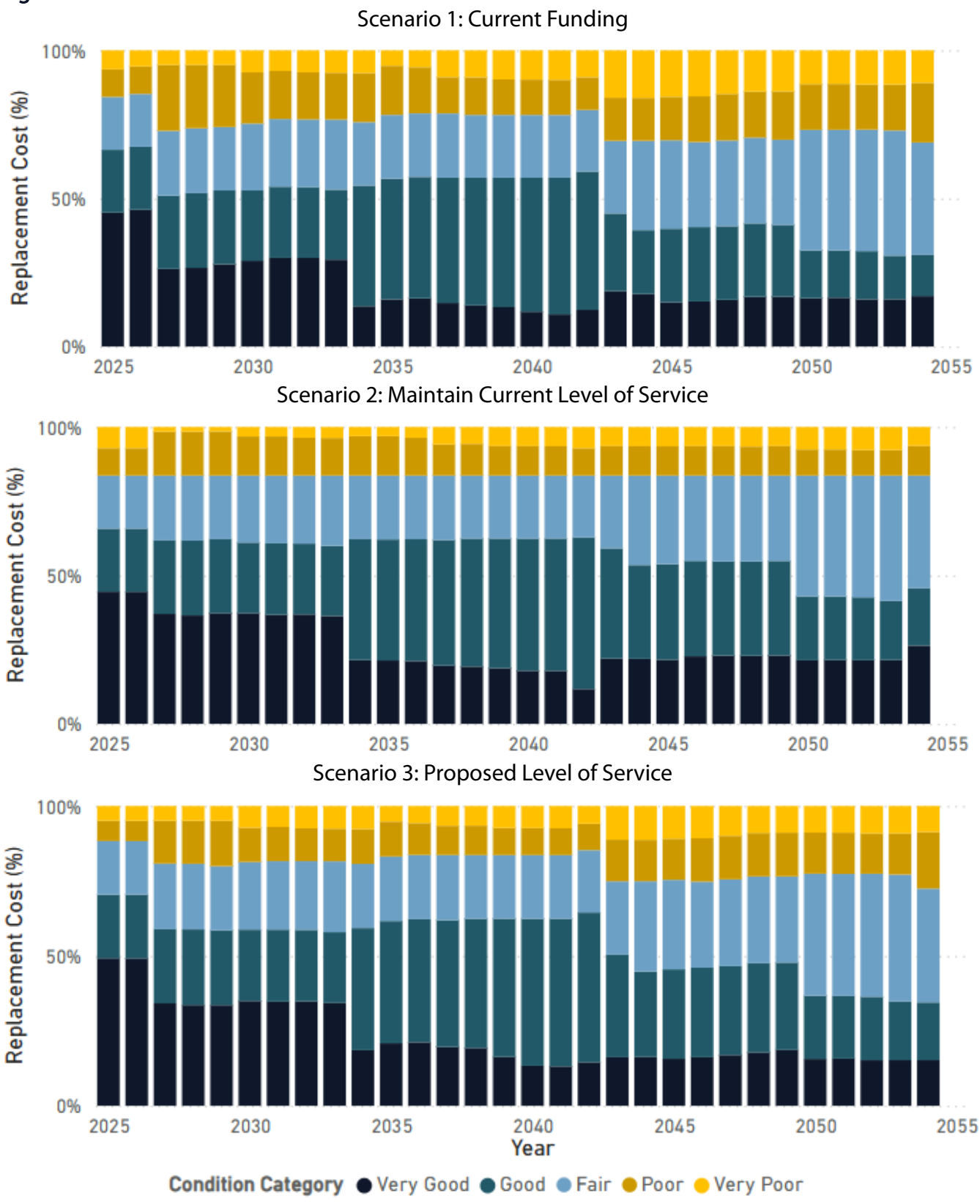
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 55. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 55: Wastewater – Condition Profiles for Service Level Scenarios



Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $9.6M. The condition distribution for the anticipated funding scenario is shown in Figure 55. Overall condition decreases in this scenario.

Under the current funding scenario, there is a clear trend of asset condition deterioration over time. In the early years (2025–2035), a significant portion of wastewater infrastructure remains in "Very Good" and "Good" condition. However, after 2035, these proportions begin to decline steadily, and by the 2040s, there is a noticeable increase in assets falling into the "Fair," "Poor," and even "Very Poor" categories. The overall condition profile becomes increasingly skewed toward lower condition ratings, indicating that the existing level of investment is not sufficient to maintain the health of the infrastructure. If this trend continues, it suggests that more assets will fall into critical condition, leading to higher long-term costs and greater service disruptions.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $14.7M for renewal, rehabilitation and replacement activities is needed to maintain performance for Wastewater assets with a capital funding gap of $5.1M. The performance forecast for scenario 2 is shown in Figure 55.

In this scenario, funding is adjusted to maintain the current level of service rather than the current budget. As a result, asset conditions remain more stable over time compared to Scenario 1. The proportion of infrastructure in "Very Good" and "Good" condition remains relatively high throughout the forecast period, although there is a slight increase in "Fair" and "Poor" conditions post-2040. Importantly, the proportion of assets in "Very Poor" condition remains minimal and controlled. This suggests that while there is some aging of infrastructure, the investment is adequate to maintain acceptable service levels and avoid widespread deterioration.

Scenario 3 – Proposed Level of Service

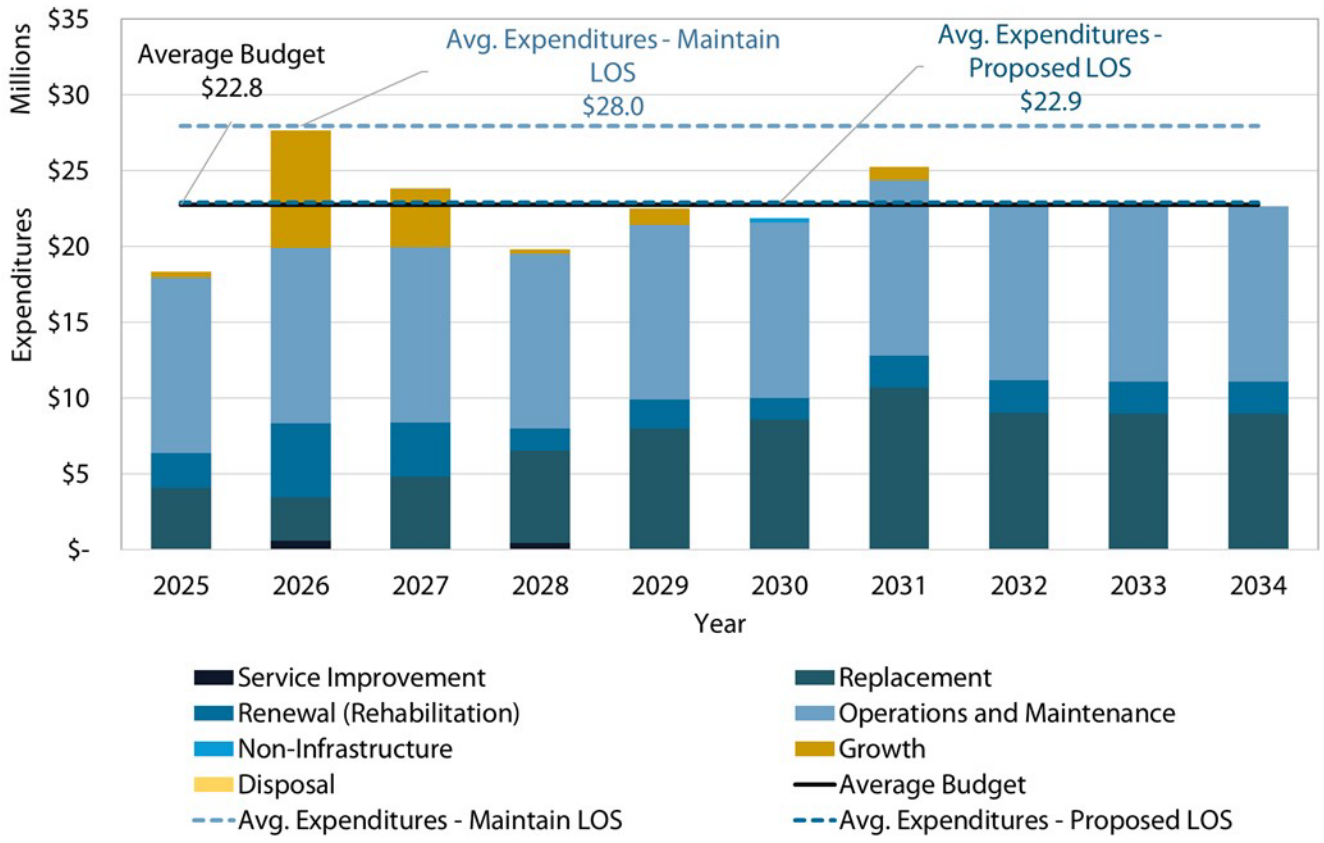
It was determined that an average annual budget of $9.6M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Wastewater Assets with no capital funding gap.

This scenario reflects the most proactive and well-funded approach, aiming to maintain the overall asset condition at current levels. As a result, the condition profile remains very stable from 2025 through 2055, with consistently high proportions of assets in "Very Good" and "Good" condition. Only a small portion of assets fall into "Fair" or worse condition categories, and these proportions do not increase significantly over time. This scenario demonstrates the benefits of sustained, preventative investment in infrastructure, resulting in minimized risk, lower long-term costs, and preserved service quality.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 56 and Table 55,

which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 56: Wastewater – Expenditure Scenario Comparison



The scenario comparison indicates that wastewater has no average annual infrastructure gap to achieve the proposed LOS.

The total funding gap is outlined in Table 55. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize wastewater maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 55 shows that maintaining the current level of service requires $14.7M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $5.1M. Achieving

the proposed level of service requires an average annual $9.6M for renewal, rehabilitation and replacement activities, with no capital funding gap.

An average annual O&M gap of $139K is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 55: Wastewater – Lifecycle Activity Investments & Average Annual Infrastructure Gap

Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$1,450,366	$1,450,366	$1,450,366
Non-Infrastructure	$30,000	$30,000	$30,000
Rehabilitation & Replacement	$9,617,052	$14,675,029	$9,617,052
Service Improvement	$112,700	$112,700	$112,700
Total Capital Expenditures	$11,210,118	$16,268,095	$11,210,118
Capital Infrastructure Gap		$5,057,978	No Gap[8]
Operations & Maintenance	$11,547,600	$11,686,617	$11,686,617
Operations & Maintenance Gap		$139,017	$139,017
Total Expenditures	$22,757,718	$27,954,713	$22,896,735
Total Funding Gap		**$5,196,995**	**$139,017**
Gap as Percentage of Replacement Value		**0.61%**	**0.02%**

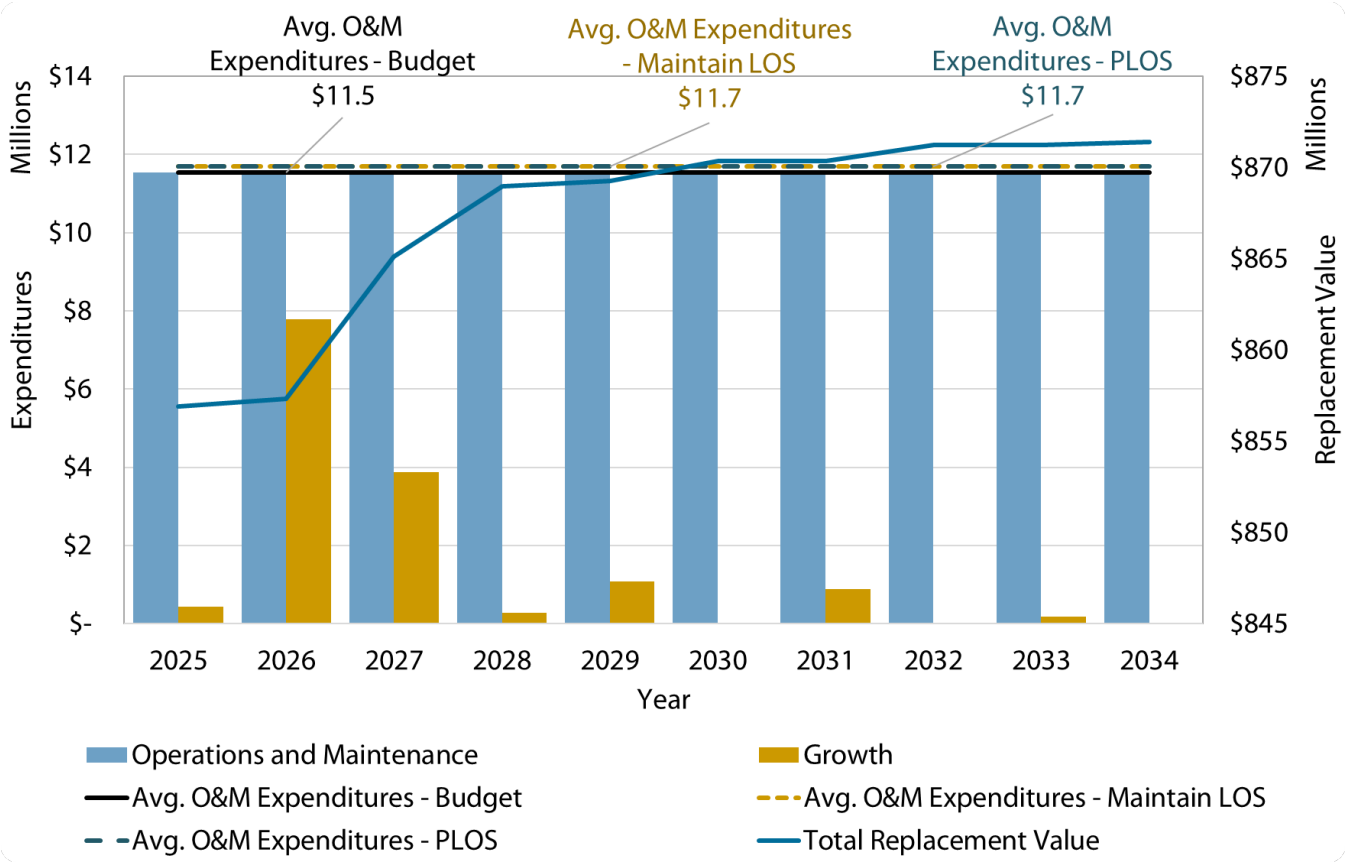
The growth and O&M expenditures shown in Figure 56 are shown in greater detail in Figure 57, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the

[8] "No Gap" indicates that capital and/or operating funding associated with the LOS scenario is achievable with the available budget

lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Wastewater assets, additional O&M were only required to accommodate growth, which accounts for $139K of the total annual average funding. This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

Figure 57: Wastewater – Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

D.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Wastewater assets are provided in Table 56.

Table 56: Wastewater – Data Confidence

Asset Class	Data Source	Data Confidence
Wastewater	GIS Database	High

Opportunities for improvement include:

Wastewater

- Maintain ongoing continuous improvement program to identify sources of Inflow and Infiltration (I&I) and timely remediation to reduce this flow into the system. reducing I&I, will reduce cost of sewage treatment, reduce potential overflow at sewage treatment plants and provide system capacity to support additional growth without adding/upgrading the system.

Appendix E

Emergency Services Asset Management Plan

E.1 Introduction

The City maintains a diverse portfolio of emergency services assets to enable a rapid and effective response to emergencies to keep our community safe. We have one asset class within emergency services designed to facilitate effective emergency response for fire related services.

Table 57: Emergency Services – Assets

Asset Class	Fire Protection
Asset Type	• Fire Halls • Fire Fleet • Specialized Tools and Equipment • Parking Lots

This collection of assets is critical to our City as it ensures that the City's emergency services have the assets they need to keep residents safe helps us to realize our vision of a safe and prepared city. Careful evaluation of investments in emergency service assets is crucial to sound decision-making, given the vital role of fire services in our community.

Given the intricacies of our asset base, it is important to distinguish between the City's services and the Region of Waterloo's services. The Region of Waterloo provides Police and Emergency Medical Services. As such, the assets that provide these services are not included as part of this AMP.

This appendix provides information regarding our approach to management of emergency service assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

E.1.1 Strategic Connections

The following strategic and master plans related to emergency services assets were considered while developing this AMP.

Table 58: Emergency Services – Strategic Connections

Document	Strategic Connection
Master Plans	Fire Master Plan completed in 2023 and presented in 2024, addressing response times, staffing, equipment needs, and future station locations.
Asset Management Plan Documents	Provides historical context and long-term planning for Fire asset management.
Annual Business Plan	Outlines operational priorities, performance targets, and resource allocation for the fire department.
Capital Investment Plan	Includes budget forecasts for fire station upgrades, new fire trucks, emergency response equipment, and facility maintenance.
Operating Budget & Forecast	Covers ongoing fire department operational costs, including salaries, training, maintenance, fuel, and day-to-day expenses to maintain service levels.
Climate Adaptation Plan	Ensures fire assets are resilient to climate-related risks such as extreme weather events.
Energy Conservation and Demand Management Plan	Guides efforts to reduce energy consumption in fire stations through energy-efficient lighting, HVAC systems, and alternative fuel vehicles.
Multi-Year Accessibility Plan	Ensures fire facilities and services comply with accessibility standards for staff and the public.
Region of Waterloo Strategic Plan	Fire assets contribute to regional goals for public safety, emergency preparedness, and community well-being.
Development Charges Background Study	Fire services expansion due to population growth may be funded through development charges for new stations, vehicles, and equipment.
Official Plan	Guides land-use decisions that impact fire station locations, response times, and infrastructure planning for emergency services.

E.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined in Table 59 below.

Table 59: Emergency Services – Key Considerations

Type	Considerations
 Climate Risk	• Increased risk for catastrophic weather events (storms, tornados, floodings, etc.)
 Climate Adaptation	• Increased emergency preparedness planning
 Climate Mitigation	• Reduce GHG emissions for Fire Halls and Fire Fleet, such as integration of Idle Reduction Technology on all heavy fleet vehicles
 Heritage Interest	• Fire Station #2
 Accessibility Interest	• Future renovations of Fire Halls or newly constructed Fire Halls to meet City's Facilities Accessible Design Standards (FADS), as required

E.2 State of Infrastructure

E.2.1 Overview

Emergency service assets are those that enable a rapid and effective response to medical and fire emergencies. Our emergency service assets are some of our most recognizable assets. It includes the fire halls, as well as the fire service's fleet and equipment.

Our emergency service assets are essential services to our community in order to protect our residents 24 hours a day. Given the importance of these assets, it is important to manage and maintain these assets to ensure a smooth municipal operation.

Table 60: Emergency Services – Overview

Replacement Value ('000s)	Condition	Asset Class
$88,790	Fair	One
Total replacement value of all assets within the emergency services asset class.	Weighted average condition rating of emergency services assets across all subclasses.	Distinct asset classes that we manage as a part of our municipal emergency services portfolio.

E.2.2 Asset Class

Table 61: Emergency Services – Asset Class Overview

Fire Protection
• 6 Fire Halls • 3 Storage and Training Facilities • 34 Fleet Vehicles • 1 Fuel Station • 5 Parking Lots • Specialized Tools & Equipment

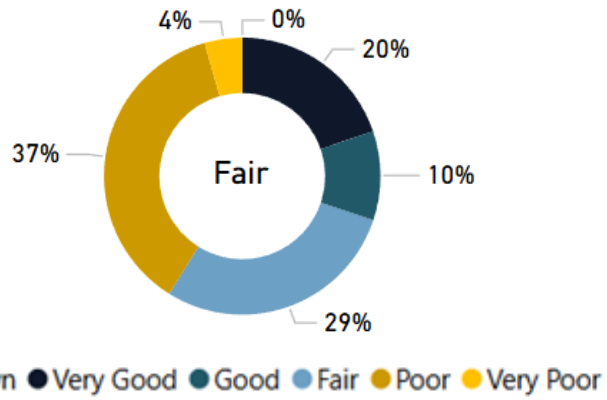


Figure 58: Emergency Services – Asset Class Condition Breakdown by Replacement Value

The current fire hall condition data does not include the ongoing building condition assessment project data and is subject to change based on the results of this assessment.

Fire Protection

Replacement Value ('000s)

$88,790

Weighted Avg. Condition Rating

Fair

Average Age

52 Years

Figure 59: Emergency Services – Fire Protection (% Replacement Value)

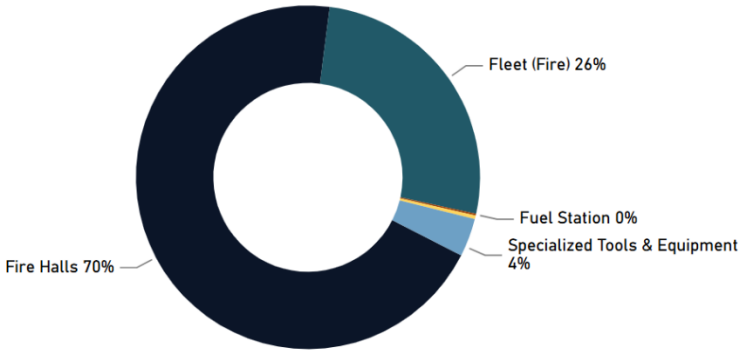
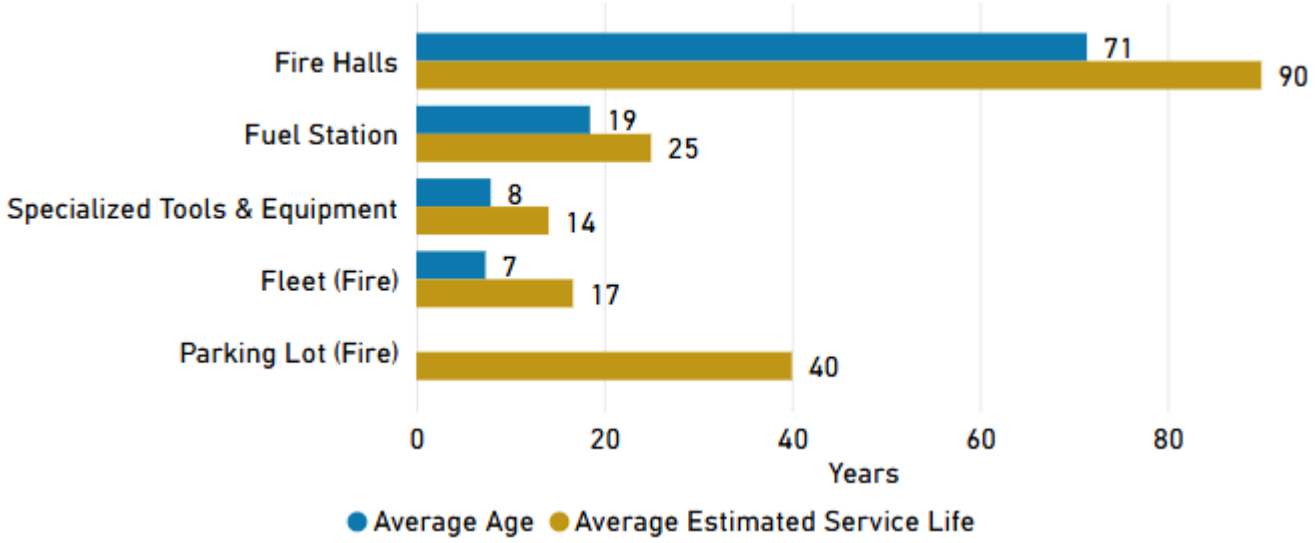


Figure 60: Emergency Services – Age and Estimated Service Life



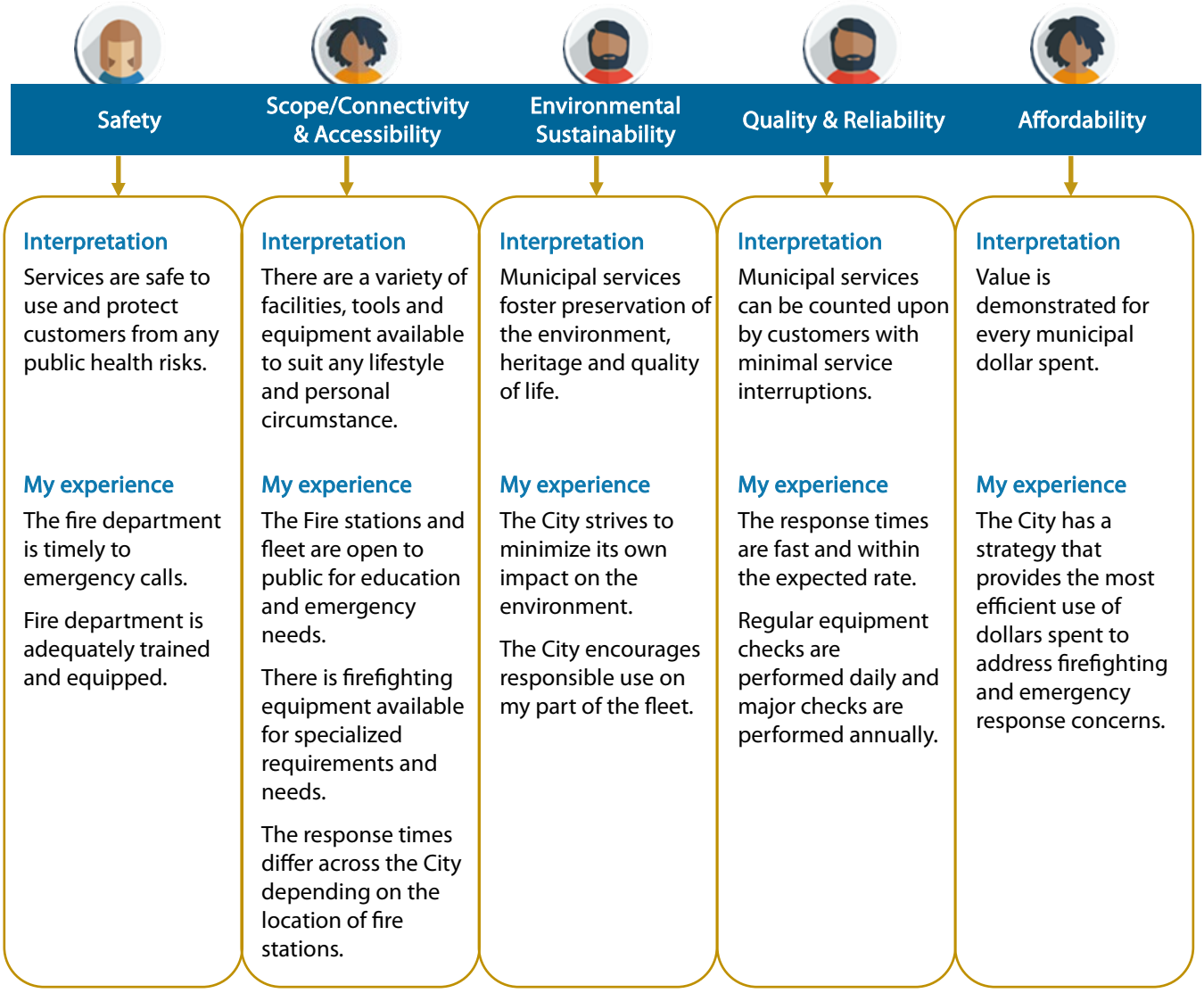
E.3 Levels of Service

E.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of emergency services assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our Fire Service Master Plan.

Figure 61: Emergency Services – LOS Framework



With the identification of stakeholder-informed emergency services priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

E.3.2 Current and Proposed Levels of Service

Under O.Reg. 588/17, emergency services assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 62.

Table 62: Emergency Services – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement value of Emergency Services assets rated "Very Poor"(or "Poor")	41.15%	40.31%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Emergency Services assets	35.47%	35.47%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 63: Emergency Services – Key Performance Indicators (KPI)

Key Service Attribute	Performance Measure	Current LOS
Scope / Connectivity & Accessibility	Incidents per crew responded annually	1720
Scope / Connectivity & Accessibility	Population Served Per Firefighter (Annual)	1135
Scope / Connectivity & Accessibility	Smoke Alarm Verifications/Highrise (Home Fire Safety Program)	Metric to begin in 2025
Scope / Connectivity & Accessibility	Percentage of Vulnerable Occupancies Inspected - Fire Drill (Annual)	100%
Quality & Reliability	Total response time in seconds, measured to 90th percentile	529
Quality & Reliability	Percentage of OFM Incident Reporting Compliance	100%
Quality & Reliability	Fire Prevention Complaint Response - Time between File Started and First Site Visit	Metric to begin in 2025
Safety	Skills Maintenance/Annual Proficiency Training per Firefighter (hrs)	187 hrs

Key Service Attribute	Performance Measure	Current LOS
Environmentally Sustainable	Annual natural gas consumption per square foot (m^3/sq.ft.)	1.72 m^3/sq.ft. (2023 data)
Environmentally Sustainable	Annual hydro consumption per square foot (kWh/sq.ft.)	8.90 kWh/sq.ft. (2023 data)

E.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its emergency services assets to maintain assets in a state of good repair and provide the appropriate levels of service. The lifecycle activities are listed in Table 64.

Table 64: Emergency Services – Lifecycle Activities

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Master Fire and Emergency Services Plan and other strategic plans	All	10 years. Future to move to operational plan.
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	As per maintenance schedule
Building condition assessments	Fire Stations	As per building condition assessment program
Seasonal condition inspections	Equipment and Apparatus	Per season
Daily inspections	Fire Fleet	Daily
Annual commercial vehicle safety inspections	Fleet	Semi-annual or Annual

Description	Asset	Frequency
Rehabilitation and Renewal		
Replacement of Fire fleet assets based on annual needs assessment	Fleet	As required
Renovation or replacement of Fire stations based on annual needs assessment	Fire Stations	As required
Replacement of Fire equipment and apparatus based on annual needs assessment	Fire Equipment and Apparatus	As required
Growth & Service Enhancement		
Construction of new fire stations or upgrades to existing fire stations	Fire stations	As required
Acquisition of new fire equipment and apparatus	Fire Equipment and Apparatus	As required
Acquisition of new additional Fire fleet items	Fleet	As required
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

E.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

Future iterations of the Asset Management Plan should consider broader external factors such as the political climate and associated risks, including changes in tariffs, taxation policies, and supply chain vulnerabilities. For example, certain critical assets—such as bunker gear and fire trucks—are not manufactured in Canada, making them susceptible to international trade fluctuations. These considerations should be regularly monitored and integrated into long-term planning and financial forecasting.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle

activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 62. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 62: Emergency Services – Condition Profiles for Service Level Scenarios

Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $1.6M. The condition distribution for the anticipated funding scenario is shown in Figure 62. Overall condition decreases in this scenario.

Under the current funding model, Emergency Services assets show a consistent and significant deterioration in condition over time. In 2025, a substantial portion of the assets are in "Good" and "Fair" condition, with smaller portions in "Poor" and "Very Poor." However, as time progresses, there is a steady and pronounced increase in the percentage of assets falling into the "Poor" and "Very Poor" categories. By 2040, these lower condition ratings dominate the profile, while "Very Good" and "Good" assets become minimal. This trend continues through 2055, indicating that the current level of funding is insufficient to sustain the condition of the assets, which may lead to increased failure risk and reduced reliability of emergency services.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $4.7M for renewal, rehabilitation and replacement activities is needed to maintain performance for Emergency Services Assets with a capital funding gap of $3.1M. The performance forecast for scenario 2 is shown in Figure 62.

This scenario provides a more balanced approach, aiming to keep the current service performance stable. The condition profile shows improvement compared to Scenario 1, with a healthier distribution of assets across condition categories. The proportion of assets in "Very Poor" condition remains relatively low throughout the forecast period, while "Good" and "Very Good" assets are better maintained. Notably, there is still some fluctuation, particularly post-2035, but the overall trend suggests that this funding level can control deterioration and maintain acceptable service levels without allowing significant degradation.

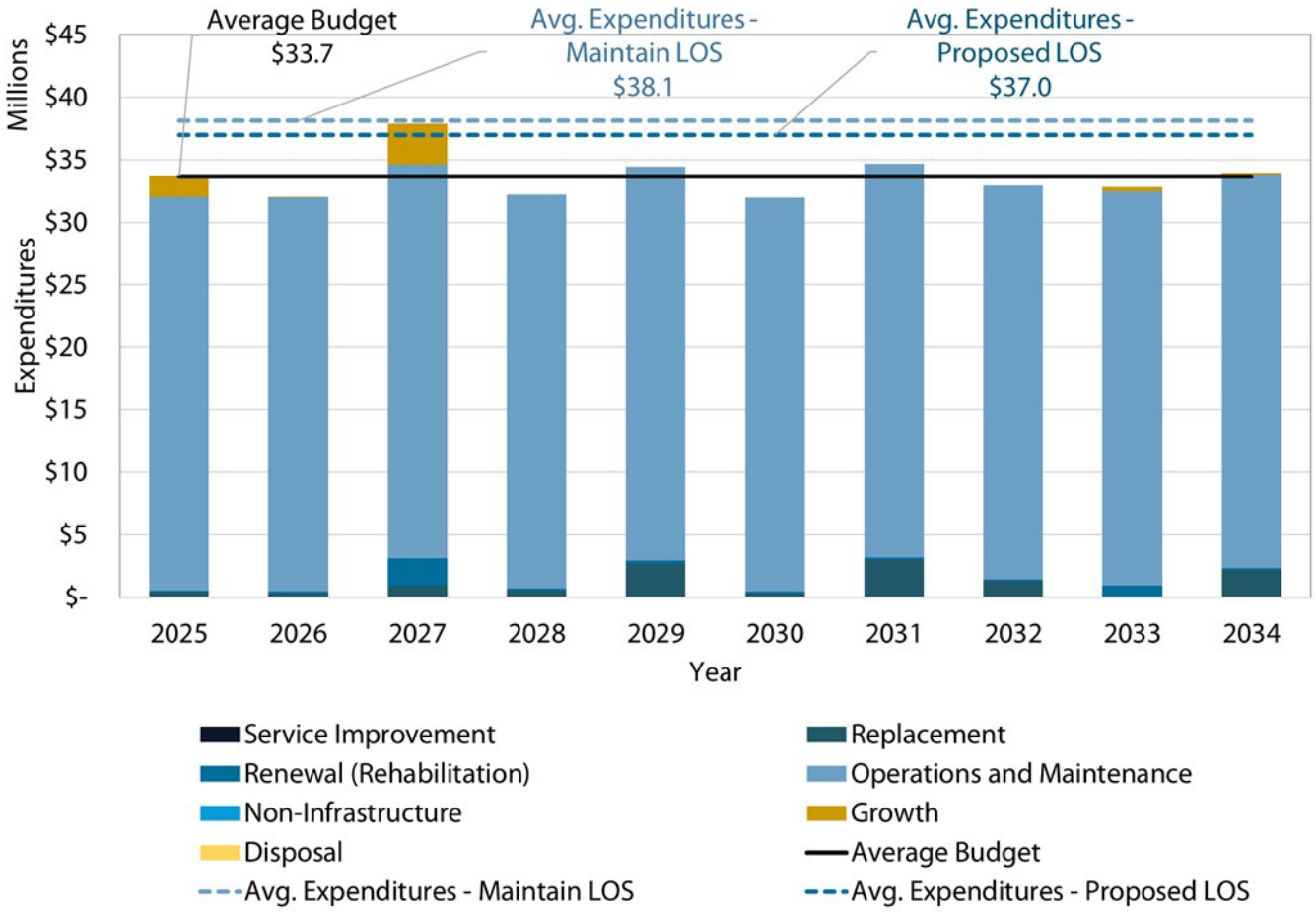
Scenario 3 – Proposed Level of Service

It was determined that an average annual budget of $3.1M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Emergency Services Assets with a total capital funding gap of $2.0M.

Under this scenario, the condition profile in this case initially worsens before gradually improving. From 2025 to around 2040, the proportion of assets in "Poor" and especially "Very Poor" condition increases significantly, while the shares of assets in "Good" and "Very Good" condition decline. However, beginning around 2040–2045, the condition profile shows a marked turnaround. The share of assets in "Very Poor" condition decreases sharply, and those in "Fair," "Good," and eventually "Very Good" condition start to increase. By 2055, the profile shows a healthier distribution with many assets in better condition categories, indicating that the proposed strategy is effective in the long term but allows for notable deterioration in the short to medium term.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 63 and Table 65, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 63: Emergency Services – Expenditure Scenario Comparison



The scenario comparison indicates that Emergency Services has an average annual total gap of $3.3M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $2.0M, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 65. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget

allocations, prioritize emergency services maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 65 shows that maintaining the current level of service requires $4.7M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $3.1M. Achieving the proposed level of service requires an average annual $3.1M for renewal, rehabilitation and replacement activities, as well as additional funding for growth to identify and purchase lands for station 2 and 3, that are currently unfunded. In total, the proposed LOS average annual capital gap is $2.0M.

An average annual O&M gap of $1.4M is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels. This operating funding gap will be addressed through future year's operating budgets aligned with the expansion and renovation of Fire Hall 4.

Table 65: Emergency Services – Lifecycle Activity Investments & Average Annual Infrastructure Gap

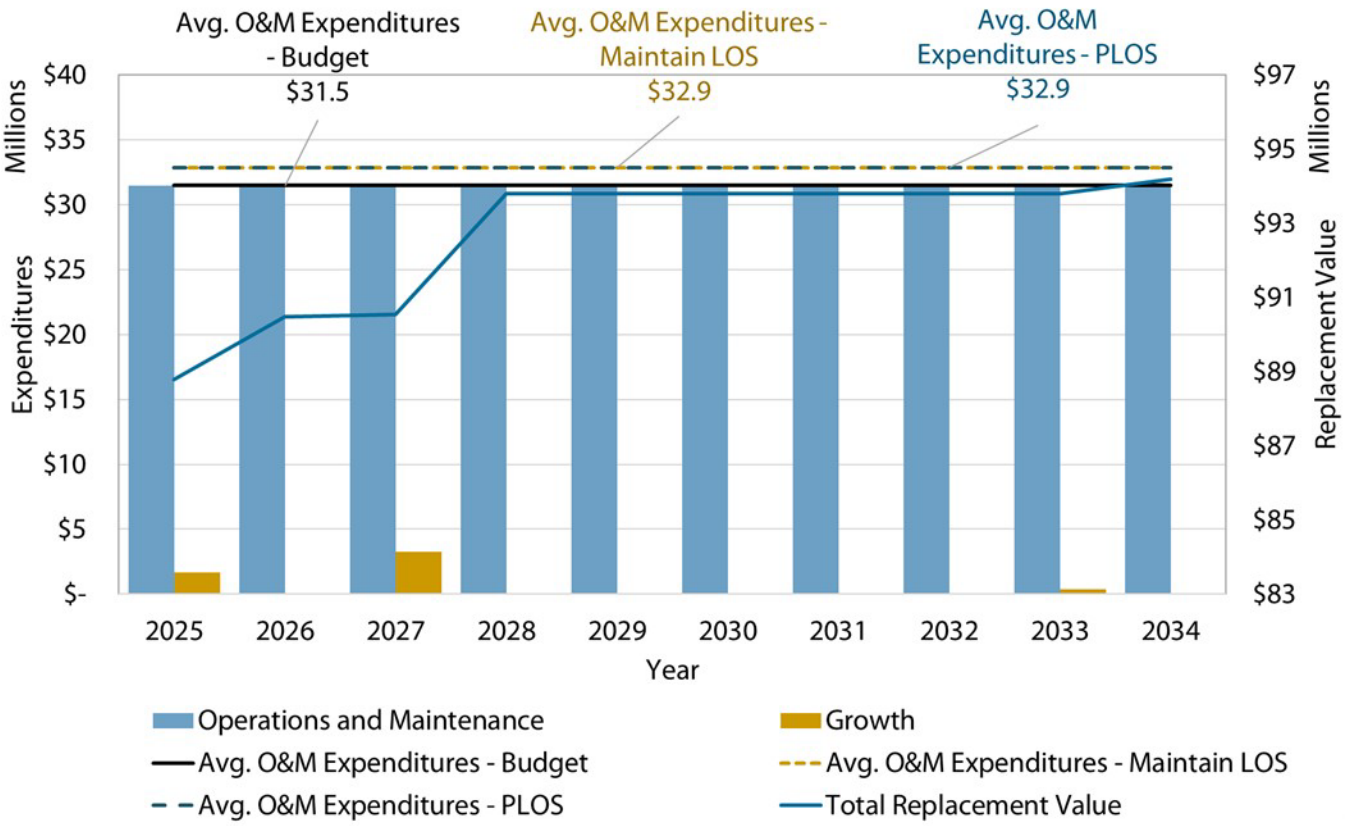
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$549,652	$549,652	$1,049,652
Non-Infrastructure	$0	$0	$0
Rehabilitation & Replacement	$1,612,614	$4,687,324	$3,065,785
Service Improvement	$0	$0	$0
Total Capital Expenditures	$2,162,266	$5,236,976	$4,115,437
Capital Infrastructure Gap		$3,074,710	$1,953,171
Operations & Maintenance	$31,489,300	$32,867,494	$32,867,494
Operations & Maintenance Gap		$1,378,194	$1,378,194
Total Expenditures	$33,651,566	$38,104,470	$36,982,931
Total Funding Gap		**$4,452,905**	**$3,331,366**
Gap as Percentage of Replacement Value		**5.02%**	**3.75%**

The growth and O&M expenditures shown in Figure 63 are shown in greater detail in Figure 64 which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Emergency Services assets, additional O&M were only required to accommodate growth, which accounts for $1.4M of the total annual average funding gap. This operating funding gap will be addressed through future year's operating budgets aligned with the expansion and renovation of Fire Hall 4.

This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

Figure 64: Emergency Services – Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

E.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Emergency Services assets are provided in Table 66.

Table 66: Emergency Services – Data Confidence

Asset Class	Data Source	Data Confidence
Fire Protection	Excel; Fire Software; Fleet List	Medium

Opportunities for improvement include:

Fire Protection

- Emergency services data would benefit from distinct values for key asset attributes such as Estimated Service Life and Replacement Value instead of the ranges currently available in the raw data.
- Confirmation of installation/construction dates and complete condition assessments at the asset level rather than the facility level would provide a more informative asset register and forecast.

Appendix F

Parks Asset Management Plan

F.1 Introduction

The City maintains a diverse portfolio of assets within the parks service area in four different asset classes that focus on providing the community with outdoor space for leisure activities including parks, sports fields, playgrounds, trees, natural areas, and cemetery space.

Table 67: Parks Assets

Asset Class	Cemeteries	Parks	Outdoor Recreation	Forestry & Horticulture
Asset Type	• Cemeteries • Cemetery Roads • Columbaria • Mausoleums, Chapels • Facilities (Cemeteries) • Parking (Cemeteries)	• Parks • Natural Areas • Facilities (Parks & Outdoor Recreation) • Park Structures • Monuments • Park Furniture • Park Lighting • Playgrounds • Splash Pads • Bike and Skateboard Parks • Fencing (Parks & Outdoor Recreation) • Parking Lots (Parks & Outdoor Recreation)	• Sports Fields & Courts • Sport Field Lighting	• Tree Gates • Trees • Horticulture Beds • Horticulture Planters • Facilities (Horticulture)

This collection of assets is critical to our City as it provides natural areas and green spaces where residents can enjoy nature and recreational activities. These assets help us to realize our goal of community well-being through the promotion of a caring community where people can make strong connections with others and lead safe, healthy, and productive lives. Like many of our assets,

park assets are facing increased challenges as a result of climate change, increased use and growing demand for park related services.

Our City faces unique challenges given the variety of assets that comprise the parks portfolio as they range from natural assets (e.g., trees) to hard assets (e.g., cemetery buildings), which provide very different services for the community. This unique portfolio of assets leads to complex decision-making around asset management investment; therefore, careful consideration is required for renewal while also considering the growing needs of our community.

This appendix provides information regarding our approach to the management of parks assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

F.1.1 Strategic Connections

The following strategic and master plans related to parks assets were considered while developing this AMP.

Table 68: Parks - Strategic Connections

Document	Strategic Connection
Master Plans	Parks Master Plan, Cemetery Master Plan
Asset Management Plan Documents	Provides long-term planning for the upkeep of parks, outdoor recreation facilities, forestry initiatives, and cemetery infrastructure.
Annual Business Plan	Outlines priorities for park maintenance, recreational programming, tree planting, cemetery services, and horticulture projects.
Proposed Capital Investment Plan	Allocates funding for park development, recreation facilities, sports fields, tree planting, cemetery infrastructure, and maintenance of natural assets.
Operating Budget & Forecast	Covers ongoing operational costs for park maintenance, tree planting, recreation services, and cemetery upkeep.
Climate Adaptation Plan	Ensures resilience in parks, natural areas, and cemeteries against extreme weather, erosion, flooding, and heat impacts.
Energy Conservation and Demand Management Plan	Promotes energy-efficient lighting in parks, splash pads, and cemeteries while integrating sustainable landscaping and irrigation systems.
Multi-Year Accessibility Plan	Ensures that parks, trails, playgrounds, and cemetery facilities meet accessibility standards, including barrier-free pathways and inclusive play areas.

Document	Strategic Connection
Cambridge Connected Strategic Plan	Aligns investments in parks, outdoor recreation, and cemeteries with city goals for sustainability, health, and community engagement.
Region of Waterloo Strategic Plan	Supports regional initiatives for parks, trails, green spaces, tree preservation, and cemetery management.
Development Charges Background Study	Identifies funding sources for new parks, trails, sports fields, horticultural sites, and cemetery expansions through development charges.
City of Cambridge Official Plan	Guides land use planning for parks, recreation, natural assets, and cemeteries to support sustainable growth and community well-being.
Growth Plan for the Greater Golden Horseshoe	Addresses the need for expanded green spaces, recreational facilities, tree canopy growth, and cemetery services as the population increases.

F.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 69: Parks - Key Considerations

Type	Considerations
 Climate Risk	• Rising temperatures (periods of extreme heat) • Severe storms; flash flooding • Periods of drought • Changing eco systems (plants, animals)
 Climate Adaptation	• Provide more shade structures or trees • Irrigation of sport fields • Increase city tree canopy • Approved list of landscape species adapted to climate change
 Climate Mitigation	• Increase city tree canopy • LED sport fields lighting • Reduce GHG emissions of buildings
 Heritage Interest	• Several heritage buildings / structures (incl. Mountview cemetery chapel and mausoleum) • Several heritage park structures (incl. Dickson park grandstand and horse barns, St Andrews park pioneer pergola, Oak tree Sculpture garden, Queens Square cenotaph and fountain, Riverside Park gate and wall)
 Accessibility Interest	• Designs for new and renewal & replacement of open spaces, playgrounds, outdoor spaces and parks, cemetery and horticulture buildings to incorporate recently approved Facility Accessibility Design Standards (FADS)

F.2 State of Infrastructure

F.2.1 Overview

Parks assets provide natural areas and green spaces for residents to enjoy nature and outdoor activities. Our parks assets support the City's ability to provide outdoor enjoyment to our residents and guests that visit Cambridge by providing areas for outdoor play, and greenspace for trees and plants to flourish to better the environment. Focusing on these assets enables the City to celebrate its natural beauty and positively contribute to the City meeting the service needs of its residents. Map with locations of the City's heritage assets, natural areas and an overview of the City's parks, cemeteries, and outdoor recreation, can be found in Appendix O.

Table 70: Parks Overview

Replacement Value ('000s)	Condition	Asset Class
$259,278	Good	Four
Total replacement value of all assets within the parks asset class.	Weighted average condition rating of parks assets across all subclasses.	Distinct asset classes that we manage as a part of our municipal parks portfolio.

F.2.2 Asset Class

Table 71: Parks Asset Class Overview – Parks and Forestry & Horticulture

Parks	Forestry & Horticulture
• 232 Parks	• 3 Greenhouses
• 697 Ha Natural Areas	• 61,659 Trees
• 2.6 km Park Roads	• 296 Flower Beds and Planters
• 48 Park Facilities	
• 63 Parking Lots	
• 76 Playgrounds	
• 11 Splash Pads	
• 1 Bike Park	
• 4 Skateboard Parks	

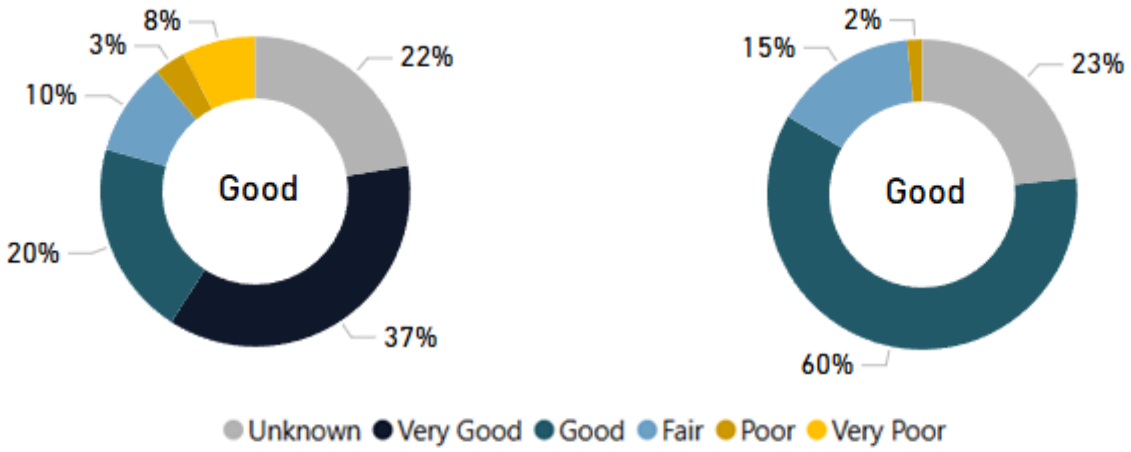


Figure 65: Parks - Asset Class Condition Breakdown by Replacement Value - Parks and Forestry & Horticulture

Table 72: Parks Asset Class Overview – Outdoor Recreation & Cemeteries

Outdoor Recreation	Cemeteries
• 35 Baseball Diamonds • 27 Soccer Fields • 20 Tennis Courts • 11 Basketball Courts • 11 Volleyball • 2 Multi-use Courts • 2 Disc Golf • 1 Rugby Field	• 9 Cemeteries • 17 Columbaria • 9 km Cemetery Roads

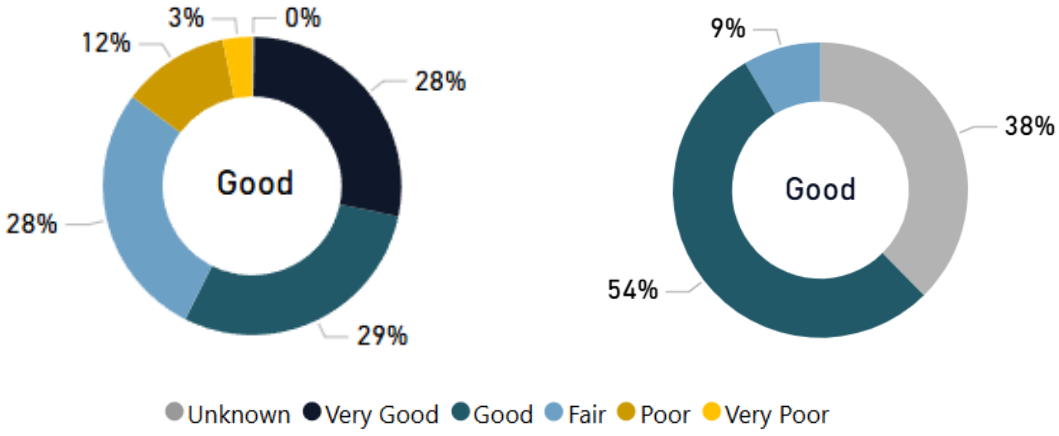


Figure 66: Parks - Asset Class Condition Breakdown by Replacement Value - Outdoor Recreation & Cemeteries

Parks

Replacement Value ('000s)

$49,961

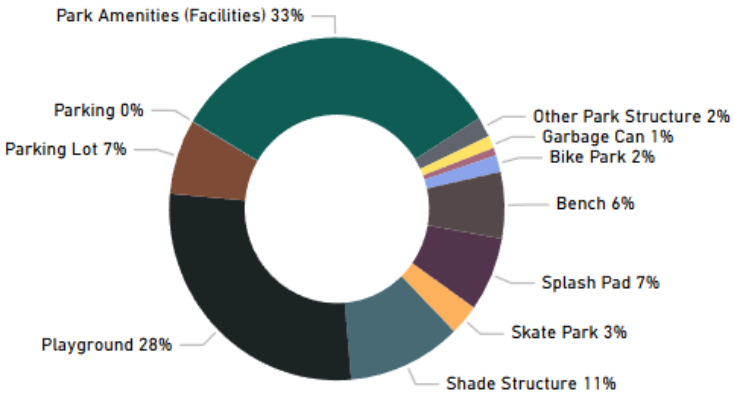
Weighted Avg. Condition Rating

Good

Average Age

79 Years

Figure 67: Parks – Parks (% Replacement Value)



Forestry & Horticulture

Replacement Value ('000s)

$157,404

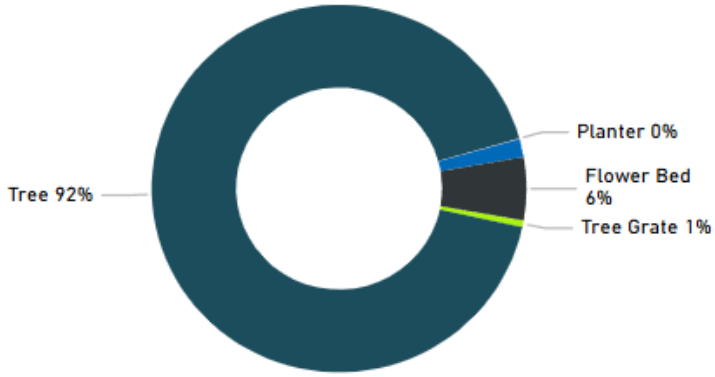
Weighted Avg. Condition Rating

Good

Average Age

17 Years

Figure 68: Parks – Forestry & Horticulture (% Replacement Value)



Outdoor Recreation

Replacement Value ('000s)

$37,712

Weighted Avg. Condition Rating

Good

Average Age

N/A

Figure 69: Parks – Outdoor Recreation (% Replacement Value)

Cemeteries

Replacement Value ('000s)

$14,200

Weighted Avg. Condition Rating

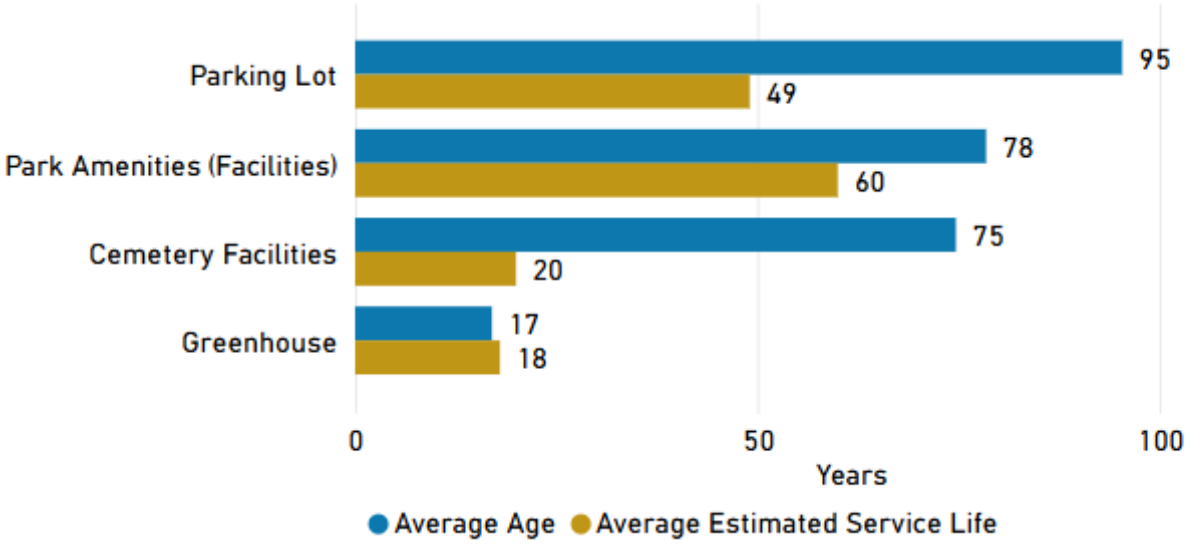
Good

Average Age

75 Years

Figure 70: Parks – Cemeteries (% Replacement Value)

Figure 71: Parks – Age and Estimated Service Life



Most park assets have unknown ages, thus the average age and estimated service life represented in Figure 71 represent the facilities and parking lots for which age information is known.

F.3 Levels of Service

F.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of parks assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our parks, forestry, horticulture, and cemetery master plans.

Figure 72: Cemeteries LOS Framework

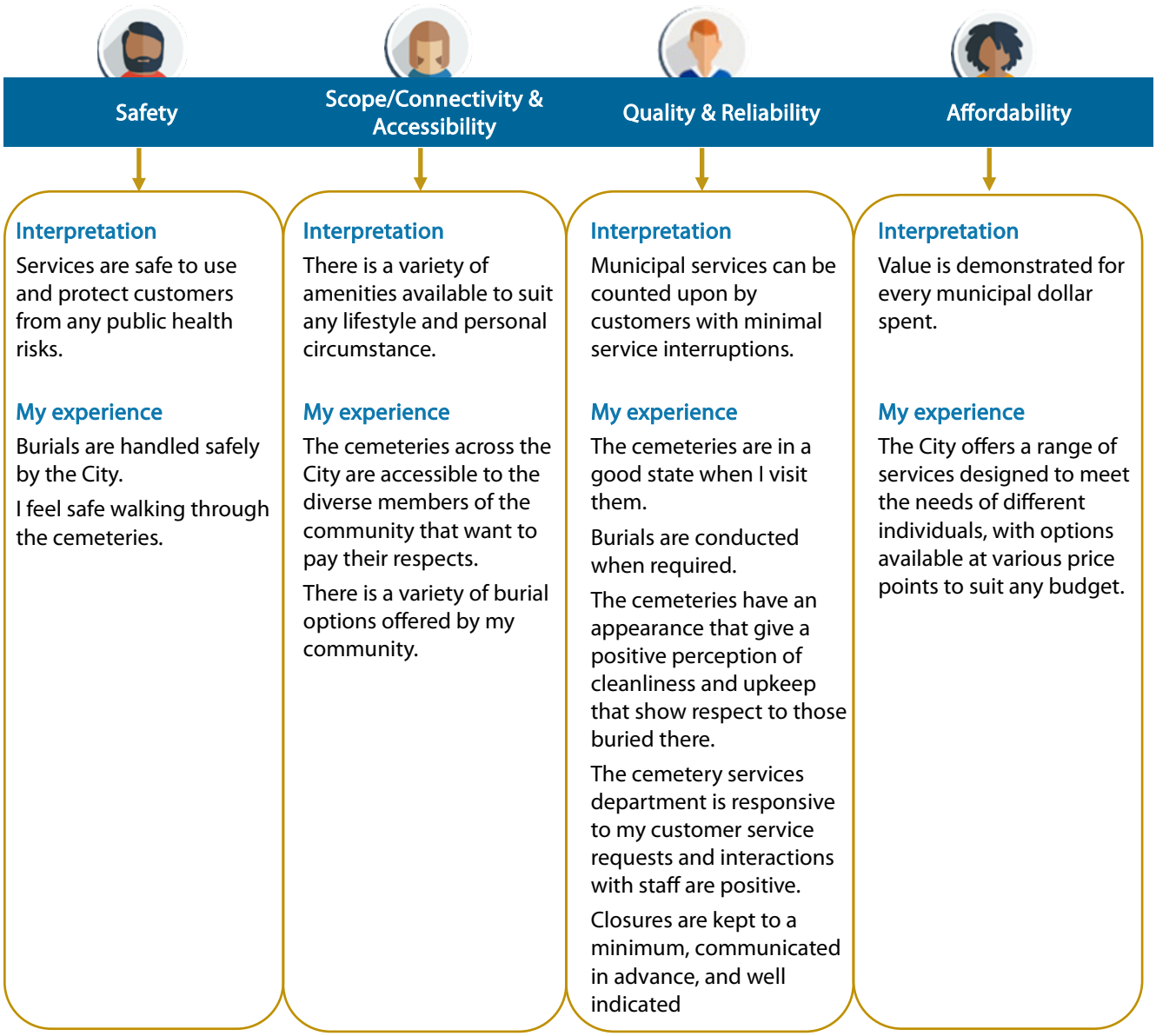


Figure 73: Parks/Outdoor Recreation LOS Framework

Safety

Interpretation

Services are safe to use and protect customers from any public health risks.

My experience

The parks and outdoor recreation sites across the City are safe to use.

I feel safe walking through parks and using the outdoor recreation sites during their open hours.

Scope/Connectivity & Accessibility

Interpretation

There is a variety of amenities available to suit any lifestyle and personal circumstance.

My experience

The parks across the City are accessible to the diverse members of the community.

There is a variety of things to do in the parks around my neighbourhood.

The parks and recreation facilities across the City are not overcrowded and generally available when I want to use them.

My sports team's access to recreation facilities is well organized by the City.

Environmental Sustainability

Interpretation

Municipal services foster preservation of the environment, heritage and quality of life.

My experience

The City strives to minimize its own impact on the environment in managing the park and outdoor recreation spaces.

Properties are maintained and managed in a sustainable and environmentally friendly way.

The City makes it easy for me to help keep parks across the City clean.

The City recognizes and manages its natural assets as a key element of the City's green infrastructure.

Quality & Reliability

Interpretation

Municipal services can be counted upon by customers with minimal service interruptions.

My experience

Closures are kept to a minimum, communicated in advance, and well indicated.

Parks and outdoor recreation sites are usually open when I want to use them.

Equipment and fixtures are there and in a good state when it is my turn to use them.

The parks and outdoor recreation departments are responsive to my and my sports team's customer service requests and interactions with staff are positive.

The parks have an appearance that give a positive perception of cleanliness and upkeep that draws people in to make respectful (i.e. no vandalism) use of them.

Affordability

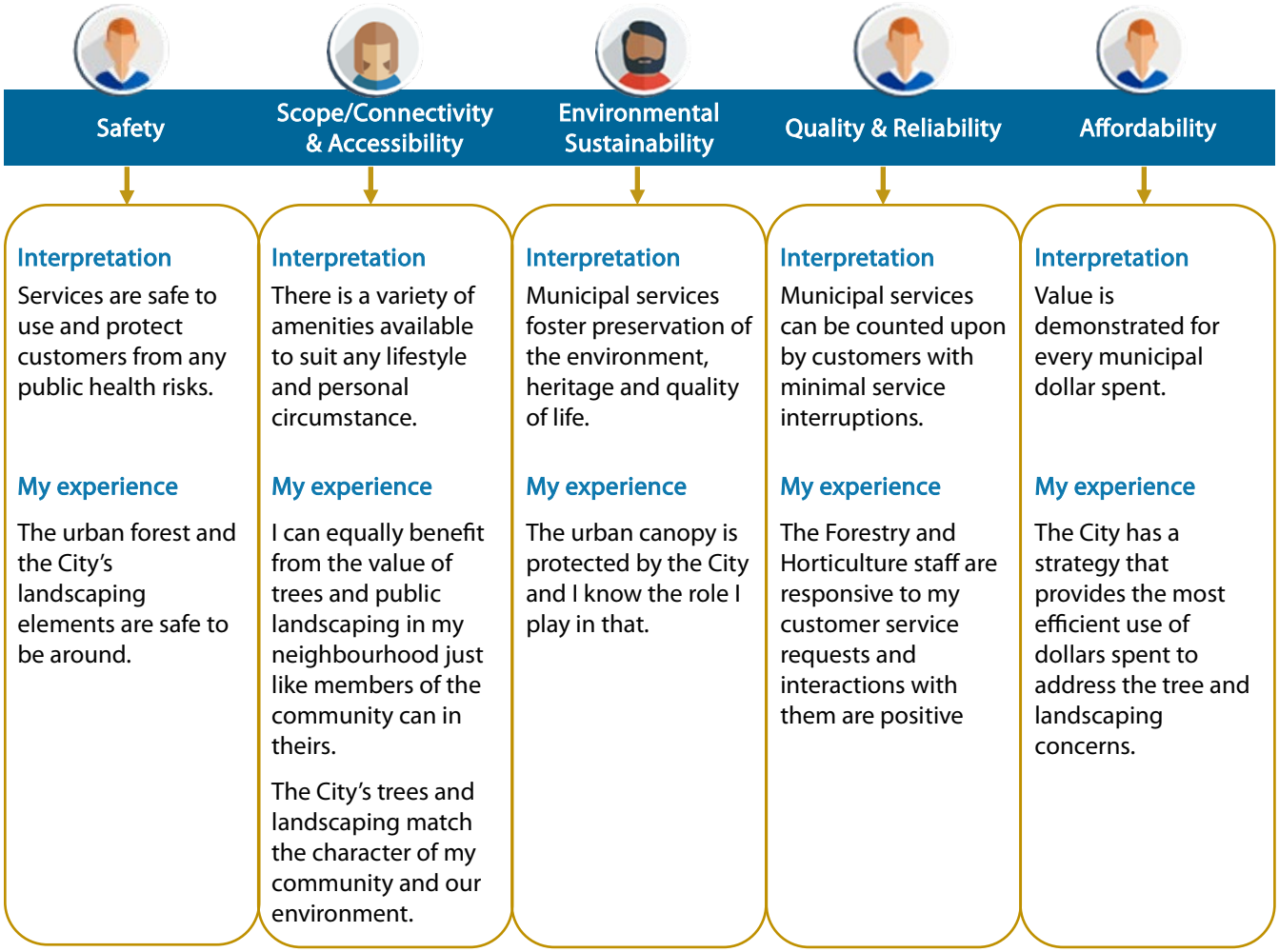
Interpretation

Value is demonstrated for every municipal dollar spent.

My experience

The City has a strategy that provides the most efficient use of dollars spent to address parks and outdoor recreation concerns.

Figure 74: Forestry and Horticulture LOS Framework



With the identification of stakeholder-informed parks priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

F.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, parks assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 73.

Table 73: Parks – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement value of Parks assets rated "Very Poor"(or "Poor")	5.20%	15.4%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Parks assets	5.26%	5.26%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 74: Parks – Key Performance Indicators (KPI)

Asset	Key Service Attribute	Performance Measure	Current LOS
Cemeteries	Quality & Reliability	Number of completed customer requests per year	~1000
Cemeteries	Scope / Connectivity & Accessibility	Cemetery Provision – Total Area	0.34 ha per 1000 residents
Parks	Scope / Connectivity & Accessibility	Percentage of residential properties within 800m (10 min walk) distance to parks (City, Community, Neighbourhood, POPS, Urban Square)	90%
Parks	Scope / Connectivity & Accessibility	Park Land Provision	1.10 ha per 1000 residents
Parks	Scope / Connectivity & Accessibility	Recreation Land Provision	0.44 ha per 1000 residents
Parks	Scope / Connectivity & Accessibility	Natural Areas Provision	4.47 ha per 1000 residents
Parks	Scope / Connectivity & Accessibility	Leash free dog parks	0.01 ha per 1000 residents
Parks	Scope / Connectivity & Accessibility	Washrooms	0.13 per 1000 residents
Outdoor Recreation	Scope / Connectivity & Accessibility	Playgrounds (per 1000 residents)	0.48 per 1000 residents

Asset	Key Service Attribute	Performance Measure	Current LOS
Outdoor Recreation	Scope / Connectivity & Accessibility	Splashpads (per 1000 residents)	0.07 per 1000 residents
Outdoor Recreation	Scope / Connectivity & Accessibility	Outdoor Sports Courts (Tennis/Pickleball/Basketball) per 1000 residents	0.21 per 1000 residents
Outdoor Recreation	Scope / Connectivity & Accessibility	Outdoor Sports Fields (Soccer, Baseball, Cricket, Rugby) per 1000 residents	0.4 per 1000 residents
Forestry and horticulture	Scope / Connectivity & Accessibility	Number of street trees per 1000 residents	332 per 1000 residents
Forestry and horticulture	Scope / Connectivity & Accessibility	Area of planted flower beds per 1000 residents (m^2)	72 m^2
Forestry and horticulture	Environmentally Sustainable	% of total canopy coverage	27%

F.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its parks assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 75: Lifecycle Activities - Parks

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Master Parks Plan and Parkland Strategic plan	All	5 years
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years

Description	Asset	Frequency
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	As per maintenance schedule
Building condition assessments	All	As required/ recommend 5 years
Formal condition assessments	park structures, sport field lighting, monuments, playgrounds, splash pads, bike and skate parks	Recommended to be done on a 2-5 year cycle
Regular safety inspections	Playgrounds, Splashpads, Sports fields, Bike and skate parks	As per requirements/procedures
Informal condition assessments / inspections	Parking, Cemeteries, Forestry and Horticulture	As required
Monument safety inspections to comply with legislated requirements to keep cemetery grounds safe of leaning/hazardous monuments	Monuments	Annually
Rehabilitation and Renewal		
Reconstruction or rehabilitation of parks and cemetery roads and pathways	Internal roads and pathways	As required
Rehabilitation or replacement of parks, buildings, structures and amenities	All	As required
Growth & Service Enhancement		
Construction of additional new parks, buildings, structures and amenities or upgrades	All	Based on master plan and planning process
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

F.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities are that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

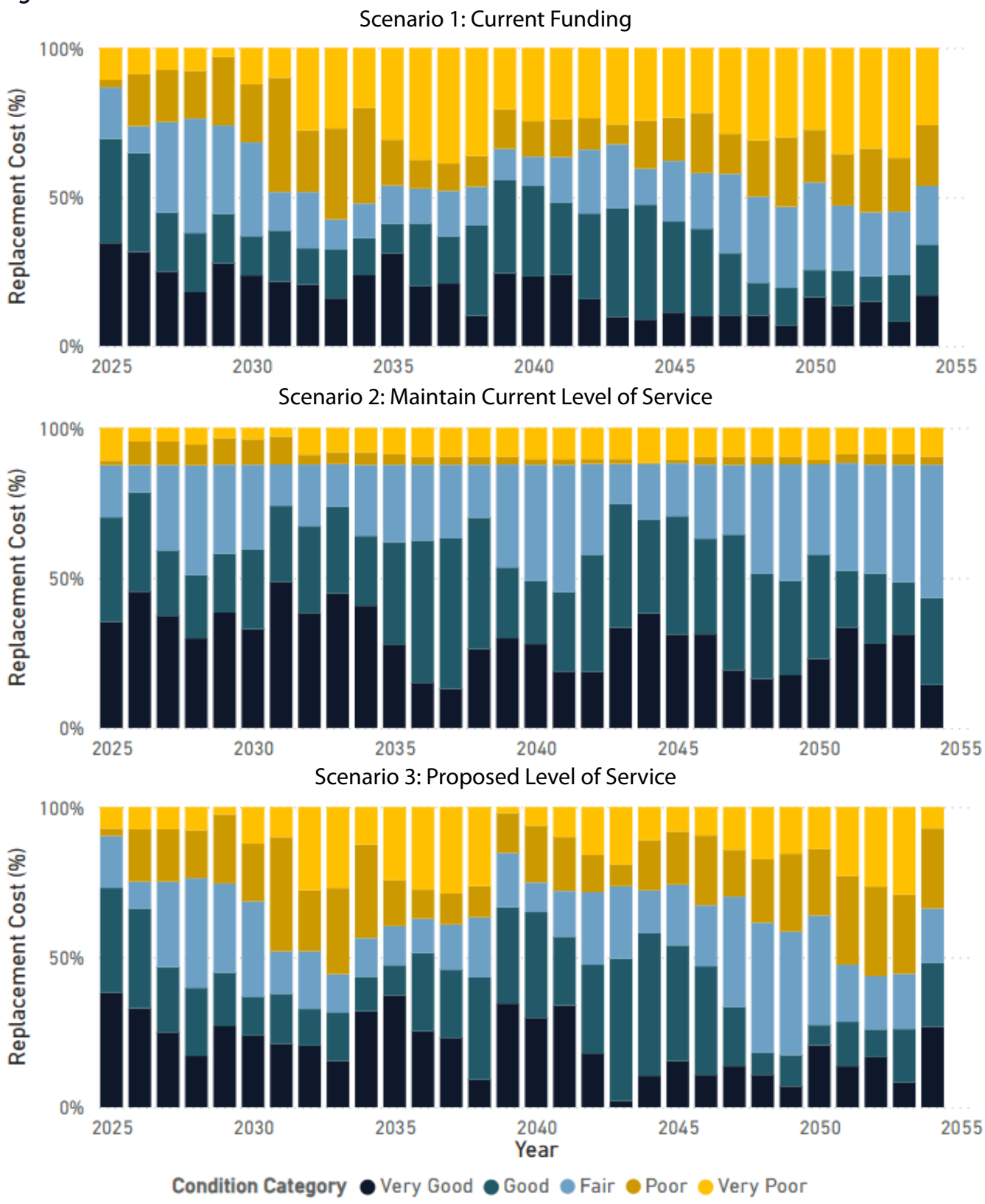
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 75. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 75: Parks - Condition Profiles for Service Level Scenarios



Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $1.8M. The condition distribution for the anticipated funding scenario is shown in Figure 75. Overall condition decreases in this scenario.

Under current funding levels, Park assets experience a gradual but persistent decline in condition over the 30-year period. In the early years (2025–2030), a reasonable proportion of assets are in "Very Good," "Good," and "Fair" condition. However, by the mid-2030s, the proportion of assets in "Poor" and "Very Poor" condition begins to increase significantly. By 2040, "Very Poor" assets make up a substantial share, with the condition profile continuing to worsen through to 2055. The reduction in assets in "Good" and especially "Very Good" condition illustrates that current investment is insufficient to offset asset aging and deterioration, and this could lead to a notable decline in the quality and usability of park assets.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $5.4M for renewal, rehabilitation and replacement activities is needed to maintain performance for Parks Assets with a capital funding gap of $3.6M. The performance forecast for scenario 2 is shown in Figure 75.

This scenario shows a more stable condition profile compared to Scenario 1, suggesting that the funding level is more aligned with sustaining existing service performance. From 2025 through 2055, a large portion of assets remains in the "Very Good," "Good," and "Fair" condition categories, with only modest increases in "Poor" and "Very Poor" categories. While there are some fluctuations—particularly between 2035 and 2045—the profile overall maintains a relatively balanced state. This indicates that the funding in this scenario is effective in controlling long-term deterioration and helps avoid large-scale infrastructure decline while keeping park assets largely functional and reliable.

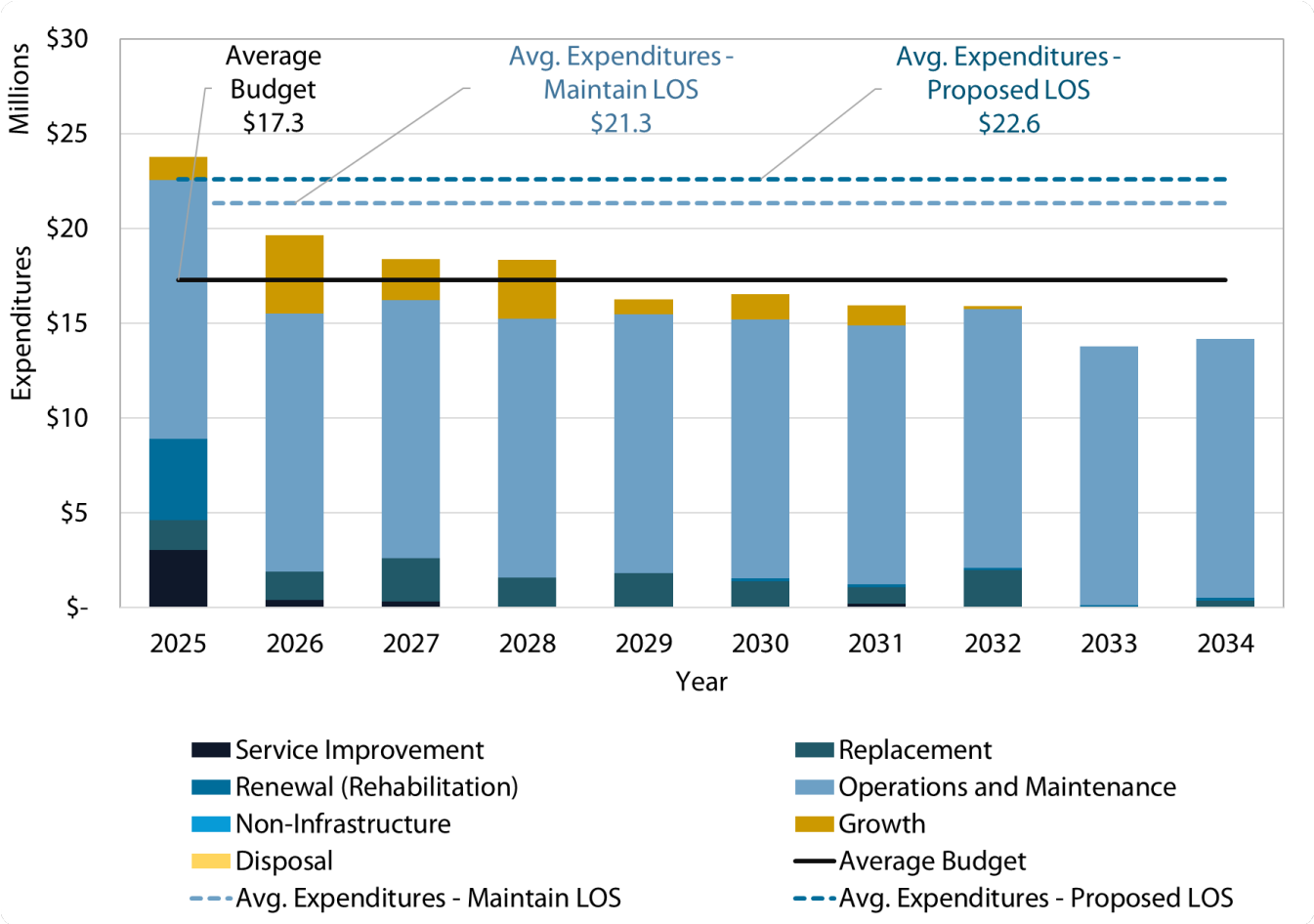
Scenario 3 – Proposed Level of Service

It was determined that an average annual budget of $3.9M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Parks Assets with a capital funding gap of 4.8M. The proposed LOS funding gap for Parks includes growth and service improvement projects identified in the recent Parks Master Plan that are currently unfunded. Unfunded items include land acquisition and new amenities. These items contribute $1.04M to the infrastructure gap for service improvements, and $1.74 for growth.

The proposed level of service scenario presents a more dynamic picture. In the early years (2025–2035), there is a notable worsening of asset condition, with a rapid increase in "Fair," "Poor," and especially "Very Poor" assets. However, after approximately 2040, the trend reverses. There is a strong rebound, with increasing shares of assets returning to "Good" and "Very Good" condition, and a clear decline in "Very Poor" assets. By 2055, the condition profile looks significantly healthier than at the beginning, suggesting the proposed funding level is structured to produce long-term improvement, even if it permits short-term deterioration.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 76 and Table 76, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 76: Parks - Expenditure Scenario Comparison



The scenario comparison indicates that Parks has an average annual total gap of $5.3M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $4.8M, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 76. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget

allocations, prioritize parks maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 76 shows that maintaining the current level of service requires $5.4M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $3.6M. Achieving the proposed level of service requires an average annual $3.9M for renewal, rehabilitation and replacement activities, as well as additional funding for growth and service improvements, that are currently unfunded. In total, the proposed LOS average annual capital gap is $4.8M.

An average annual O&M gap of $474K is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 76: Parks - Lifecycle Activity Investments & Average Annual Infrastructure Gap

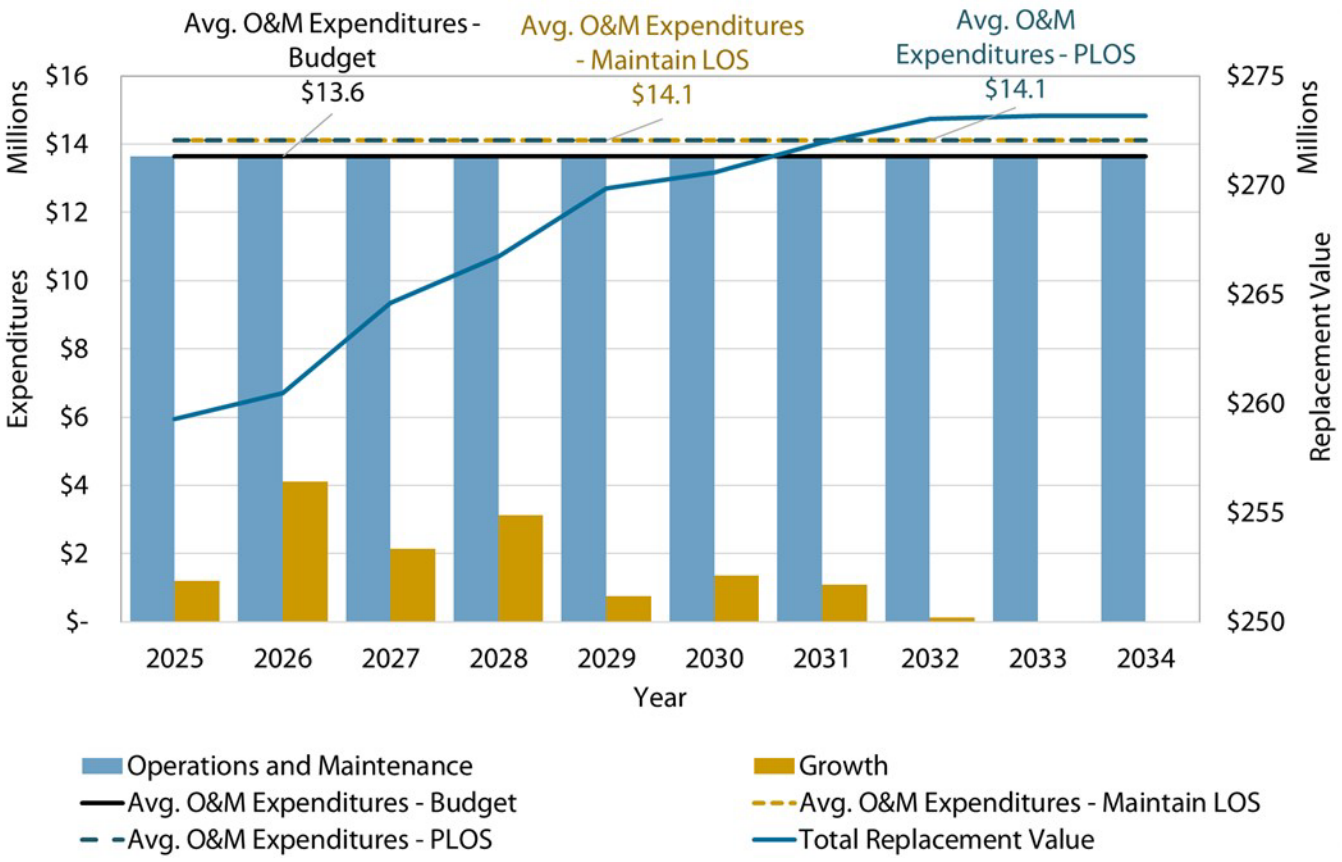
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$1,389,140	$1,389,140	$3,130,470
Non-Infrastructure	$0	$0	$0
Rehabilitation & Replacement	$1,833,681	$5,438,181	$3,898,967
Service Improvement	$395,700	$395,700	$1,438,400
Total Capital Expenditures	$3,618,521	$7,223,021	$8,467,837
Capital Infrastructure Gap		$3,604,501	$4,849,316
Operations & Maintenance	$13,647,950	$14,122,042	$14,122,042
Operations & Maintenance Gap		$474,092	$474,092
Total Expenditures	$17,266,471	$21,345,063	$22,589,879
Total Funding Gap		**$4,078,593**	**$5,323,409**
Gap as Percentage of Replacement Value		**1.57%**	**2.05%**

The growth and O&M expenditures shown in Figure 76 are shown in greater detail in Figure 77 which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be

required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Parks assets, additional O&M were only required to accommodate growth, which accounts for $474K of the total annual average funding gap. This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

Figure 77: Parks- Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to

infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

F.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Parks assets are provided in Table 77.

Table 77: Parks – Data Confidence

Asset Class	Data Source	Data Confidence
Parks	GIS Database	Medium
Forestry & Horticulture	GIS Database	Low
Outdoor Recreation	GIS Database	Medium
Cemeteries	GIS Database	Low

Opportunities for improvement include:

Parks

- Many secondary Park assets such as benches, monuments, and trash cans were missing key attributes to complete the register. Collecting or estimating installation dates or condition ratings for these assets will provide a better and more accurate condition profile and forecast.

Forestry & Horticulture

- Forestry & Horticulture assets were largely missing key attributes related to asset condition. While Urban Street Trees had been subject to inspection to assess tree health, Park trees lacked adequate inspection data to correctly determine asset condition. Items such as hanging baskets, planters and flower beds should be pooled based on their installation or construction year with a set schedule for replacement or upgrades.

Outdoor Recreation

- Outdoor Recreation assets would benefit from a review of their replacement values or implementation of standard per-asset cost estimates for different asset types.

Cemeteries

- Cemetery roads should have a formal needs study conducted to properly assess the condition of the assets and to identify any required works.

- A condition assessment of major cemetery structures such as the Columbaria is also recommended to ensure that the assets are in a state of good repair.

Appendix G

Recreation & Culture Asset Management Plan

G.1 Introduction

The City maintains recreation & culture assets as part of its wider portfolio to benefit the wider Cambridge community by providing dedicated space for learning, recreation and sport through arts, programming and leisure areas.

Table 78: Recreation & Culture Assets

Asset Class	Indoor Recreation & Culture
Asset Type	• Arenas • Pools (Indoor and Outdoor) • Community Centres/ Older Adult Centres • Arts/ Theatres • Museums • Recreational Parking Lots

The recreation & culture collection of assets is critical to our City as it provides fundamental access to resources and recreation for residents of all income levels in the community. More specifically, museums, arts, theatres and community centres provide opportunity for the community's heritage and culture to evolve; and arenas and pools offer a location for residents to partake in physical activity.

Each of these assets helps us to realize our goal of community well-being through promotion of a caring community where people can make strong connections with others and lead safe, healthy and productive lives. Our investment in these assets must therefore be carefully considered to ensure optimal investment for renewal while investing to meet the growing needs of our community.

This appendix provides information regarding our approach to management of recreation & culture assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

G.1.1 Strategic Connections

The following strategic and master plans related to Recreation & Culture assets were considered while developing this AMP.

Table 79: Recreation & Culture - Strategic Connections

Document	Strategic Connection
Master Plans	Arts and Culture Plan, Older Adult Strategy
Asset Management Plan Documents	Provides long-term planning for recreation and cultural facility maintenance, upgrades, and lifecycle management.
Annual Business Plan	Outlines funding, programming priorities, and service enhancements for recreation centers, museums, and cultural venues.
Proposed Capital Investment Plan	Allocates funding for facility upgrades, new recreation centers, arena renovations, pool maintenance, and cultural infrastructure.
Operating Budget & Forecast	Covers ongoing operational costs, including staffing, utilities, maintenance, and programming at recreation and cultural facilities.
Climate Adaptation Plan	Ensures recreation and cultural facilities are resilient to climate change impacts, such as heatwaves affecting indoor arenas or flooding risks for museums and community centers.
Energy Conservation and Demand Management Plan	Guides energy-efficient upgrades for recreation and cultural facilities, including LED lighting, HVAC improvements, and solar panels.
Multi-Year Accessibility Plan	Ensures that recreation and cultural facilities meet accessibility standards, including barrier-free entry, accessible seating, and inclusive programming.
Cambridge Connected Strategic Plan	Aligns investments in Recreation & Culture with broader city priorities, including community engagement, wellness, and economic development.
Region of Waterloo Strategic Plan	Supports regional initiatives for recreational and cultural development, including shared arts spaces, sports facilities, and historical preservation.
Development Charges Background Study	Identifies how new recreation and cultural facilities, including arenas, community centers, and theatres, are funded through development charges.
City of Cambridge Official Plan	Supports planning for recreation and cultural spaces, ensuring facilities align with growth, accessibility, and sustainability objectives.

G.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 80: Recreation & Culture - Key Considerations

Type	Considerations
 Climate Risk	• Rising temperatures (periods of extreme heat) • Severe storms; flash flooding
 Climate Adaptation	• Update building design standards • Incorporate green infrastructure elements where feasible • Designate emergency support centers
 Climate Mitigation	• Reduce GHG emissions of buildings
 Heritage Interest	• Significant amount of heritage buildings, including Cambridge Art Theatre, Fire museum, Market building, David Duward Center, Dickson Centre, Galt arena, etc.
 Accessibility Interest	• Newly constructed or redeveloped Indoor Recreation & Culture buildings to meet City's Facilities Accessible Design Standards (FADS)

G.2 State of Infrastructure

G.2.1 Overview

Recreation & culture assets provide fundamental access to assets that deliver leisure, healthy living and learning to all residents of Cambridge.

We recognize the important role these assets play in providing recreational space to the broader community throughout the year to deliver leisure services and programming to help create a safe, accessible and productive community. The maps found in Appendix O shows the City's heritage assets and provides an overview of the City's indoor recreation facilities and libraries.

Table 81: Recreation & Culture Overview

Replacement Value ('000s)	Condition	Asset Class
$551,230	Good	One
Total replacement value of all assets within the recreation & culture asset class.	Weighted average condition rating of recreation & culture assets across all subclasses.	Distinct asset class that we manage as a part of our municipal recreation & culture portfolio.

G.2.2 Asset Class

Table 82: Recreation & Culture Asset Class Overview

Indoor Recreation & Culture
• 6 Arenas • 4 Pools (2 Indoor, 2 Outdoor) • 1 Indoor Soccer Rec Facility • 4 Community Centres • 3 Senior Centres • 2 Museums (Fashion History Museum was leased, set to be vacant May 2025) • 2 Theatres • 1 Market • 16 Recreational Parking Lots • 1 Vacant (Future Arts and Culture Hub (currently under renovation)

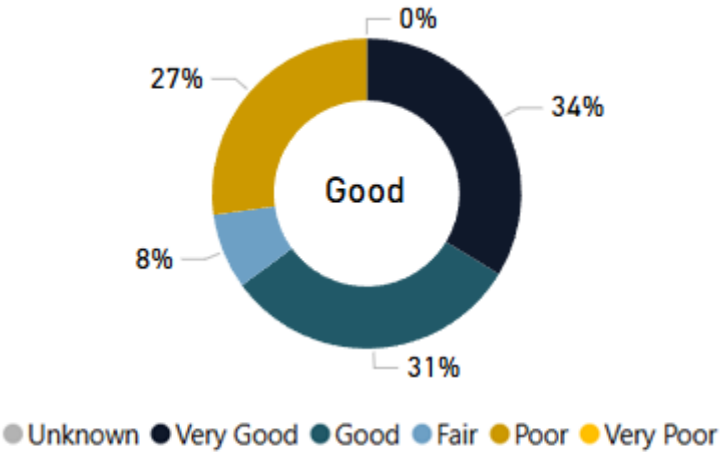


Figure 78: Recreation & Culture - Asset Class Condition Breakdown by Replacement Value

The current condition data on facilities does not include the ongoing building condition assessment project data and is subject to change based on the results of this assessment.

Indoor Recreation & Culture

Replacement Value ('000s)

$551,230

Weighted Avg. Condition Rating

Good

Average Age

64 Years

Figure 79: Indoor Recreation & Culture (% Replacement Value)

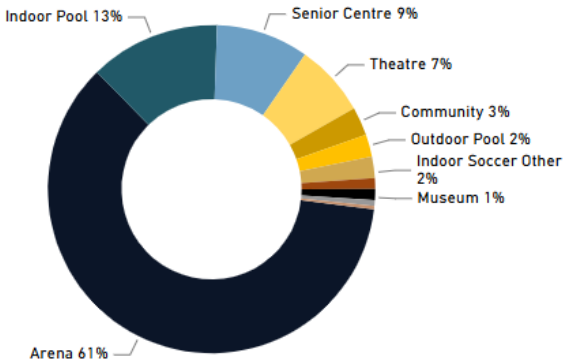
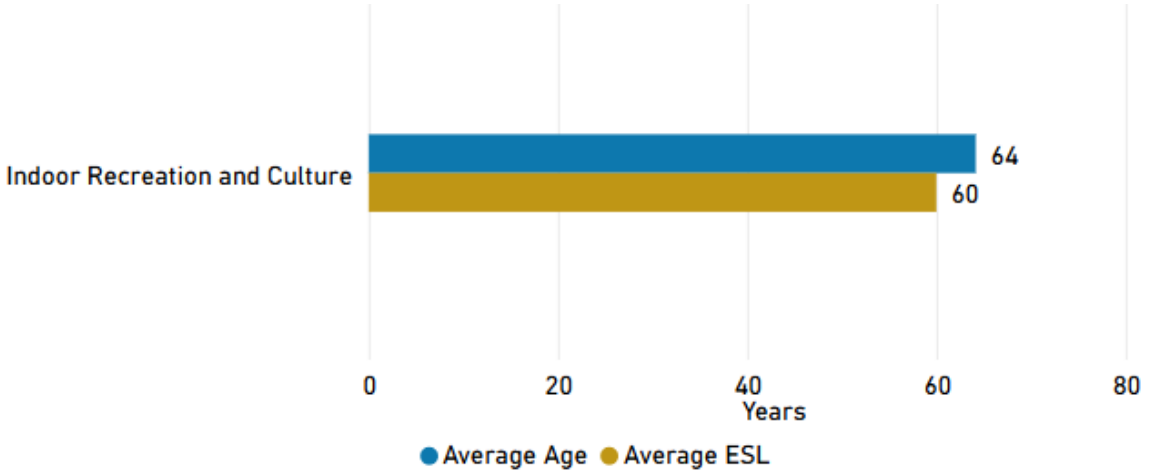


Figure 80: Recreation & Culture – Age and Estimated Service Life



G.3 Levels of Service

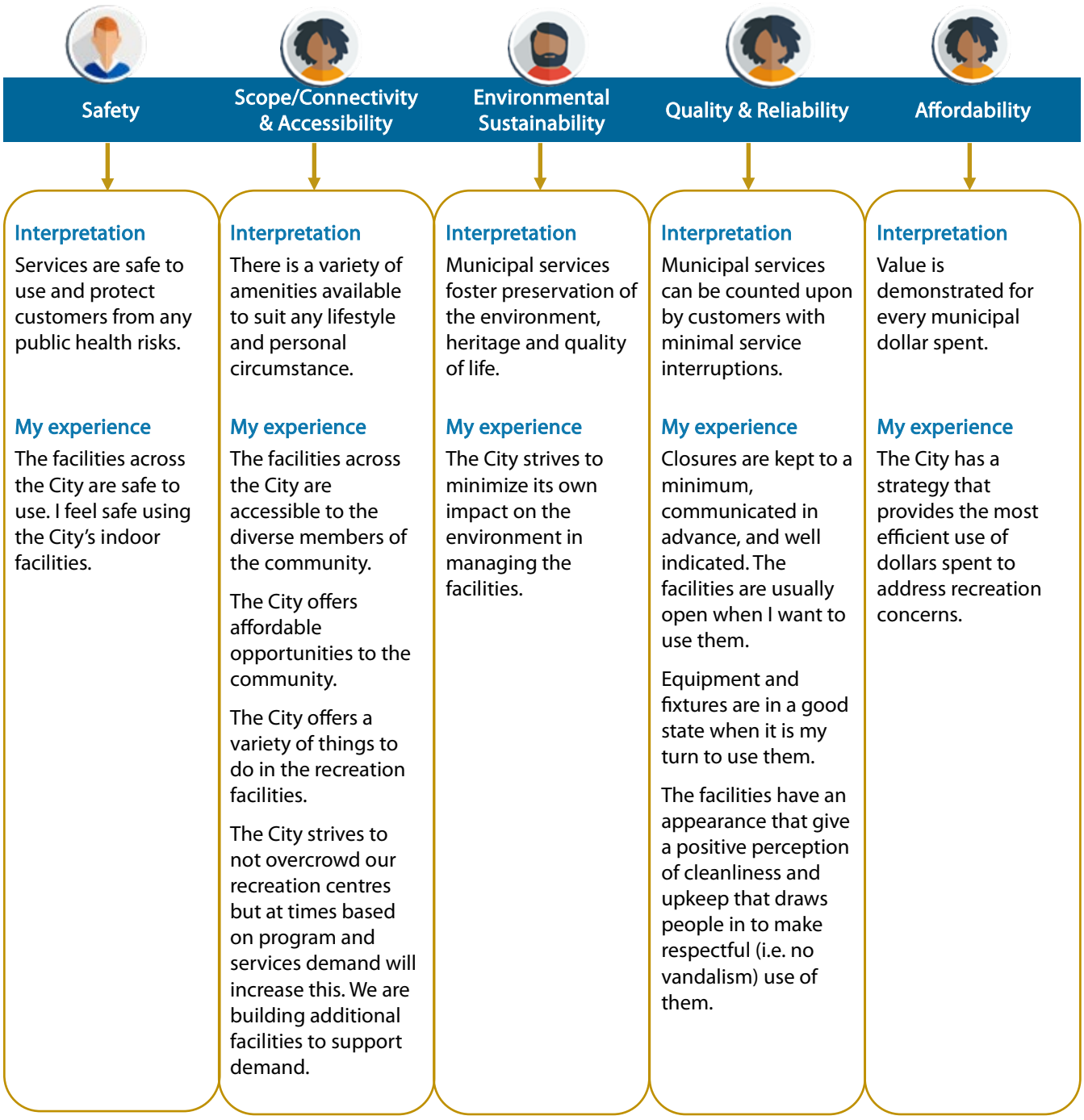
G.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case

of Recreation & Culture assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our Recreation & Culture Master Plan.

Figure 81: Recreation & Culture LOS Framework



With the identification of stakeholder-informed Recreation & Culture priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

G.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, Recreation & Culture assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 83.

Table 83: Recreation & Culture – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement value of Recreation & Culture assets rated "Very Poor"(or "Poor")	27.2%	2.46%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Recreation & Culture assets	1.71%	1.71%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 84: Recreation & Culture – Key Performance Indicators (KPI)

Key Service Attribute	Performance Measure	Current LOS
Connectivity & Accessibility	Community use hours of recreation facilities and sports fields	62,070
Connectivity & Accessibility	Total number of registered programs/services	3,325
Connectivity & Accessibility	Percent of Facilities that meet Facility Accessible Design Standards (FADS)	Future
Connectivity & Accessibility	Utilization Rates of by Facility Type (Ice Surfaces)[9]	54%

[9] Arena reflects ice time from September to March and hours include total hours both prime-time (evening and weekend) and non-prime (weekdays).

Key Service Attribute	Performance Measure	Current LOS
Connectivity & Accessibility	Utilization Rates of by Facility Type (Indoor Pools)	70%
Environmentally Sustainable	Annual natural gas consumption per square foot (m^3/sq.ft.)	1.64 m^3/sq.ft. (2023 Data)
Environmentally Sustainable	Annual hydro consumption per square foot (kWh/sq.ft.)	15.34 kWh/sq.ft. (2023 Data)

G.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its Recreation & Culture assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 85: Lifecycle Activities - Recreation & Culture

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Master Plans (Arts & Culture MP) and other strategic plans	All	As required
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	As required
Formal building condition assessments	Facilities	As per building condition assessment program
Pool inspections	Pools	Daily
Arena inspections	Arenas	Daily
Specialized equipment inspections	Food Preparation Equipment, HVAC, Fire Protection Equipment	Seasonal

Description	Asset	Frequency
Winter maintenance	All	As needed, seasonally
Rehabilitation and Renewal		
Renovation or replacement	Facilities	As required
Renovation or replacement of specialized equipment based	Equipment	As required
Growth & Service Enhancement		
Construction of new facilities or upgrades to existing facilities	Facilities	As required
Acquisition of new additional equipment	Equipment	As required
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

G.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

Although the impacts of recent or potential tariff changes are still unclear, it is important to monitor such developments over time. Future iterations of the Asset Management Plan should consider the potential risks and implications for replacement values, particularly for assets that rely on imported materials or equipment. Ongoing observation of tariff-related trends will support more informed long-term planning and cost forecasting.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

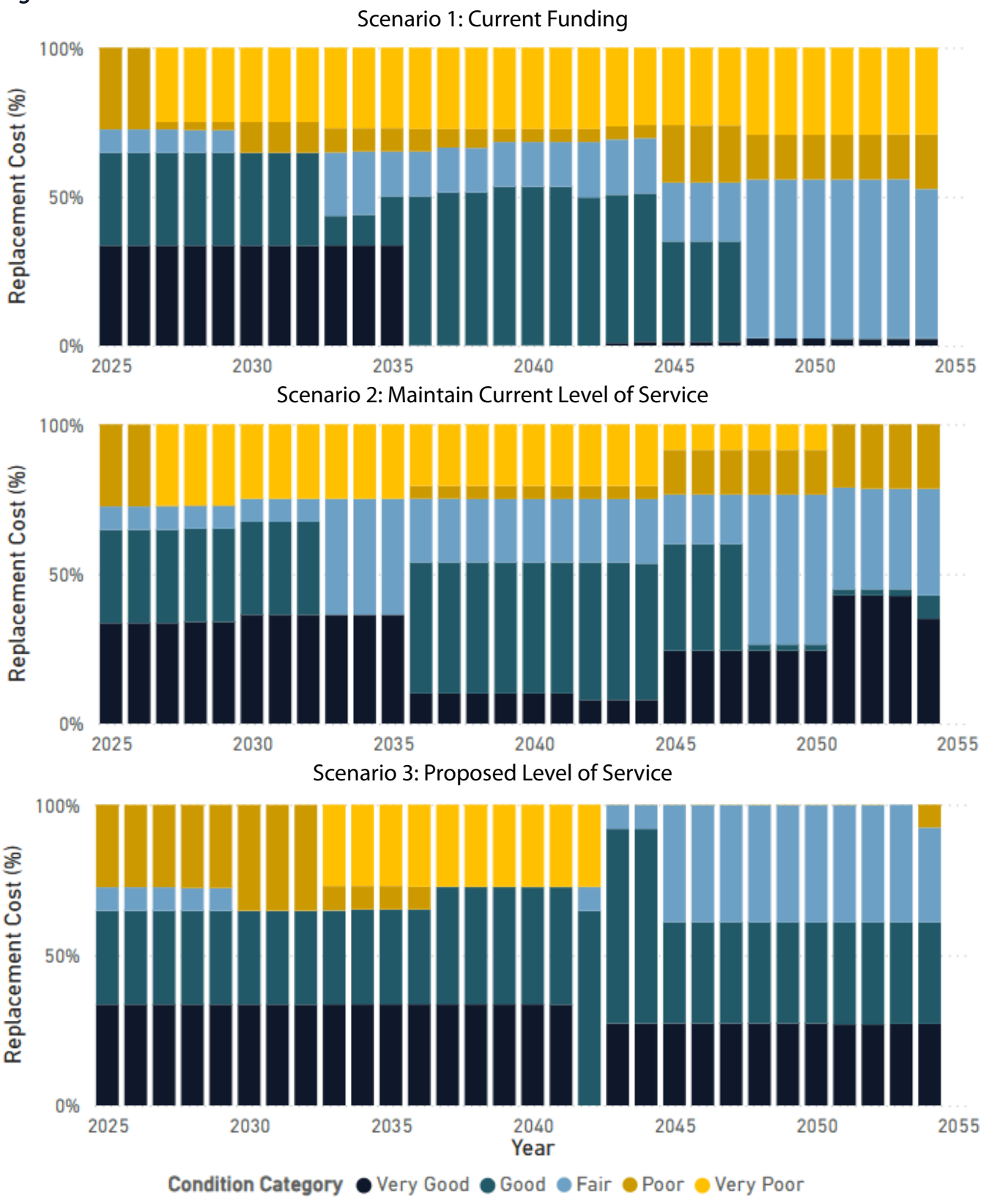
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 82. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 82: Recreation & Culture - Condition Profiles for Service Level Scenarios



Analysis of future forecasted condition does not include the City's ongoing investment for expansion and renewal of the Preston Memorial Auditorium and New Recreation Complex and the Soper Park Pool. Overall average condition forecast would improve once these investments are included. However, the financial forecast includes needs for additional operating costs for operating these new facilities. The analysis also forecasts the need for continue operation of the Dickson and Duncan MacIntosh Arena, repurposing of Karl Homuth, and the continue operation of Dolson and George Hancock Pools. Decommissioning and disposing any of these buildings will reduce the forecasted funding gap and improve the overall condition profiles currently shown in the above figure.

In order to address ongoing funding challenges, the City entered into a long-term ice time rental agreement at the recently expanded quad pad arena at Cambridge Sporks Park. This is a privately owned asset, built with the primary purpose of providing municipal services. This facility is not included in this asset management plan forecast.

Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $2.1M. The condition distribution for the anticipated funding scenario is shown in Figure 82. Overall condition decreases in this scenario.

By 2055, a significant portion of assets fall into the "Fair" to "Very Poor" categories, with very few remaining in "Good" or "Very Good" condition. The growth in "Poor" and "Very Poor" conditions suggests a widening infrastructure gap and increasing long-term risk. This scenario highlights the consequences of continuing with current funding levels, where deferred maintenance and limited rehabilitation lead to declining service levels and greater future costs.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $2.0M for renewal, rehabilitation and replacement activities is needed to maintain performance for Recreation & Culture Assets with no capital funding gap. The performance forecast for scenario 2 is shown in Figure 82.

This scenario reflects a more stable trend. While some deterioration still occurs, the distribution of assets across condition categories remains relatively consistent over time. The proportion of assets in "Good" and "Very Good" condition is sustained moderately, and the growth in "Poor" and "Very Poor" conditions is more contained than in Scenario 1. This scenario demonstrates that maintaining current service levels with adjusted funding can prevent significant decline, but it does not allow for meaningful improvement in asset condition.

Scenario 3 – Proposed Level of Service

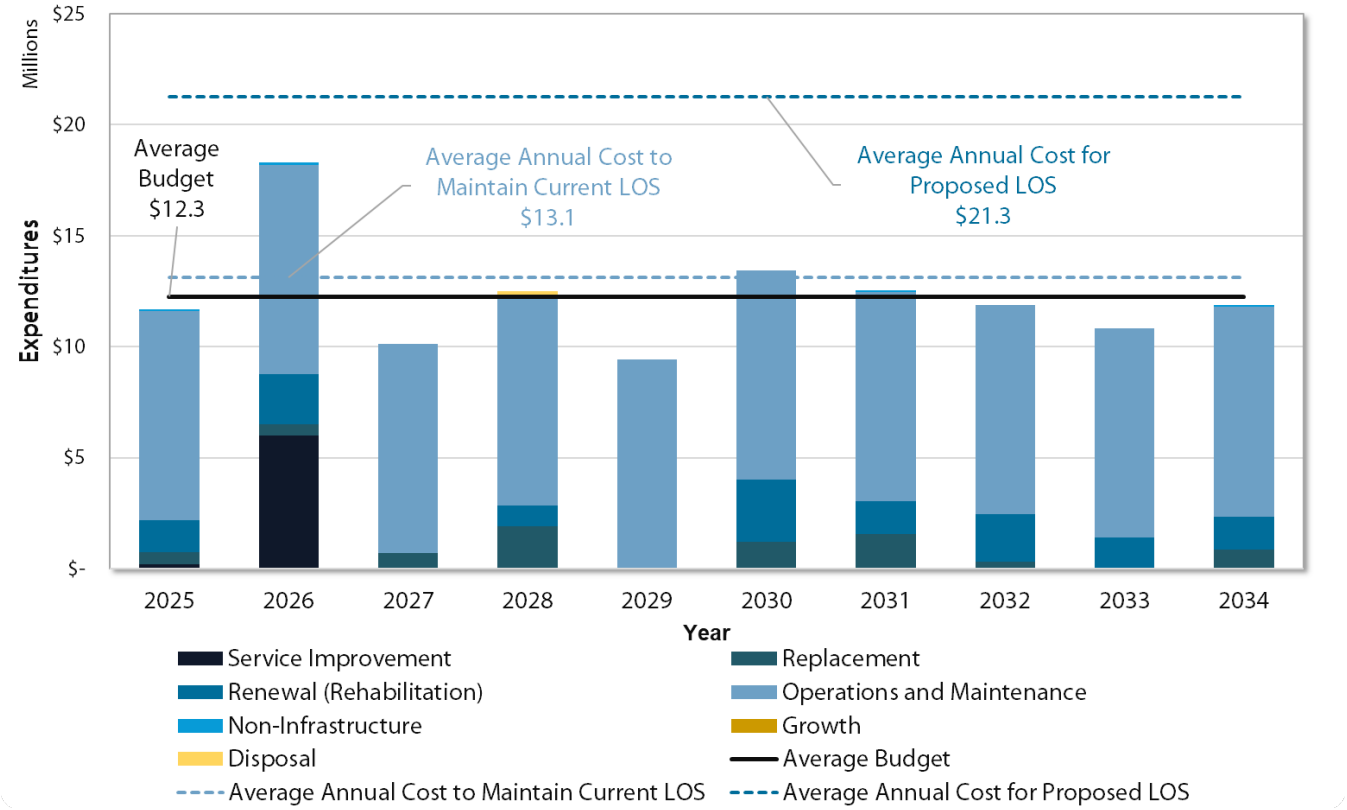
It was determined that an average annual budget of $9.6M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Recreation & Culture Assets with a capital funding gap of $7.5M. This funding need includes renewal needs for Dickson and Duncan MacIntosh Arena, repurposing of Karl Homuth Arena, further investment for continued

use of George Hancock pool and funding for construction of new Soper Park outdoor pool. Decommissioning and disposing any of these buildings will reduce this forecasted funding gap.

This scenario shows a marked improvement in asset conditions, particularly after 2040. The proportion of assets in "Good and "Very Good" condition increases substantially, while those in "Poor" and "Very Poor" condition decline considerably. This scenario is based on a proactive, needs-driven funding approach aligned with lifecycle strategies, resulting in a more sustainable and resilient infrastructure network. It enables the City to better manage long-term costs and risks, ensuring a higher and more reliable level of service for the community.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 83 and Table 86, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 83: Recreation & Culture - Expenditure Scenario Comparison



The scenario comparison indicates that Recreation & Culture has an average annual total gap of $9.0M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is

approximately $7.5M, and the O&M gap, which is discussed below. The total funding gap is outlined in Table 86. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize Recreation & Culture maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 86 shows that maintaining the current level of service requires $2.0M in average annual renewal, rehabilitation, and replacement investments, with no funding gap. Achieving the proposed level of service requires an average annual $9.6M for renewal, rehabilitation and replacement activities, as well as additional funding for service improvements, that are currently unfunded. In total, the proposed LOS average annual capital gap is $7.5M.

An average annual O&M gap of $1.5M is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 86: Recreation & Culture - Lifecycle Activity Investments & Average Annual Infrastructure Gap

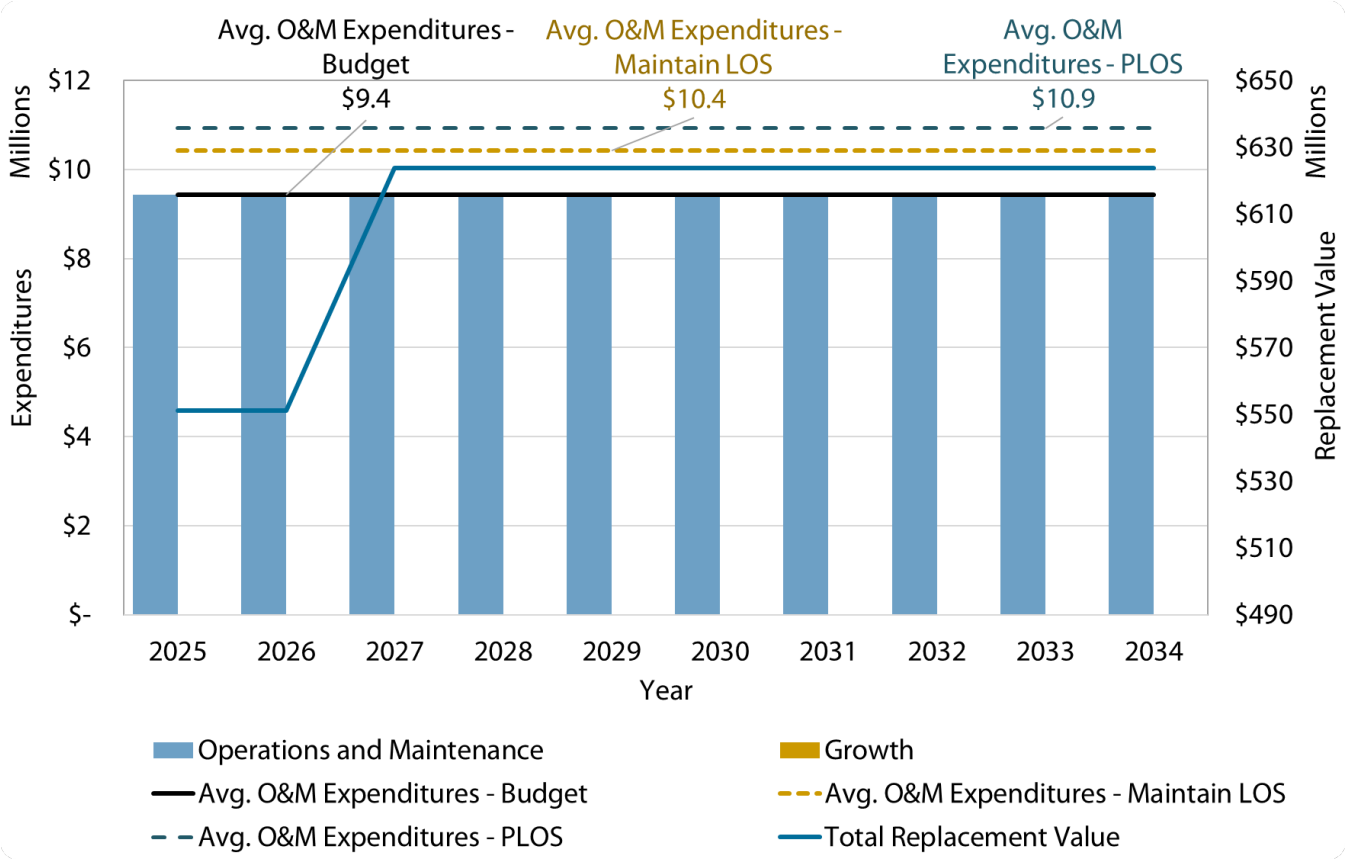
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$25,000	$25,000	$25,000
Growth	$0	$0	$0
Non-Infrastructure	$37,500	$37,500	$37,500
Rehabilitation & Replacement	$2,148,676	$1,978,963	$9,644,029
Service Improvement	$617,500	$617,500	$643,630
Total Capital Expenditures	$2,828,676	$2,658,963	$10,350,159
Capital Infrastructure Gap		No Gap[10]	$7,521,484
Operations & Maintenance	$9,435,250	$10,428,020	$10,929,589
Operations & Maintenance Gap		$992,770	$1,494,339
Total Expenditures	$12,263,926	$13,086,983	$21,279,748
Total Funding Gap		**$823,057**	**$9,015,822**
Gap as Percentage of Replacement Value		0.15%	1.64%

[10] "No Gap" indicates that capital and/or operating funding associated with the LOS scenario is achievable with the available budget

The growth and O&M expenditures shown in Figure 83 are shown in greater detail in Figure 84, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Recreation & Culture assets, additional O&M were only required to accommodate growth and support the opening of a new recreation complex, which accounts for $1.5M of the total annual average funding gap. This operational forecasted funding gap is planned to be addressed as part of the 2026/2027 budget by providing required funding to operate the new Recreation Complex.

Figure 84: Recreation & Culture - Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

G.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Recreation & Culture assets are provided in Table 87.

Table 87: Recreation & Culture – Data Confidence

Asset Class	Data Source	Data Confidence
Indoor Recreation & Culture	GIS Database	Medium

Opportunities for improvement include:

Indoor Recreation & Culture

- Confirmation of installation/construction dates and complete condition assessments at the asset level rather than the facility level would provide a more informative asset register and forecast.

Appendix H

Library Asset Management Plan

H.1 Introduction

The City maintains library assets as part of its wider portfolio to benefit the Cambridge community by providing dedicated space for learning, programming and leisure.

Table 88: Library Assets

Asset Class	Library
Asset Type	• Library Buildings • Collections • Furnishings, Fixtures & Equipment

Library assets are critical to our City as they provide fundamental access to resources for residents of all income levels in the community. More specifically, libraries provide a dedicated location to foster an environment of curiosity to increase learning and creativity.

Library assets are critical to our City as they provide fundamental, equitable access to a variety of forms and the fullest expression of information and the diverse resources in our collections, services and programs. Library services champion the arts and innovation; foster civic pride and engagement; promote community heritage and conviviality; amplify and make community services more accessible, and most vitally, library services foster increased collective and individual learning experiences to help every individual realize their potential. The goals of the Library are to spark imagination, ignite potential, celebrate curiosity, cultivate collective community growth, and strengthen the fabric of our community.

Our investment in these assets must therefore be carefully considered to ensure we meet both the renewal and growing needs of our community.

This appendix provides information regarding our approach to management of library assets in the next 10 years, demonstrating our commitment to assessing and meeting the LOS valued by our residents.

H.1.1 Strategic Connections

The following strategic plans related to library assets were considered while developing this AMP.

Table 89: Library - Strategic Connections

Document	Strategic Connection
Library Strategic Plan	The plan features three strategic priorities: Inspire Through Experiences: Creating opportunities to explore and learn together. Connect Through Community: Inviting people and partners to create positive change. Empower Through Learning: Embracing knowledge that inspires people to unlock their potential.
Asset Management Plan Documents	Provides long-term planning for library facility maintenance, technology upgrades, and lifecycle management.
Annual Business Plan	Outlines library service priorities, digital resource investments, and operational improvements.
Proposed Capital Investment Plan	Allocates funding for new library branches, renovations, technology upgrades, and facility maintenance.
Operating Budget & Forecast	Covers ongoing operational costs, including staffing, materials, digital services, and facility upkeep.
Climate Adaptation Plan	Ensures library buildings are resilient to climate-related risks, such as extreme weather and energy efficiency improvements.
Energy Conservation and Demand Management Plan	Guides energy-efficient upgrades in libraries, including lighting, HVAC improvements, and sustainable building retrofits.
Multi-Year Accessibility Plan	Ensures libraries meet accessibility standards, including barrier-free entry, adaptive technologies, and inclusive services.
Cambridge Connected Strategic Plan	Aligns library investments with city priorities for education, digital access, and community engagement.
Region of Waterloo Strategic Plan	Supports regional collaboration on library services, including resource-sharing and digital literacy programs.
Development Charges Background Study	Identifies how new libraries or expansions are funded through development charges as the city grows.
City of Cambridge Official Plan	Supports library development and ensures facilities align with population growth, accessibility, and service delivery goals.

H.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 90: Library - Key Considerations

Type	Considerations
 Climate Risk	• Rising temperatures (periods of extreme heat) • Severe storms; flash flooding
 Climate Adaptation	• Update building design standards • Incorporate green infrastructure elements where feasible • Designate emergency support centres
 Climate Mitigation	• Reduce GHG emissions of buildings • Provide public access to climate change adaptation / mitigation information materials
 Heritage Interest	• Several heritage library buildings, including the Old Post Office, Queen's Square library, and Hespeler.
 Accessibility Interest	• Future Library renovations to meet City's Facilities Accessible Design Standards (FADS)

H.2 State of Infrastructure

H.2.1 Overview

Library assets provide equitable, free access to assets that support leisure and learning to all residents of Cambridge. We recognize the important role these assets play in providing dedicated spaces to foster an environment of curiosity to increase learning and creativity. The map providing an overview of the locations of the City's library and indoor recreation facilities can be found in Appendix O.

Table 91: Library Overview

Replacement Value ('000s)	Condition	Asset Class
$77,132	Good	One
Total replacement value of all assets within the library asset class.	Weighted average condition rating of library assets across all subclasses.	Distinct asset class that we manage as a part of our municipal library portfolio.

H.2.2 Asset Class

Table 92: Library Asset Class Overview

Library

- 5 Library Buildings
- Library Collections
- Furnishings, Fixtures, Equipment

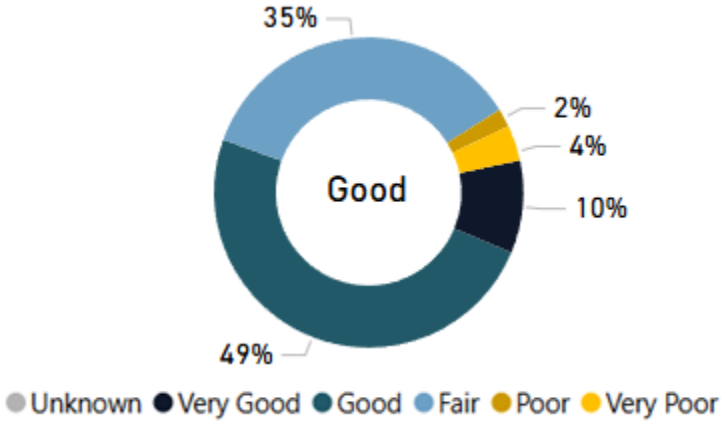


Figure 85: Library - Asset Class Condition Breakdown by Replacement Value

Library

Replacement Value ('000s)

$77,132

Weighted Avg. Condition Rating

Good

Average Age

65 Years

Figure 86: Library (% Replacement Value)

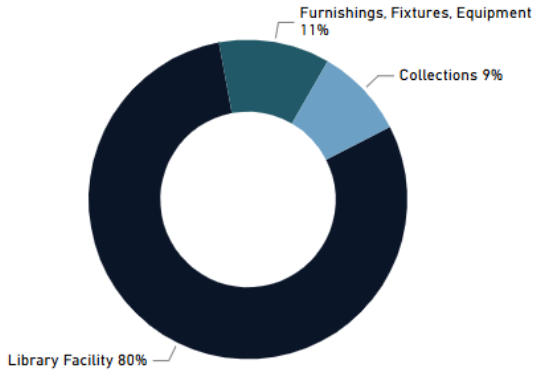
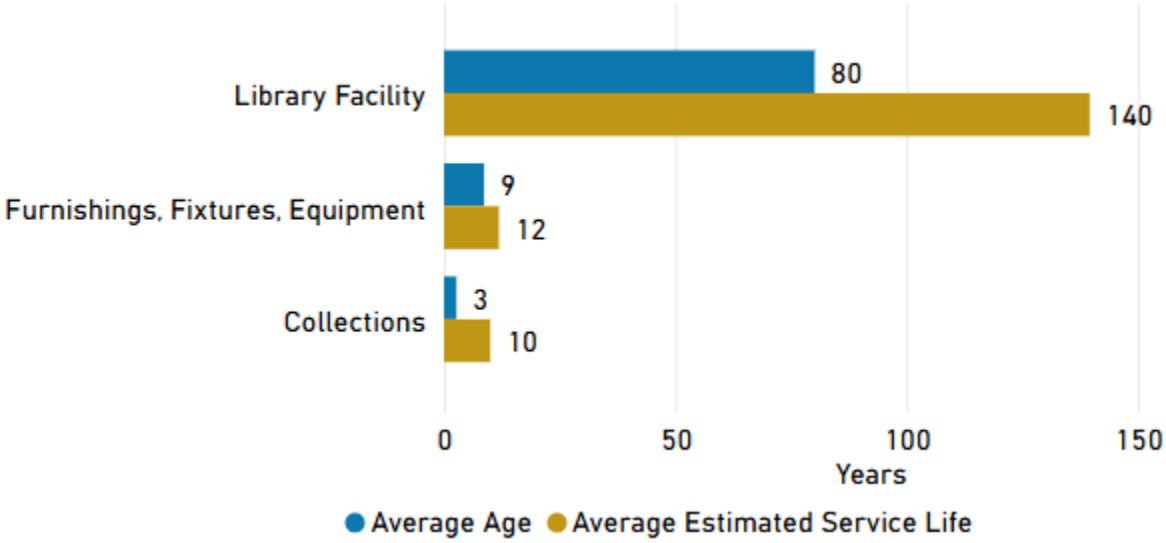


Figure 87: Library – Age and Estimated Service Life



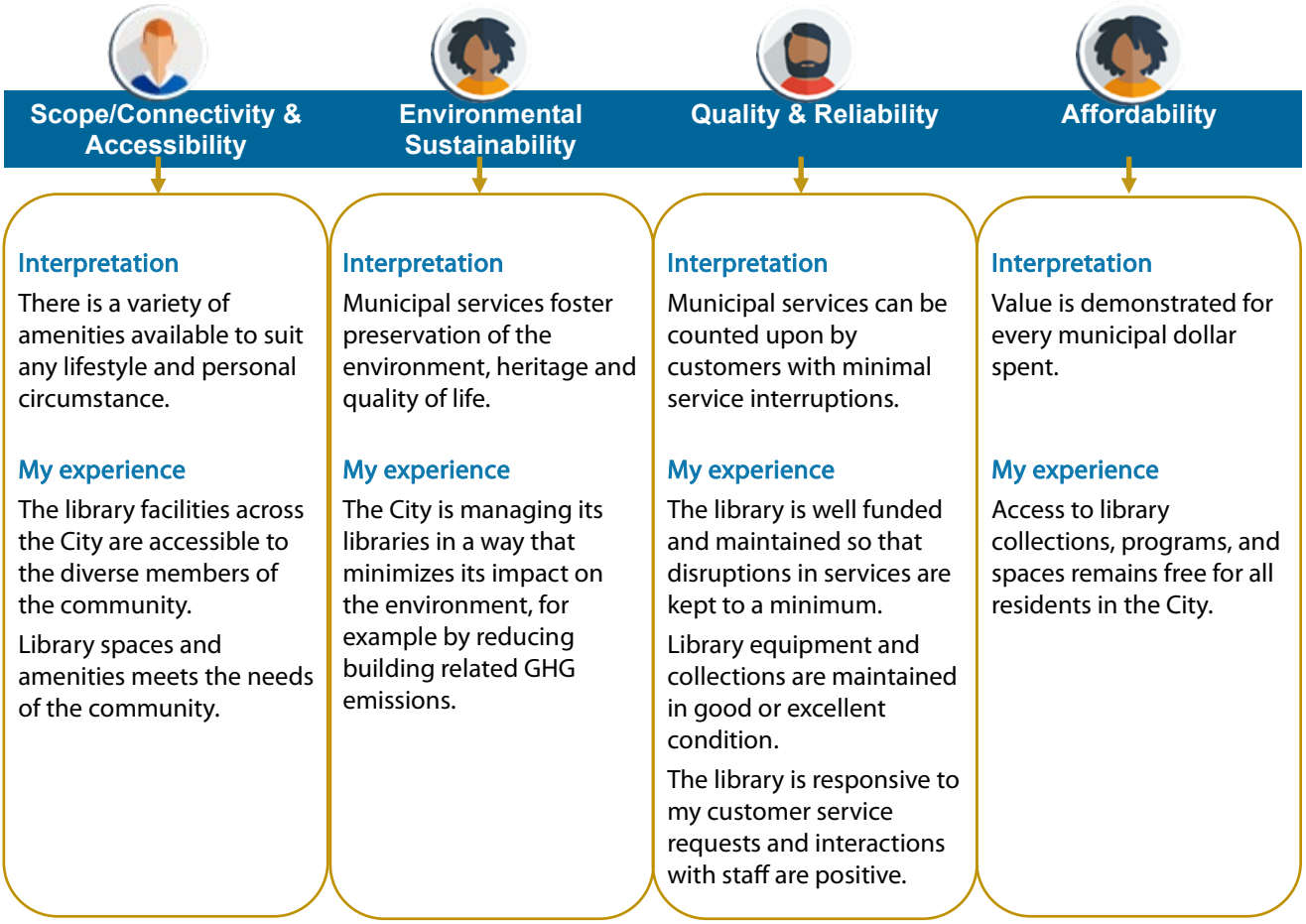
H.3 Levels of Service

H.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of library assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our Library Strategic Plan.

Figure 88: Library LOS Framework



With the identification of stakeholder-informed library priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

H.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, library assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 93.

Table 93: Library – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement cost of Library assets rated "Poor" to "Very Poor".	5.62%	8.51%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Library assets	12.05%	12.05%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels. It is anticipated that current and proposed service levels is expected to improve after the opening of the new library currently under construction in the south-east area of the City.

Table 94: Library – Key Performance Indicators (KPI)

Key Service Attribute	Performance Measure	Current LOS
Connectivity & Accessibility	Library space per capita	0.6
Connectivity & Accessibility	# of hours weekly of service maintained across 5 facilities	311
Connectivity & Accessibility	Use of virtual library assets	3,958,796
Connectivity & Accessibility	Library in person visits	758,763
Connectivity & Accessibility	Library program attendance	134,502
Connectivity & Accessibility	Materials borrowed	899,696

H.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its library assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 95: Lifecycle Activities - Library

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Library Master Plan and other strategic plans	All	As required
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report	All	5 years
Library policies and procurement	All	As required
Accessibility Plan	All	5 years
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	As required
Building condition assessments	Facilities	As per condition assessment program
Asbestos Inspection	All	Annually
Winter maintenance	All	As required, seasonally
Rehabilitation and Renewal		
Renovation or replacement of library buildings (and related parking lots)	Facilities	Annually, based on annual needs assessment
Replacement of collections based on annual needs assessment	Collections	As required
Replacement of furnishings, fixtures, equipment based on annual needs assessment	Furnishings, Fixtures, Equipment	As required
Growth & Service Enhancement		

Description	Asset	Frequency
Construction of new facilities or upgrades to existing facilities	Facilities	As required
Acquisition of equipment	Equipment	As required
Disposal		
Disposal activities related to replacement, such as book sales (2x year)	All	As required
Decommissioning	All	As required

H.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the

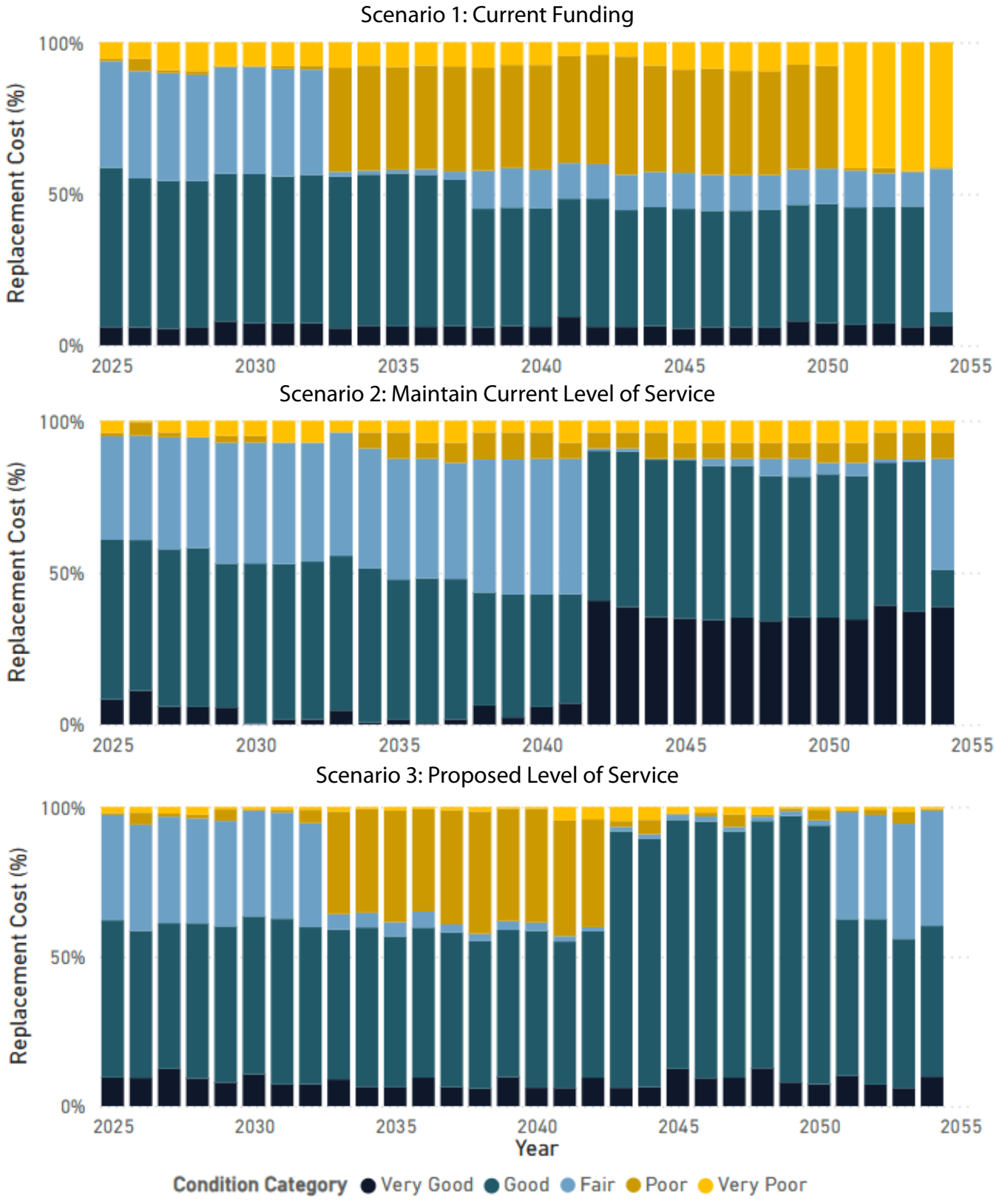
purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, the Library Board, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 89. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 89: Library - Condition Profiles for Service Level Scenarios



The future condition and proposed service level forecast does not include the new library under construction in the southeast area of the City. Once the new library is opened, the overall condition rating along with the proposed service level forecast is expected to improve.

Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $1.1M. The condition distribution for the anticipated funding scenario is shown in Figure 89. Overall condition decreases in this scenario.

With current funding levels, the condition of Library assets remains relatively stable at first but gradually declines over the long term. The majority of assets stay in "Good" and "Fair" condition from 2025 to around 2035. However, after this period, there is a clear increase in the proportion of assets rated "Poor" and "Very Poor." By 2055, the share of assets in those lower condition categories has grown noticeably, while assets in "Very Good" and "Good" condition slightly decline. This suggests that while current funding can delay deterioration in the short term, it is not adequate to maintain high asset standards over time, leading to a slow but persistent drop in overall asset quality.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $1.9M for renewal, rehabilitation and replacement activities is needed to maintain performance for Library Assets with a capital funding gap of $723K. The performance forecast for scenario 2 is shown in Figure 89.

This scenario demonstrates a more proactive and sustainable asset management strategy. From 2025 onward, a higher proportion of assets is maintained in "Very Good" and "Good" condition compared to Scenario 1. While there is some fluctuation in condition around the 2035–2045 window, the overall profile improves again after that. By 2055, there is a visible increase in "Very Good" condition assets and a lower presence of "Poor" and "Very Poor" ones. This indicates that maintaining the current level of service requires more than current funding but provides a solid return in the form of more reliable and better-maintained library facilities.

Scenario 3 – Proposed Level of Service

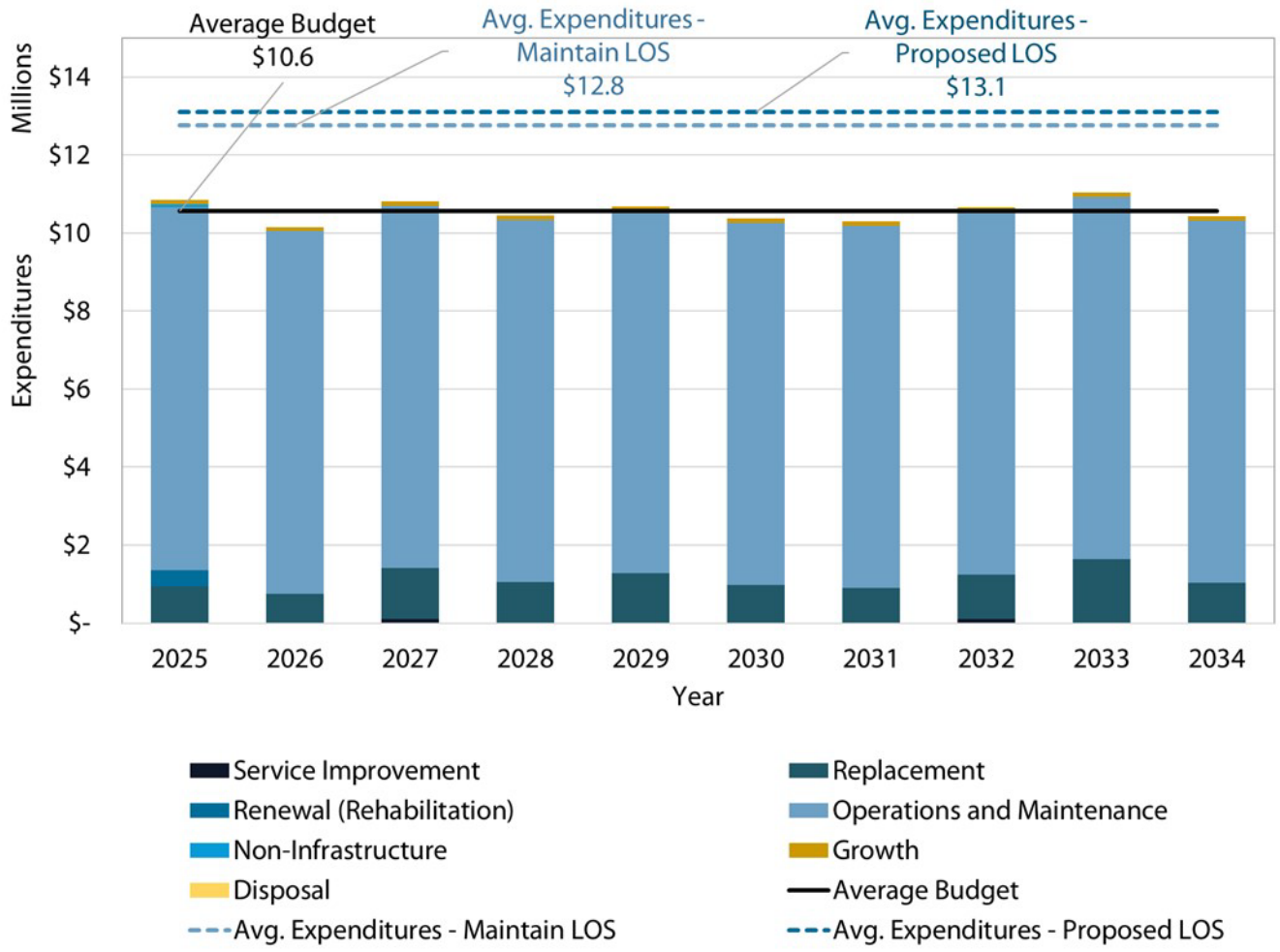
It was determined that an average annual budget of $2.2M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Library Assets with a capital funding gap of $1.1M.

The proposed level of service provides the most positive trajectory for Library assets. From the start, the condition profile remains strong, with the majority of assets in "Very Good," "Good," and "Fair" condition. There is only a minimal proportion of assets rated "Poor" or "Very Poor" throughout the entire forecast period, besides an increase from 2033 - 2043 which is expected to change once the new library is opened and added to the condition forecast. Over time, there is even improvement, with increasing shares of assets shifting into the "Good" category by 2055. This scenario clearly supports long-term asset sustainability and performance, ensuring high service levels and avoiding

backlog issues due to underinvestment. It reflects a strategy focused on long-term value and resilience.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 90 and Table 96, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 90: Library - Expenditure Scenario Comparison



The scenario comparison indicates that Library has an average annual total gap of $2.5M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $1.1M, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 96. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize libraries maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 96 shows that maintaining the current level of service requires $1.9M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $723K. Achieving the proposed level of service requires an average annual $2.2M for renewal, rehabilitation and replacement activities. In total, the proposed LOS average annual capital gap is $1.1M.

An average annual O&M gap of $1.5M is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 96: Library - Lifecycle Activity Investments & Average Annual Infrastructure Gap

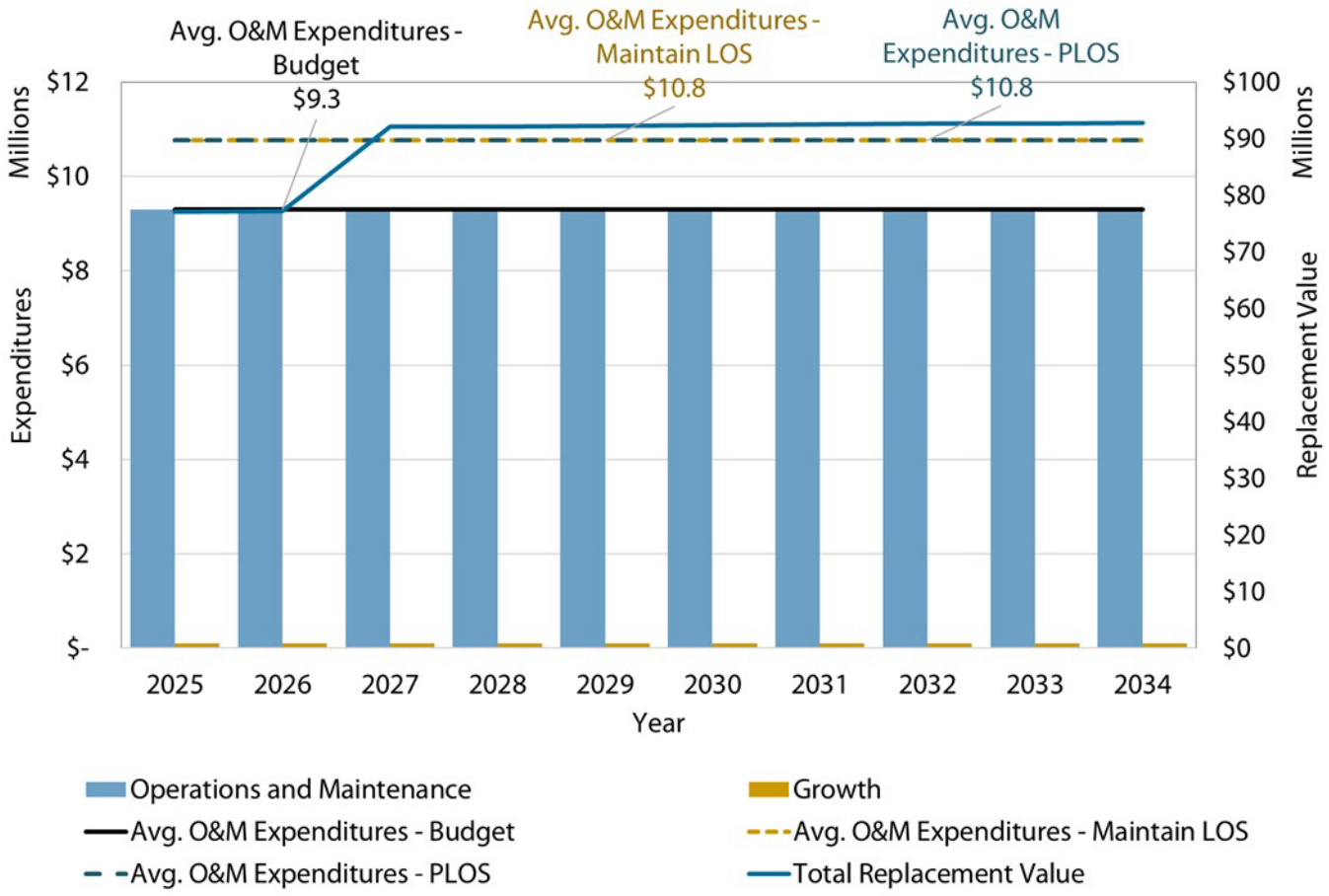
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$109,000	$109,000	$109,000
Non-Infrastructure	$9,000	$9,000	$9,000
Rehabilitation & Replacement	$1,144,370	$1,867,534	$2,205,611
Service Improvement	$20,000	$20,000	$20,000
Total Capital Expenditures	$1,282,370	$2,005,534	$2,343,611
Capital Infrastructure Gap		$723,164	$1,061,241
Operations & Maintenance	$9,292,950	$10,769,238	$10,769,238
Operations & Maintenance Gap		$1,476,288	$1,476,288
Total Expenditures	$10,575,320	$12,774,772	$13,112,849
Total Funding Gap		**$2,199,452**	**$2,537,529**
Gap as Percentage of Replacement Value		**2.85%**	**3.29%**

The growth and O&M expenditures shown in Figure 90 are shown in greater detail in Figure 91, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increasing asset portfolio. Efforts were made to quantify additional requirements (if required) for O&M above the additional need for growth. The new library that will be opened in 2026/2027 was included in this analysis, although the capital growth expenditure is not reflected within this graph.

Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost. For Library assets, additional O&M were only required to accommodate growth, which accounts for $1.5M of the total annual average funding gap. This analysis does not include contributed assets, which are assets that have been constructed and paid for by developers then transferred to the City as part of development agreements.

Figure 91: Library - Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

H.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Library assets are provided in Table 97.

Table 97: Library – Data Confidence

Asset Class	Data Source	Data Confidence
Library	Library inventory	High

Opportunities for improvement include:

Library

- Confirm estimated service lives for all assets, update or remove assets from the register where the quantity is zero/assets have been fully replaced or cycled out to maintain data integrity.

Appendix I

Corporate Facilities Asset Management Plan

I.1 Introduction

The City maintains a portfolio of assets that support and enable all of the services that we, and our partners, provide for the benefit of residents.

Table 98: Corporate Facilities Assets

Service Area	Corporate Facilities
Asset Class	• Corporate Facilities • Maintenance and Storage Facilities • Operations Facilities • Leased Facilities • Vacant Facilities • Parking Lots

This collection of assets is critical to the City as it is what makes us operational. It is within the corporate facilities that our service area plans, organizes, and works to achieve our purpose and vision. Our leased buildings to others are what enable our partners to work alongside us to provide residents with the services they desire.

If it were not for these assets, we would not be able to provide the services that we do today; nor would we be able to achieve our vision for the future.

This appendix outlines our plan to manage our portfolio of assets relating to resource management over the next 10 years, demonstrating our commitment to meeting the LOS valued by our residents, as efficiently as possible.

I.1.1 Strategic Connections

The following strategic and master plans related to corporate facilities assets were considered while developing this AMP.

Table 99: Corporate Facilities - Strategic Connections

Document	Strategic Connection
Master Plans	Includes facility-related master plans.
Asset Management Plan Documents	Provides long-term planning for municipal facility maintenance, lifecycle management, and capital investments.
Annual Business Plan	Outlines priorities for municipal facility maintenance, service improvements, and operational efficiency.
Proposed Capital Investment Plan	Allocates funding for new municipal buildings, renovations, maintenance, and facility upgrades.
Operating Budget & Forecast	Covers ongoing costs for facility operations, maintenance, staffing, and utilities.
Climate Adaptation Plan	Ensures municipal facilities are resilient to climate risks, including extreme weather events and energy efficiency improvements.
Energy Conservation and Demand Management Plan	Guides energy-efficient retrofits in municipal buildings, including LED (Light Emitting Diode) lighting, HVAC (Heating, Ventilation and Air Conditioning) upgrades, and solar panel installations.
Multi-Year Accessibility Plan	Ensures municipal facilities comply with accessibility standards, including barrier-free design and accessible public spaces.
Cambridge Connected Strategic Plan	Aligns facility investments with municipal goals for sustainability, community services, and infrastructure improvements.
Development Charges Background Study	Identifies how new municipal facilities, such as community centers and public buildings, are funded through development charges.
City of Cambridge Official Plan	Supports facility planning, ensuring municipal buildings align with growth, accessibility, and sustainability goals.

I.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 100: Corporate Facilities - Key Considerations

Type	Considerations
 Climate Risk	• Rising temperatures (periods of extreme heat) • Severe storms; flash flooding
 Climate Adaptation	• Update building design standards • Incorporate green infrastructure elements where feasible • Designate emergency support centers
 Climate Mitigation	• Reduce GHG emissions of buildings
 Heritage Interest	• Some heritage buildings, including Historic City Hall
 Accessibility Interest	• Newly constructed or redeveloped Corporate Facilities to meet City's Facility Accessibility Design Standards (FADS)

I.2 State of Infrastructure

I.2.1 Overview

Our corporate facilities assets are central to our ability to provide municipal services. While not as prominent as our core assets, we would not be able to inspect, manage, maintain, plan, and communicate without these. We recognize that the efficiency and value we can derive from our corporate facilities assets extends into all other portfolios, which is what makes them particularly important.

Table 101: Corporate Facilities Overview

Replacement Value ('000s)	Condition	Asset Class
$153,575	Good	Six
Total replacement value of all assets within the corporate facilities asset class.	Weighted average condition rating of corporate facilities assets across all subclasses.	Distinct asset class that we manage as a part of our municipal corporate facilities portfolio.

I.2.2 Asset Class

Table 102: Corporate Facilities - Asset Class Overview – Corporate, Leased, Maintenance & Storage Facilities

Corporate Facilities	Leased Facilities	Maintenance & Storage Facilities
• 3 Corporate Facilities	• 8 Leased Facilities	• 15 Maintenance & Storage Facilities

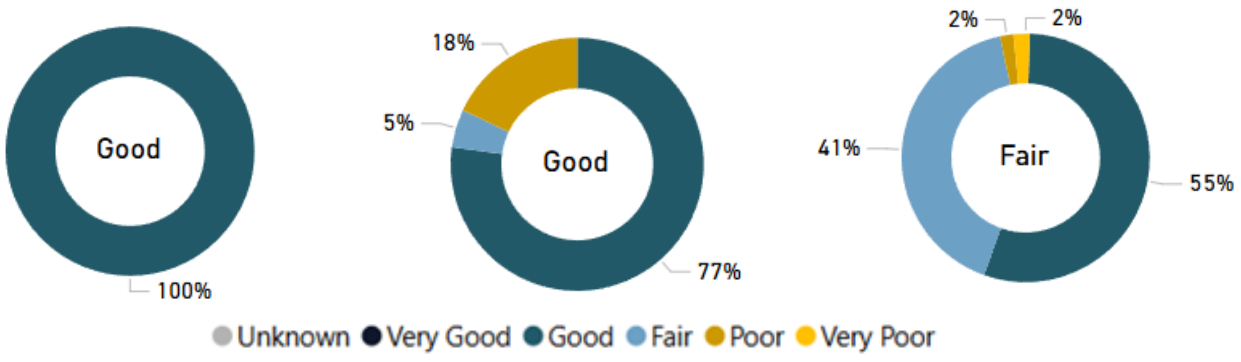


Figure 92: Corporate Facilities - Asset Class Condition - Corporate, Leased, Maintenance & Storage Facilities

Table 103: Corporate Facilities - Asset Class Overview – Operations and Vacant Facilities and Parking Lots

Operations Facilities	Parking Lot	Vacant Facilities
• 8 Operations Facilities	• 10 Facility Parking Lots	• 6 Vacant Facilities

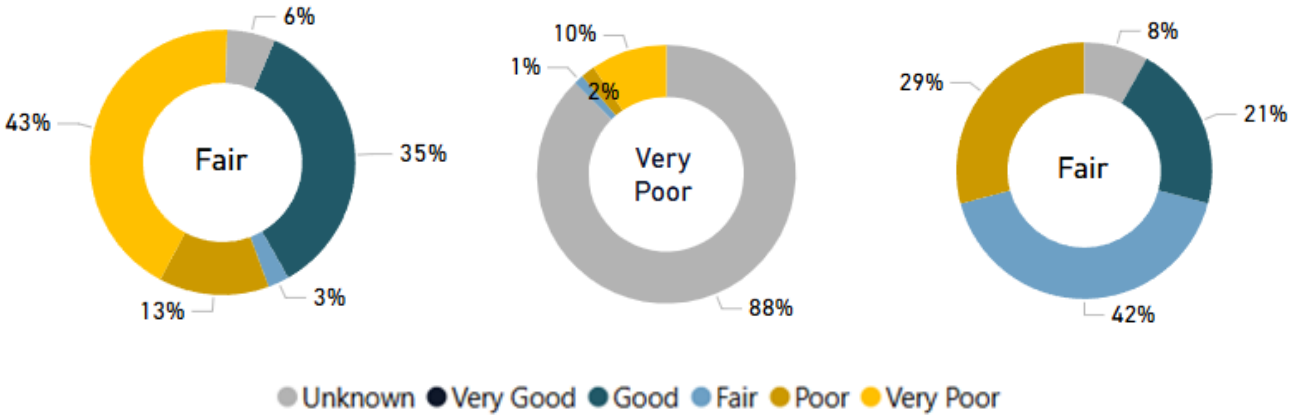


Figure 93: Corporate Facilities - Asset Class Condition – Operations and Vacant Facilities and Parking Lots

The current condition data on facilities does not include the ongoing building condition assessment project data and is subject to change based on the results of this assessment.

Corporate Facilities

Replacement Value ('000s)

$153,575

Weighted Avg. Condition Rating

Good

Average Age

54 Years

Figure 94: Corporate Facilities (% Replacement Value)

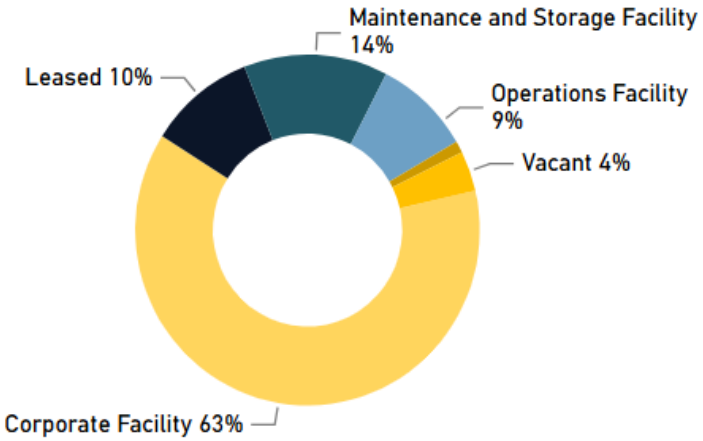
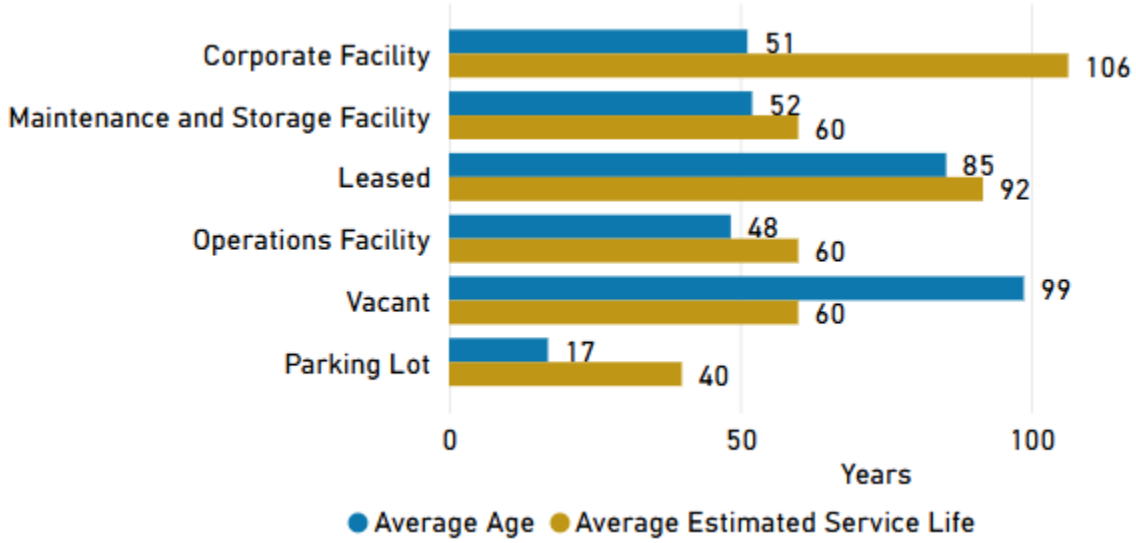


Figure 95: Corporate Facilities – Age and Estimated Service Life



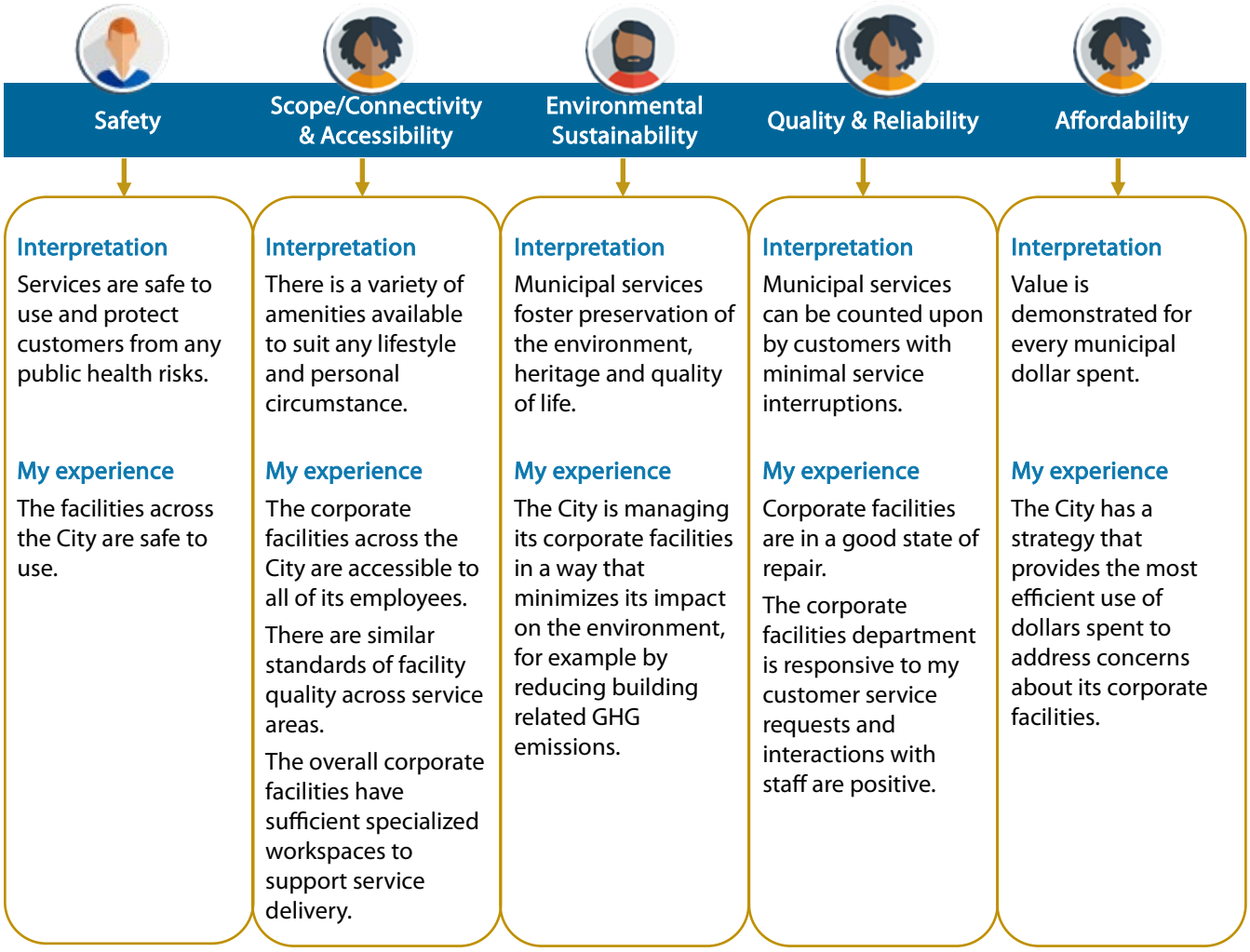
I.3 Levels of Service

I.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of corporate facilities assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our facility-related master plans, such as recreation, library, and civic infrastructure planning.

Figure 96: Corporate Facilities LOS Framework



With the identification of stakeholder-informed corporate facilities priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

I.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, facilities assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 104.

Table 104: Corporate Facilities – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement value of Corporate Facilities assets rated "Very Poor" (or "Poor")	8.62%	9.03%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Corporate Facilities assets	2.68%	2.68%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 105: Corporate Facilities - Key Performance Indicators (KPI)

Key Service Attribute	Performance Measure	Current LOS
Quality & Reliability	% of planned maintenance activities completed as per schedule	Future
Quality & Reliability	# of service disruptions in facilities	Future
Connectivity & Accessibility	Percent of Facilities that meet Accessible Facility Design Standards	Future
Environmentally Sustainable	Annual natural gas consumption per square foot (m^3/sq.ft.)	1.31 m^3/sq.ft. (2023 Data)
Environmentally Sustainable	Annual hydro consumption per square foot (kWh/sq.ft.)	10.26 kWh/sq.ft. (2023 Data)

I.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its corporate facilities assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 106: Lifecycle Activities - Corporate Facilities

Description	Asset	Frequency
Non-Infrastructure Solutions		
Corporate Space Utilization Plan	All	As required
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities	All	As per maintenance schedule
Formal building and related parking lot condition assessments	All	As per condition assessment program
Minor Capital Projects Programs	All	Future
Winter maintenance facilities and related parking lots	All	As required, seasonal
Building and related parking lot security	All	As required
Lease building contract management by Realty services	All	As required
Rehabilitation and Renewal		
Renovation or replacement of facilities (and related parking lots) based on annual needs assessment	All	As required
Growth & Service Enhancement		
Construction of new facilities or upgrades to existing facilities	Corporate Facilities	As required
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

I.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of

good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

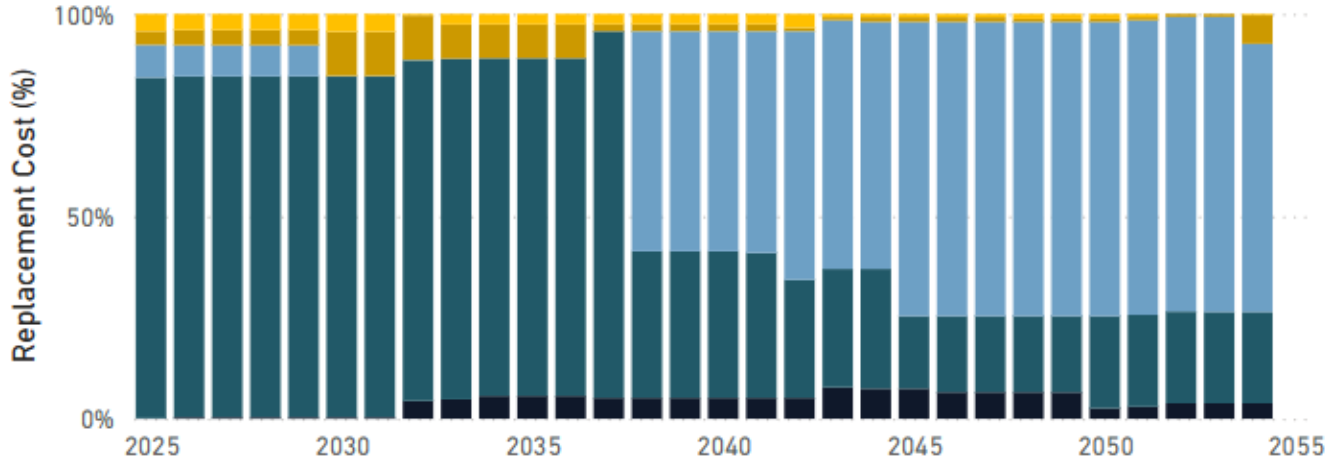
Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

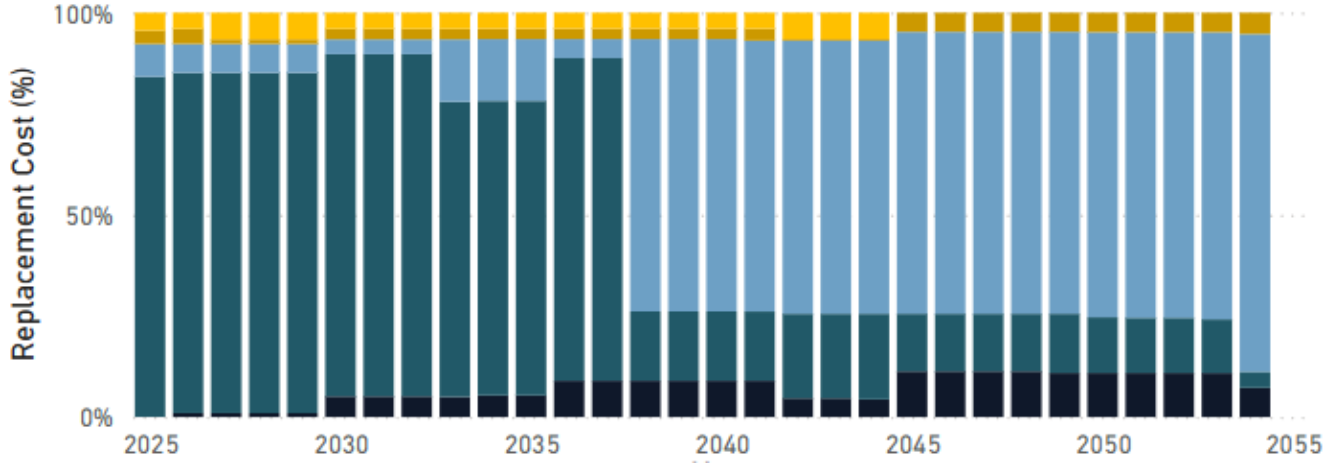
The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 97. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 97: Corporate Facilities - Condition Profiles for Service Level Scenarios

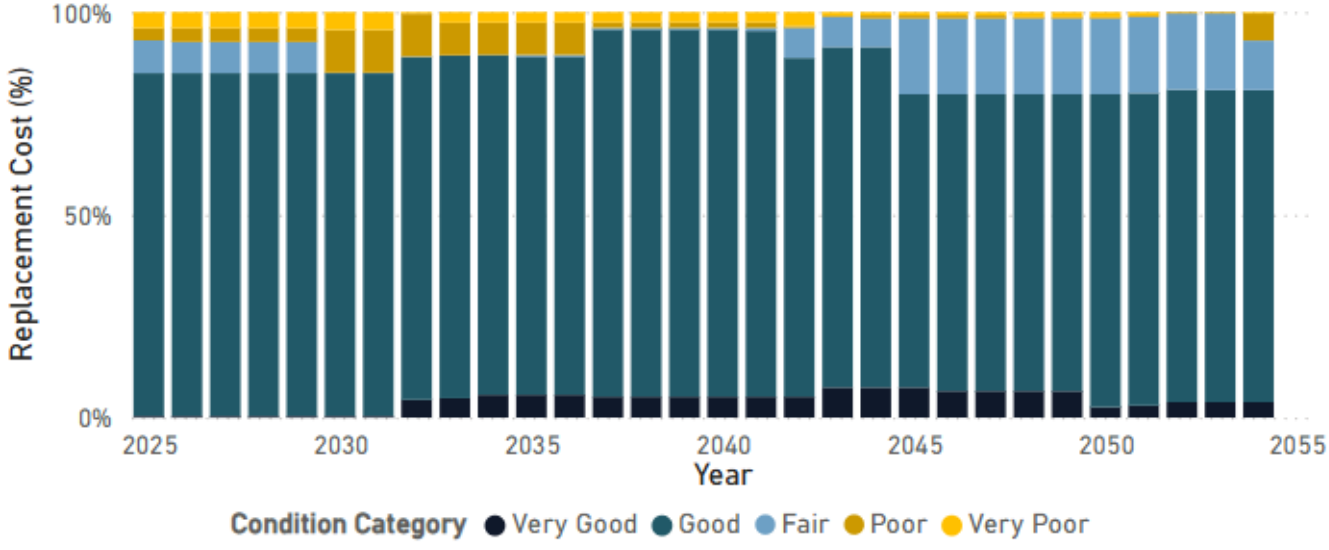
Scenario 1: Current Funding



Scenario 2: Maintain Current Level of Service



Scenario 3: Proposed Level of Service



The City is in the process of completing a project to review all operations facility for outside service staff and equipment storage, which will identify need for facility renewal to support future growth for the next 30 years. The project is expected to be complete later in 2025 identifying investment needs for renewal and replacement of various operations facilities and any requirements for new facilities.

The condition distribution for all scenarios is shown in Figure 97.

Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $1.1M. Overall condition decreases in this scenario.

Under current funding levels, the condition of facilities assets begins reasonably well, with most assets in "Good" and "Fair" condition in the short term. However, a significant deterioration sets in after 2030. By around 2035 to 2045, the share of assets in "Very Good" and "Good" condition drops, while those in "Fair" increase. This suggests that without increased investment, aging assets outpace renewal efforts, leading to reduced service quality and increasing deferred maintenance. Toward 2055, there is a modest recovery in "Good" assets, but "Fair" remains dominant, indicating that many assets are hovering near the threshold of decline.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $836K for renewal, rehabilitation and replacement activities is needed to maintain performance for Corporate Facilities Assets with no funding gap (the City's current funding supports meeting the current LOS).

From 2025 to around 2035, a relatively balanced distribution is seen, with a large portion of assets in the "Good" condition category and smaller portions in "Very Good", "Fair", and a persistent band of "Poor" and "Very Poor" assets. However, from 2040 onwards, the condition stabilizes at a lower overall quality than ideal—while the share of assets in "Very Good" slightly increases, a significant portion remains in "Fair" and "Poor" categories, with "Very Poor" assets still present (though minor). The system does not degrade as sharply as in Scenario 1, but it also does not reach the high performance seen in Scenario 3. This indicates that maintaining current levels of service mitigates some decline, but it does not significantly enhance long-term asset condition.

Scenario 3 – Proposed Level of Service

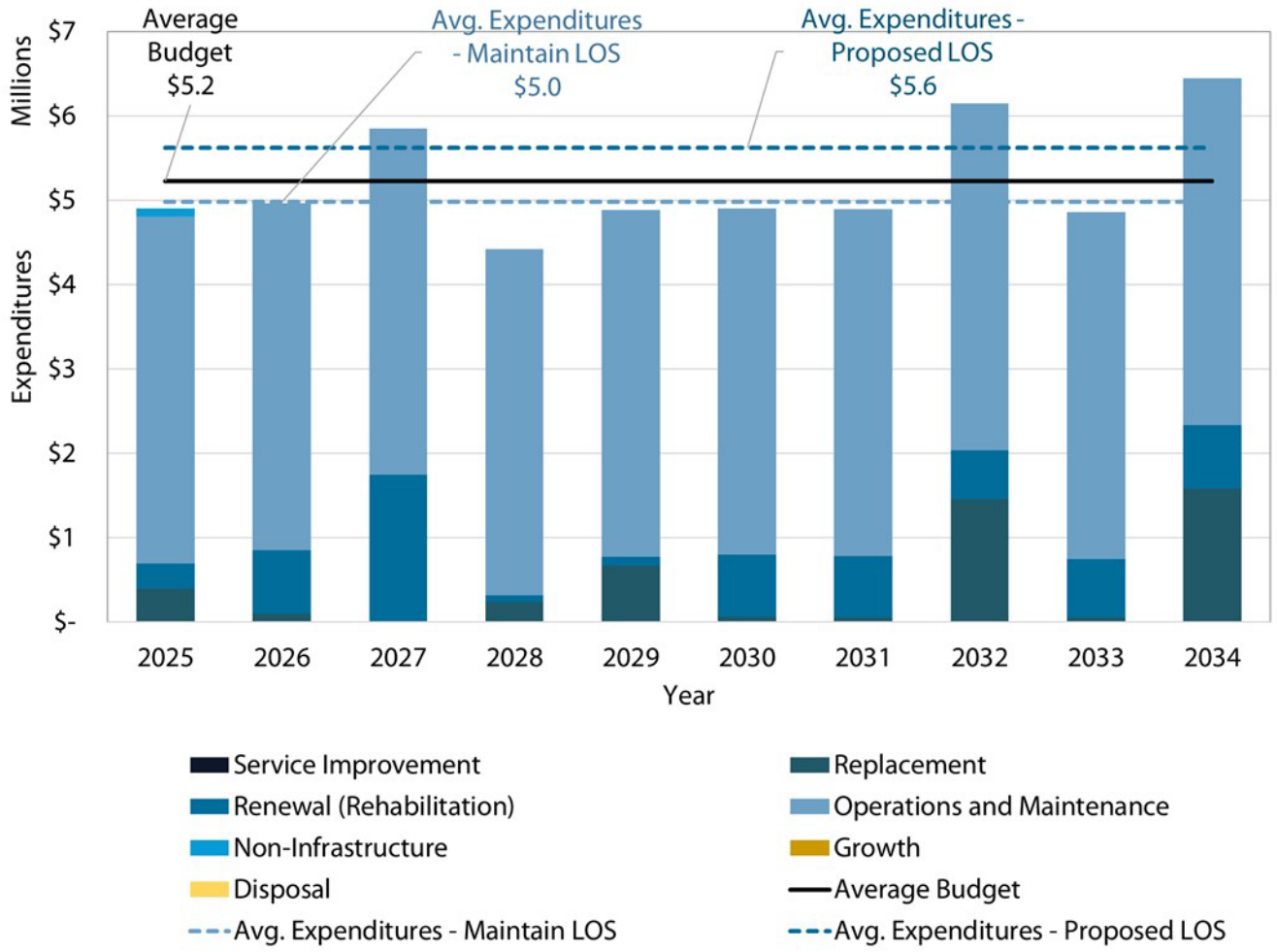
It was determined that an average annual budget of $1.5M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Corporate Facilities Assets with a capital funding gap of $396K.

This scenario offers the most optimal outcomes for facilities. From 2025 onward, assets are maintained primarily in the "Good" category, with a consistent share in "Very Good" condition as well. The proportion of assets rated as "Fair," "Poor," or "Very Poor" is minimal and decreases over time. By 2055, the system is characterized by a stable, high-performing asset base with a clear emphasis on

proactive maintenance and renewal. This condition profile demonstrates how the proposed level of service provides strong lifecycle management, significantly reducing long-term risks and costs associated with asset degradation.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 98 and Table 107, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 98: Corporate Facilities - Expenditure Scenario Comparison



The scenario comparison indicates that Corporate Facilities has an average annual total gap of $396K to achieve the proposed LOS. This gap is made up of the capital infrastructure gap. The total funding gap is outlined in Table 107. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize corporate facilities maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 107 shows that maintaining the current level of service requires $836K in average annual renewal, rehabilitation, and replacement investments, with no funding gap. Achieving the proposed level of service requires an average annual $1.5M for renewal, rehabilitation and replacement activities, as well as additional funding for service improvements, that are currently unfunded. In total, the proposed LOS average annual capital gap is $396K.

There is no estimated annual O&M (O&M) funding gap, based on the 10-year growth forecast and service levels. It is assumed to be sufficient in meeting both the current and proposed service levels. The City is in the process of completing a project to review all operations facility for outside service staff and equipment storage, which will identify need for facility renewal to support future growth for

the next 30 years. The project is expected to be complete later in 2025 identifying investment needs for renewal and replacement of various operations facilities and any requirements for new facilities.

Table 107: Corporate Facilities - Lifecycle Activity Investments & Average Annual Infrastructure Gap

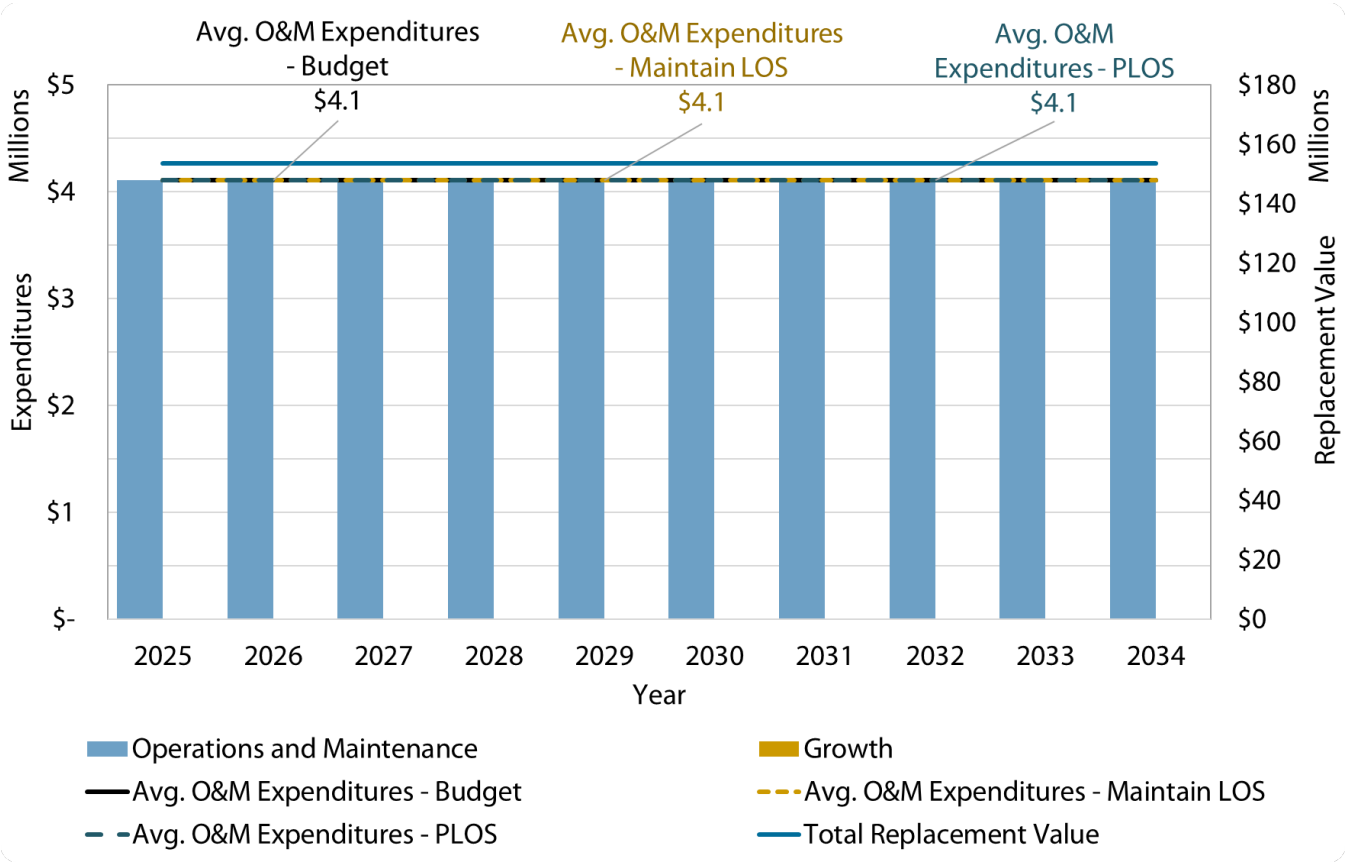
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$0	$0	$0
Non-Infrastructure	$10,000	$10,000	$10,000
Rehabilitation & Replacement	$1,107,618	$836,474	$1,480,000
Service Improvement	$0	$0	$24,000
Total Capital Expenditures	$1,117,618	$846,474	$1,514,000
Capital Infrastructure Gap		No Gap[11]	$396,382
Operations & Maintenance	$4,108,000	$4,108,000	$4,108,000
Operations & Maintenance Gap		$0	$0
Total Expenditures	$5,225,618	$4,954,474	$5,622,000
Total Funding Gap		**No Gap[11]**	**$396,382**
Gap as Percentage of Replacement Value		**No Gap[11]**	**0.26%**

The growth and O&M expenditures shown in Figure 98 are shown in greater detail in Figure 99, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As no capital growth expenditures were forecast for Corporate facilities, no increases in O&M have been identified. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost.

[11] "No Gap" indicates that capital and/or operating funding associated with the LOS scenario is achievable with the available budget

Figure 99: Corporate Facilities - Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

I.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Corporate Facilities assets are provided in Table 108.

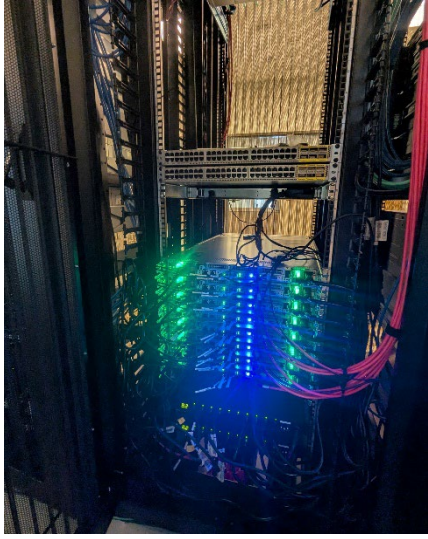
Table 108: Corporate Facilities – Data Confidence

Asset Class	Data Source	Data Confidence
Corporate Facilities	GIS Database	Medium

Opportunities for improvement include:

Corporate Facilities

- All asset classes would benefit from full condition assessments where appropriate to determine component level condition, estimated service lives and replacement values. This will provide an overall more accurate and reliable asset register and expenditure forecast.



Appendix J

Information and Communication Technology Infrastructure Asset Management Plan

J.1 Introduction

The City maintains a portfolio of assets that support and enable all of the services that we, and our partners, provide for the benefit of residents.

Table 109: Information and Communication Technology Infrastructure Assets

Asset Class	Hardware	Software
Asset Type	• Backup Infrastructure and Software • Desktops • iPads • Laptops • Mobile Phones • Security Infrastructure • TVs • VOIP Infrastructure • Server, Storage, Network, etc.	• All of the software owned and managed by the City including Class POS Payment Systems, Databases, GIS, work management systems, etc. • Corporate Website

This collection of assets is critical to the City as it is what makes us operational. Information and communication technologies are what drive efficiency through greater insight into asset performance, effective communication, and data storage and analysis. If it were not for these assets, we would not be able to provide the services that we do today; nor would we be able to achieve our vision for the future.

This appendix outlines our plan to manage our portfolio of assets relating to Information and Communication Technology Infrastructure assets over the next 10 years, demonstrating our commitment to meeting the LOS valued by our residents, as efficiently as possible.

J.1.1 Strategic Connections

The following strategic and master plans related to information and communication technology assets were considered while developing this AMP.

Table 110: Information and Communication Technology - Strategic Connections

Document	Strategic Connection
Asset Management Plan Documents	Provides long-term planning for IT infrastructure lifecycle management, upgrades, and cybersecurity measures.
Annual Business Plan	Outlines IT service delivery priorities, including cybersecurity, system upgrades, and digital transformation initiatives.
Proposed Capital Investment Plan	Allocates funding for IT infrastructure upgrades, including servers, networking, cybersecurity, and software systems.
Operating Budget & Forecast	Covers ongoing IT operational costs, including software subscriptions, hardware maintenance, and system security.
Climate Adaptation Plan	Ensures IT infrastructure resilience against climate risks, such as extreme weather affecting data centers and communications systems.
Multi-Year Accessibility Plan	Ensures IT assets comply with accessibility standards, including accessible websites, digital services, and assistive technologies.
Cambridge Connected Strategic Plan	Aligns IT investments with citywide priorities for innovation, digital transformation, and cybersecurity.
Region of Waterloo Strategic Plan	Supports regional IT initiatives, including shared data systems, smart city technology, and digital service improvements.
Development Charges Background Study	Identifies how IT infrastructure costs for new developments, such as smart city technology, are funded through development charges.

J.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 111: Information and Communications Technology - Key Considerations

Type	Considerations
 Climate Risk	• Severe weather events might interrupt IT infrastructure services (cloud, remote, etc.)

Type	Considerations
 Climate Adaptation	• Incorporate back-up systems / procedures
 Climate Mitigation	• No significant Interests
 Heritage Interest	• No significant Interests
 Accessibility Interest	• Consideration during the replacement, upgrades and implementation of new IT system and website content compliance to the World Wide Web Consortium (W3C)'s Web Content Accessibility Guidelines(WCAG) 2.0 Level AA.

J.2 State of Infrastructure

J.2.1 Overview

Our information and communication technology assets are central to our ability to provide municipal services. While not as prominent as our core assets, we would not be able to inspect, manage, maintain, plan, and communicate without these.

We recognize that the efficiency and value we can derive from our information and communication technology assets extends into all other portfolios, which is what makes them particularly important.

Table 112: Information and Communication Technology Infrastructure Overview

Replacement Value ('000s)	Condition	Asset Class
$27,323 Total replacement value of all assets within the information & communication technology infrastructure asset class.	Very Good Weighted average condition rating of information & communication technology infrastructure assets across all subclasses.	Two Distinct asset classes that we manage as a part of our information and communication technology infrastructure.

J.2.2 Asset Class

Table 113: Information and Communication Technology Asset Class Overview

Hardware	Software
• 92 Desktops • 315 iPads • 430 Laptops • 343 Mobile Phones • Security Infrastructure • 50 TVs • VOIP Infrastructure	• All of the software owned and managed by the City including Class POS Payment Systems, Databases, GIS, work management systems, etc. • Corporate Website

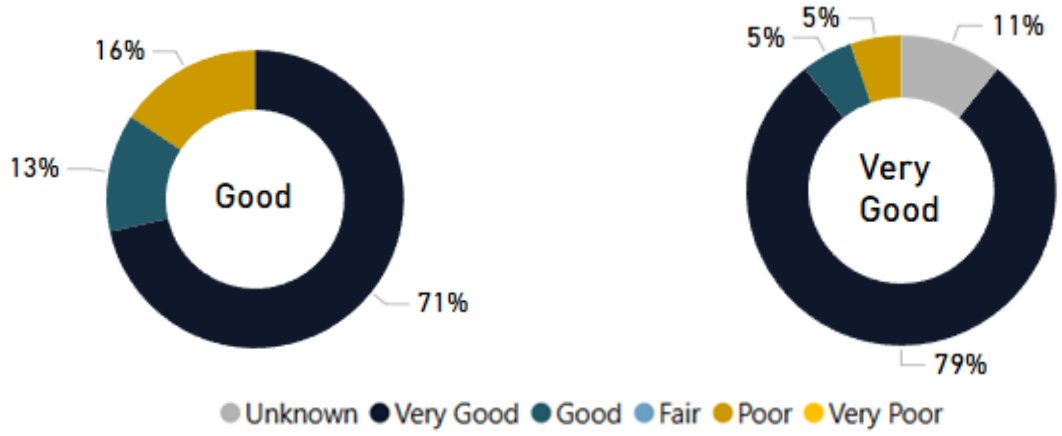


Figure 100: Information and Communication Technology Asset Class Condition Breakdown by Replacement Value

Hardware

Replacement Value ('000s)

$8,573

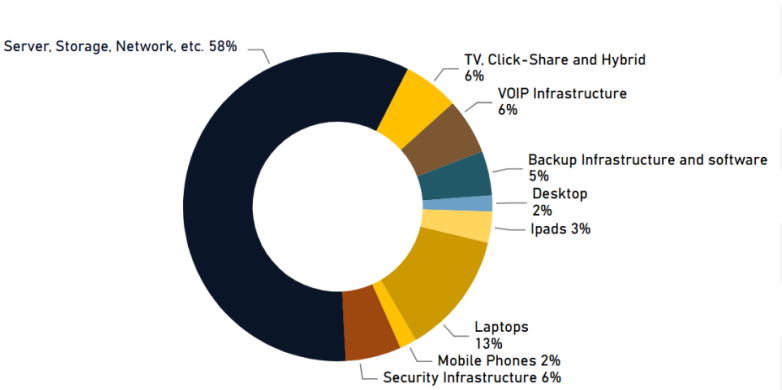
Weighted Avg. Condition Rating

Good

Average Age

N/A

Figure 101: Hardware (% Replacement Value)



Software

Replacement Value ('000s)

$18,750

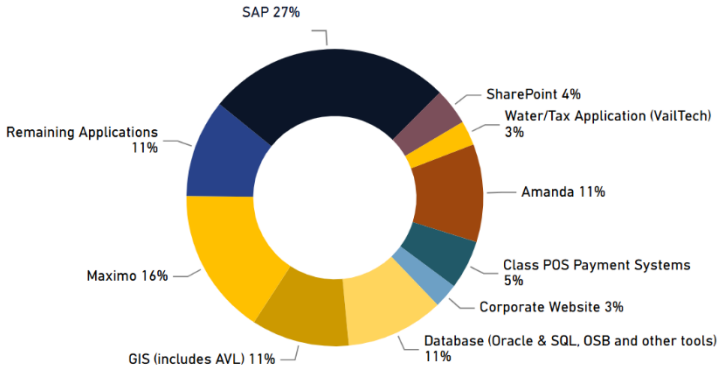
Weighted Avg. Condition Rating

Very Good

Average Age

N/A

Figure 102: Software (% Replacement Value)



Age of Information and Communication Technology assets is currently unknown. The assets are reported as a pool (or grouping) of assets.

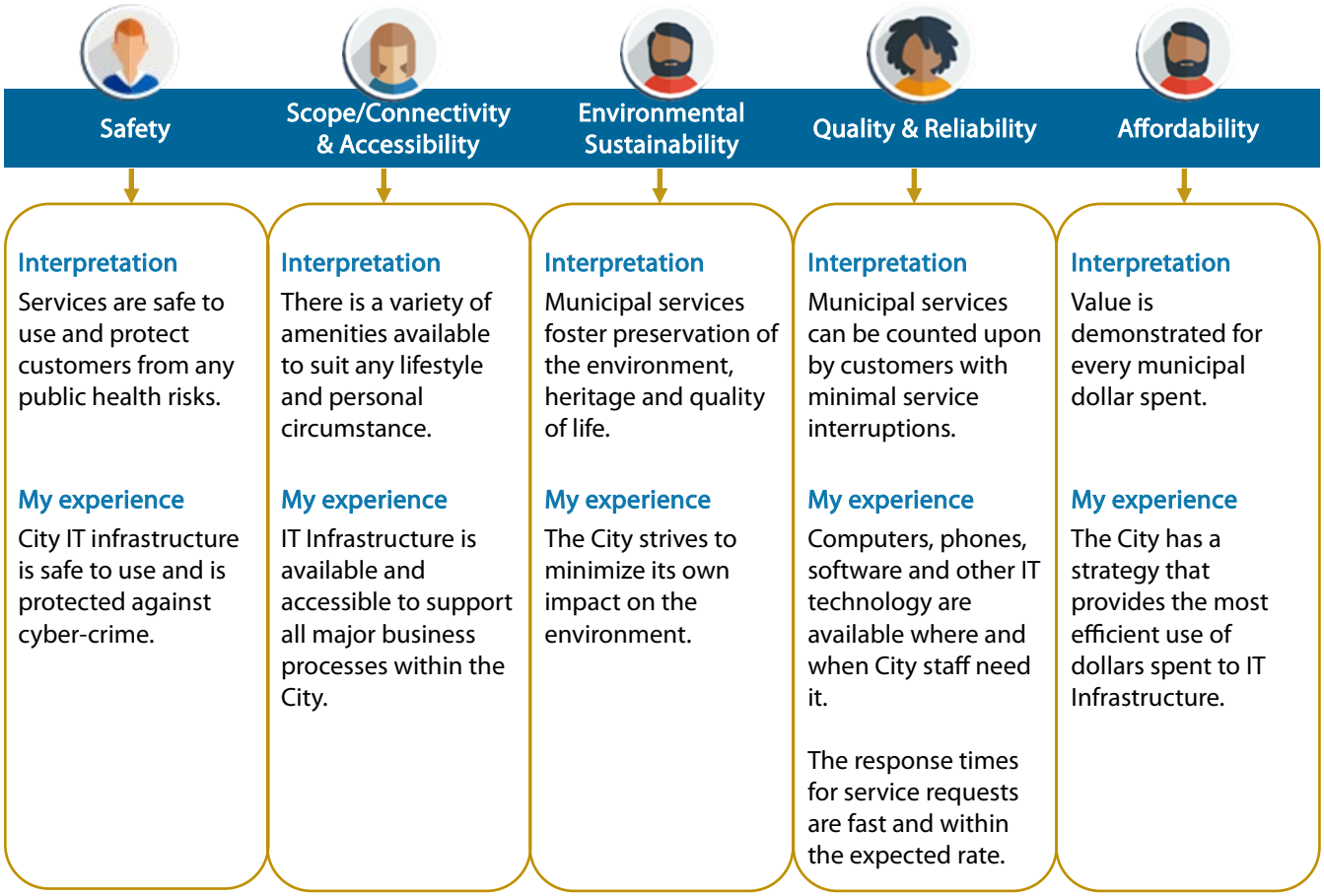
J.3 Levels of Service

J.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of information and communication technology infrastructure assets, we have identified the concerns and priorities of our, mainly internal, stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support our IT master plans related to digital transformation, data management, and smart city initiatives.

Figure 103: Information and Communication Technology Infrastructure LOS Framework



With the identification of stakeholder-informed information and communication technology infrastructure priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

J.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, information technology assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided. These levels of service are outlined below in Table 114.

Table 114: Information and Communication Technology Infrastructure – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement value of Information and Communication Technology assets rated "Very Poor"(or "Poor")	8.59%	9.12%
Quality & Reliability	Operations and maintenance spending as a percentage of the replacement value of Information and Communication Technology assets	37.51%	45%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 115: Information and Communication Technology Infrastructure – Key Performance Indicators (KPI)

Key Service Attribute	Performance Measure	Current LOS
Scope / Connectivity & Accessibility	Number of service/support requests (excluding enhancements and projects)	11, 074
Scope / Connectivity & Accessibility	Tickets per IT employee	316
Quality & Reliability	Percentage of corporation satisfaction with the reliability and functionality of applications and business systems (based on 2023 Staff Survey)	85%
Quality & Reliability	Percentage of end-user devices within determined lifecycles	80%

Key Service Attribute	Performance Measure	Current LOS
Quality & Reliability	Percentage of service desk calls resolved within 24 hours	36%
Quality & Reliability	Percentage of total resolved incidents/service request versus new created per year	99%
Quality & Reliability	Number of help desk requests per City employee per year	10

J.4 Asset Lifecycle Management Strategy

The City performs the following lifecycle activities on its information and communication technology assets to maintain assets in a state of good repair and provide the appropriate levels of service. The different lifecycle activities are shown below.

Table 116: Lifecycle Activities – Information and Communication Technology

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Corporate Technology Strategic plan	All	As required
Stakeholder engagement to understand community needs	All	As required
Development Charges Study Report to determine needs	All	5 years
Operations and Maintenance		
Unplanned maintenance activities, such as resolving service requests	All	As required
Planned maintenance activities, such as scheduled minor software and hardware upgrades, software/hardware maintenance and/or support contracts.	All	As required
Rehabilitation and Renewal		
Replacement of hardware such as phones, tablets, laptops, servers, etc.	All	As required; replacement schedule
Replacement or major updates of software applications	All	As required; replacement schedule

Description	Asset	Frequency
Growth and Service Enhancement		
Implementation of new additional software / technology applications to support evolving or new business processes	All	As required
Disposal		
Disposal activities related to replacement	All	As required

J.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

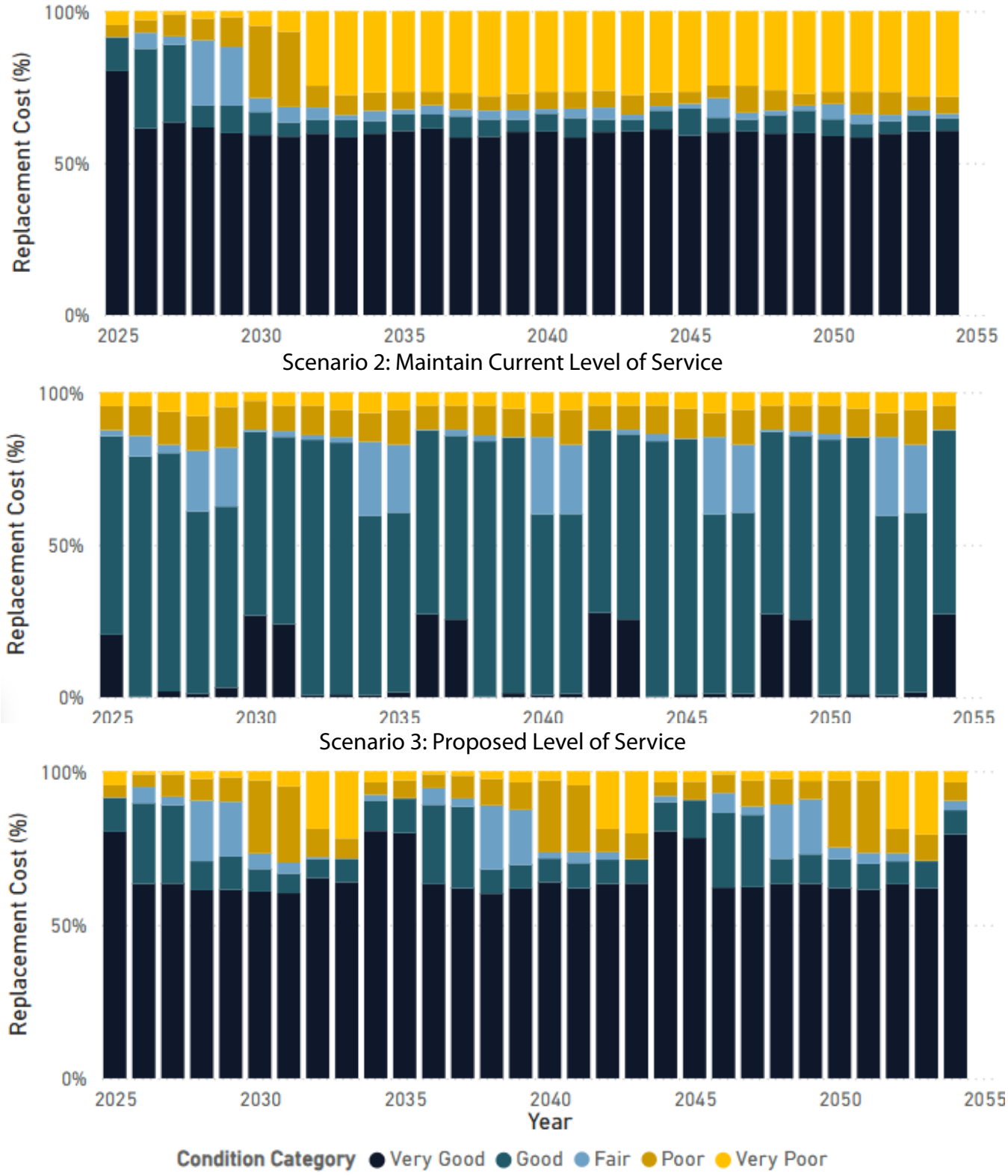
This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 104. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 104: Information Technology - Condition Profiles for Service Level Scenarios



Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $858K. The condition distribution for the anticipated funding scenario is shown in Figure 104. Overall condition decreases in this scenario.

Under the current funding scenario, the overall condition of IT assets shows a steady dominance of assets in the "Very Good" category, which consistently comprises the majority of the asset base through to 2055. However, there is a visible and gradual increase in assets classified as "Poor" and "Very Poor" particularly in the later years (2040s to 2055), indicating that without increased funding, a small but significant portion of the IT infrastructure will deteriorate. The "Good" and "Fair" categories remain relatively modest in proportion, and the growing lower-condition segments highlight a risk of declining performance over time.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $1.4M for renewal, rehabilitation and replacement activities is needed to maintain performance for Information and Communication Technology Infrastructure Assets with a capital funding gap of $513K. The performance forecast for scenario 2 is shown in Figure 104.

This scenario shows a more stable long-term outlook for IT assets. The proportions of assets in "Good" condition are preserved over time, with minimal long-term decline. The "Good" condition category remains dominant throughout the 30-year period, showing stability and confirming that assets are being kept at a reliable standard. The share of assets in "Fair" fluctuate throughout the 30-year period. Notably, assets in "Poor" and "Very Poor" condition grow only slightly, indicating that funding is adequate to sustain the existing level of service and avoid major deterioration. Overall, this scenario reflects a balanced asset condition profile with moderate reinvestment, effectively preventing the accumulation of critical condition assets.

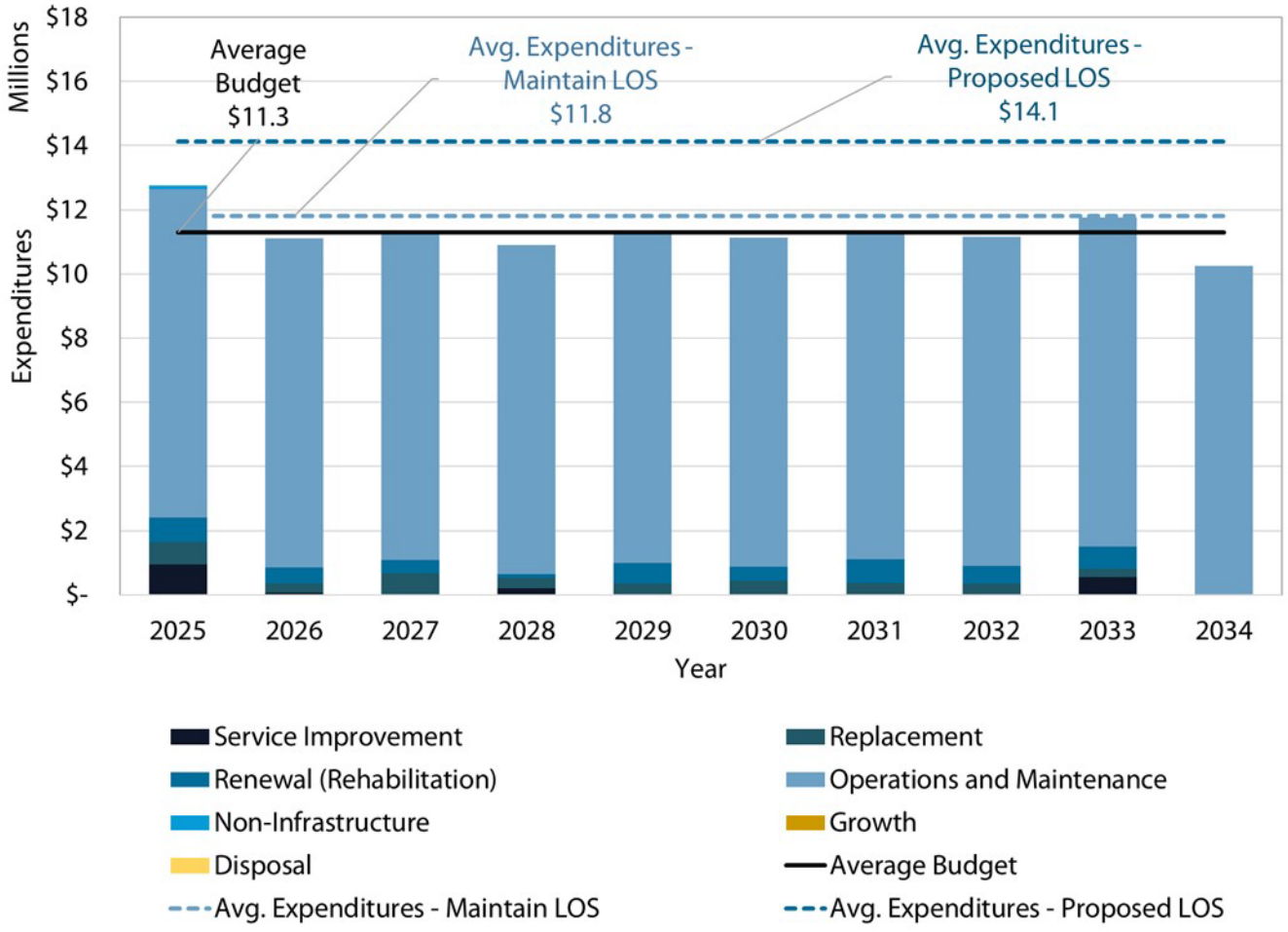
Scenario 3 – Proposed Level of Service

It was determined that an average annual budget of $1.6M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Information and Communication Technology Infrastructure Assets with a capital funding gap of $779K.

The proposed service level scenario leads to the strongest overall condition outcome. A large and sustained proportion of assets remain in the "Very Good" condition through to 2055. While some "Fair," "Poor," and "Very Poor" categories persist, they are kept to relatively low levels, and their proportions remain stable rather than growing. This suggests that the proposed investment strategy is effective in both maintaining service levels and minimizing deterioration across the IT asset portfolio. It's the most proactive approach, aiming to optimize lifecycle outcomes and avoid the long-term risks seen in the other scenarios.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 105 and Table 117, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 105: Information Technology - Expenditure Scenario Comparison



The scenario comparison indicates that Information Technology has an average annual total gap of $2.8M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $779K, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 117. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future

budget allocations, prioritize Information Technology maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 117 shows that maintaining the current level of service requires $1.4M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $513K. Achieving the proposed level of service requires an average annual $1.6M for renewal, rehabilitation and replacement activities. In total, the proposed LOS average annual capital gap is $779K.

An average annual O&M gap of $2.0M is estimated. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 117: Information and Communication Technology - Lifecycle Activity Investments & Average Annual Infrastructure Gap

Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$0	$0	$0
Non-Infrastructure	$10,000	$10,000	$10,000
Rehabilitation & Replacement	$857,500	$1,370,172	$1,636,709
Service Improvement	$177,500	$177,500	$177,500
Total Capital Expenditures	$1,045,000	$1,557,672	$1,824,209
Capital Infrastructure Gap		$512,672	$779,209
Operations & Maintenance	$10,250,100	$10,250,100	$12,295,573
Operations & Maintenance Gap		$0	$2,045,473
Total Expenditures	$11,295,100	$11,807,772	$14,119,782
Total Funding Gap		**$512,672**	**$2,824,682**
Gap as Percentage of Replacement Value		**1.88%**	**10.34%**

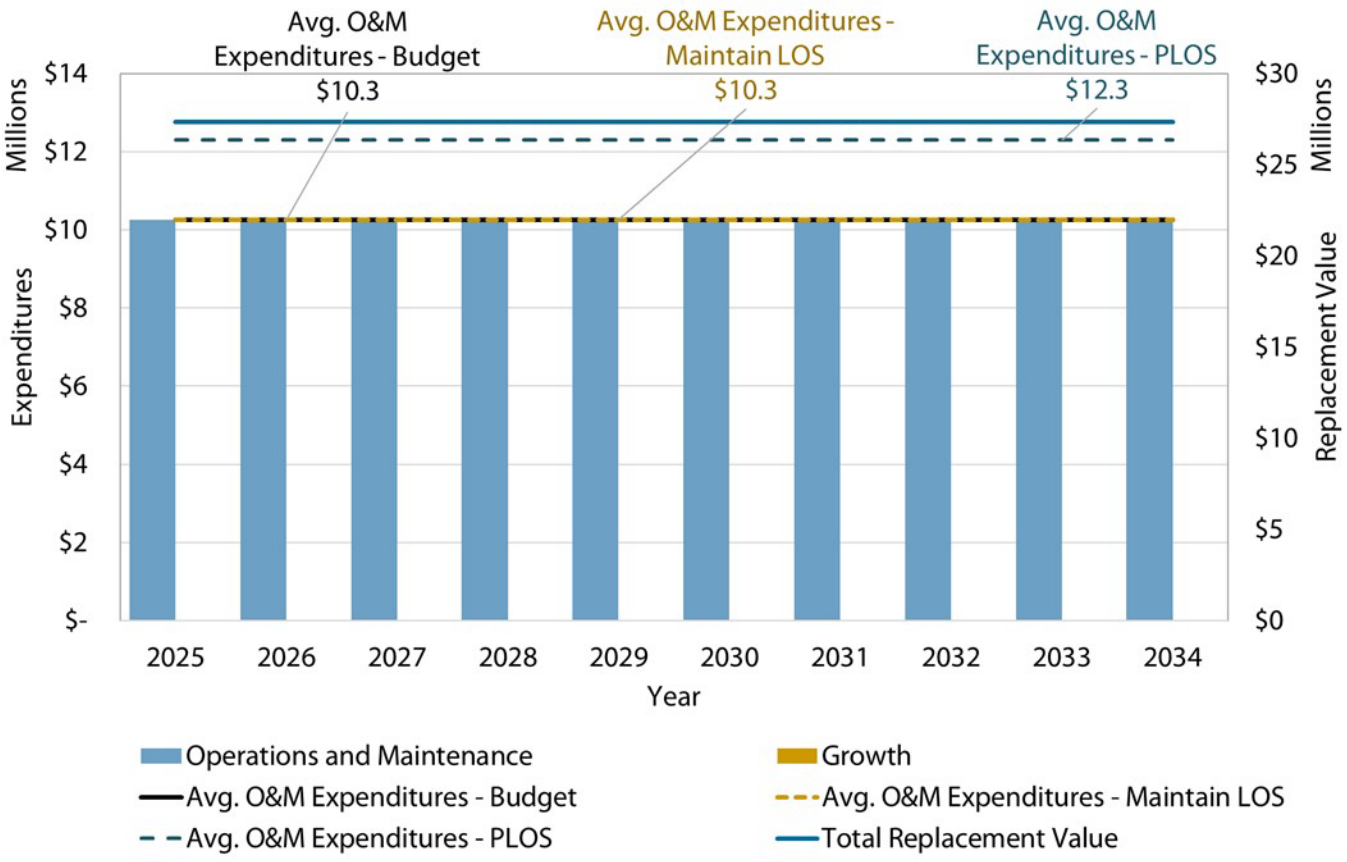
The O&M expenditures shown in Figure 105 are shown in greater detail in Figure 106, which estimates the annual funding required for O&M. For the proposed LOS, the increase in expenditures required for O&M were estimated to account for the additional fees required for software applications which have moved, or will be moved, to cloud-based services.

Many of our services (20+) are now cloud-based platforms, and many more are planned over the next few years. As such, many of these services are now subscription-based rather than a one-time

purchase. One example of this is SAP. Pre-cloud SAP maintenance and support was $380,000 per year. It is now in excess of $800,000 annually. Another example is Adobe. Previously, we could purchase Adobe licenses as a one-time fee and extend the life of those licenses as long as support was provided. These have now skyrocketed to $65,000 annually for Adobe services.

As we continue to move services (subscriptions, support and maintenance) to the cloud for a variety of reasons including improved security (and sometimes due to the vendor only providing cloud services going forward), we will continue to see increased costs. We will soon be moving Maximo, GIS, Payment system, Amanda, CRM, integration services, and many more, to the cloud. Part of this transition is also to move our data centre to the cloud, which will incur yearly maintenance and subscription fees (as opposed to large purchases of data centre hardware and storage as needed). In addition to the expected increases to service costs, we also have a growing need and dependency on technology for the entire City. This also creates additional costs over the ten year period.

Figure 106: Information and Communication Technology - Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

J.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Information and Communication Technology Infrastructure assets are provided in Table 118.

Table 118: Information and Communication Technology Infrastructure – Data Confidence

Asset Class	Data Source	Data Confidence
Hardware	IT Services	Medium
Software	IT Services	Medium

Opportunities for improvement include:

- Hardware assets are currently based on pooled assets, rather than distinct asset counts. It is recommended that the City develop an improved asset register, to better plan for these assets.
- Major software platforms are accounted for on the list, but the replacement value and condition of these assets are not well understood. It is recommended to develop a full application/software list and track the ongoing costs of these applications to better understand the needs.

Appendix K

Fleet & Equipment Asset Management Plan

K.1 Introduction

The City maintains a portfolio of assets that support and enable all of the services that we, and our partners, provide for the benefit of residents.

Table 119: Fleet & Equipment Assets

Asset Class	Fleet Vehicle	Equipment	Shop Equipment & Tools
Asset Type	• Fleet Vehicles (e.g. vans, trucks, tractors, etc.) • Electric Vehicles • Leased Vehicles	• Various equipment types (e.g. tools, trailers, generators, etc.)	• Shop Tools • Lifting Devices

This collection of assets is critical to the City as it is what makes us operational. Our Fleet & Equipment are what enable municipal employees to move around to inspect and maintain our assets. If it were not for these assets, we would not be able to provide the services that we do today; nor would we be able to achieve our vision for the future.

The City leases approximately 20 vehicles. These vehicles, while listed in this AMP as they support City staff to provide services, are not included in the replacement value of the service or the required expenditures for replacements. These vehicles, and their cost for lease payments and maintenance are identified as an operational and maintenance expense within this AMP.

This appendix outlines our plan to manage our portfolio of assets relating to Fleet & Equipment over the next 10 years, demonstrating our commitment to meeting the LOS valued by our residents, as efficiently as possible.

K.1.1 Strategic Connections

The following strategic and master plans related to Fleet & Equipment assets were considered while developing this AMP.

Table 120: Fleet & Equipment - Strategic Connections

Document	Strategic Connection
Master Plans	Some master plans, such as transportation or energy management, likely include fleet-related policies and initiatives.
Asset Management Plan Documents	Provides long term planning and historical context for fleet asset management.
Annual Business Plan	Links to fleet budgeting, performance tracking, and operational planning within the city's service delivery framework.
Proposed Capital Investment Plan	Fleet assets included in capital planning, with budget forecasts detailing fleet replacements, expansions, and maintenance funding.
Operating Budget & Forecast	Fleet maintenance, fuel, and operational costs are considered in budgeting to ensure service continuity.
Climate Adaptation Plan	Fleet vehicles may need adaptation strategies, such as transitioning to low-emission or electric vehicles to meet sustainability goals.
Energy Conservation and Demand Management Plan	Guides efforts to reduce energy consumption in fleet through alternative fuel vehicles.
Green Fleet Strategy	As a follow up study to the Energy Conservation and Demand Management Plan, this document encourages reduction in greenhouse gas (GHG) emissions from the city's vehicle fleet by transitioning to electric vehicles and other low-carbon technologies.

K.1.2 Key Considerations

Throughout the development of this plan, a number of considerations were taken into account related to climate change, heritage interests, and accessibility. These considerations are outlined below.

Table 121: Fleet & Equipment - Key Considerations

Type	Considerations
 Climate Risk	• Rising temperatures (periods of extreme heat) • Severe storms; flash flooding
 Climate Adaptation	• Adapt fleet to changing operational processes within the service areas
 Climate Mitigation	• Reduce fossil fuel requirements for fleet vehicles and equipment; use alternative fuels such as electrical, hydrogen as per the Energy Conservation and Demand Management Plan and Green Fleet Strategy
 Heritage Interest	• No Heritage Interests
 Accessibility Interest	• Vehicle specific accessibility modifications as required and feasible

K.2 State of Infrastructure

K.2.1 Overview

Our Fleet & Equipment assets are central to our ability to provide municipal services. While not as prominent as our core assets, we would not be able to inspect, manage, maintain, plan, and communicate without these. We recognize that the efficiency and value we can derive from our Fleet & Equipment assets extends into all other portfolios, which makes them particularly important.

Table 122: Fleet & Equipment Overview

Replacement Value ('000s)	Condition	Asset Class
$44,897	Good	Three
Total replacement value of all assets within the fleet & equipment asset class.	Weighted average condition rating of fleet & equipment assets across all subclasses.	Distinct asset class that we manage as a part of our municipal fleet & equipment portfolio.

K.2.2 Asset Class

Table 123: Fleet & Equipment - Asset Class Overview[12]

Fleet Vehicles	Equipment	Shop Equipment & Tools
• 241 Fleet Vehicles • 14 Electric Fleet Vehicles	• 321 Equipment Assets	• Assorted Shop Tools and Lifting Devices

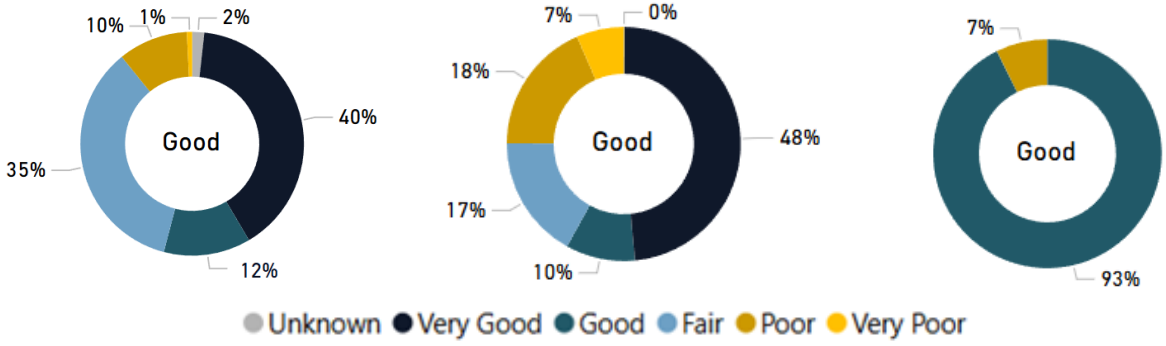


Figure 107: Fleet & Equipment - Asset Class Condition Breakdown by Replacement Value

[12] Fleet Vehicles and Equipment approved for replacement are accounted for in the State of Infrastructure. Due to supply chain issues and increased delivery times, assets in "Very Poor" condition remain in operation until replacements arrive.

Fleet Vehicle

Replacement Value ('000s)

$37,908

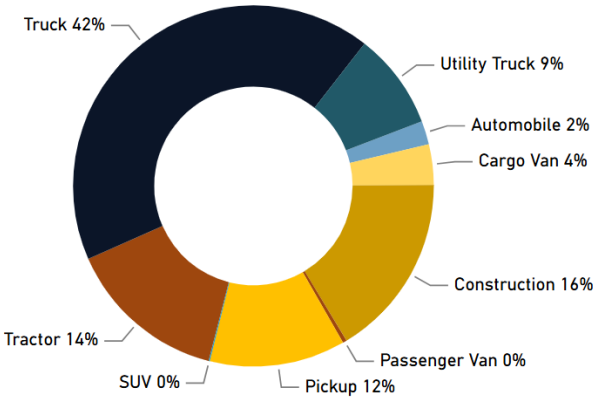
Weighted Avg. Condition Rating

Good

Average Age

8 Years

Figure 108: Fleet Vehicle (% Replacement Value)



Equipment

Replacement Value ('000s)

$6,579

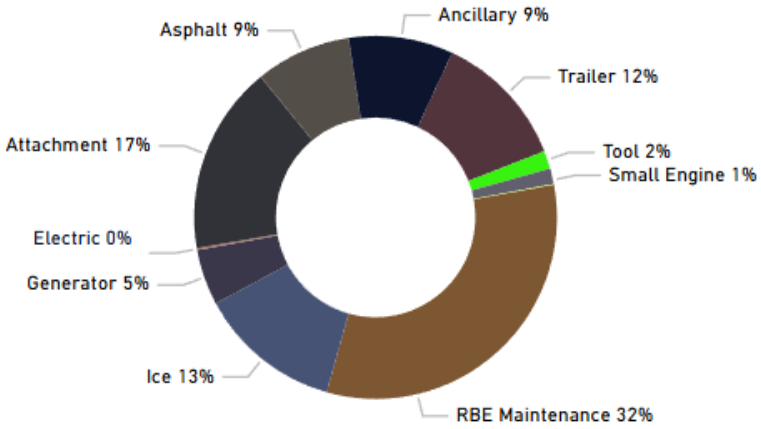
Weighted Avg. Condition Rating

Good

Average Age

7 Years

Figure 109: Equipment (% Replacement Value)



Shop Equipment & Tools

Replacement Value ('000s)

$410

Weighted Avg. Condition Rating

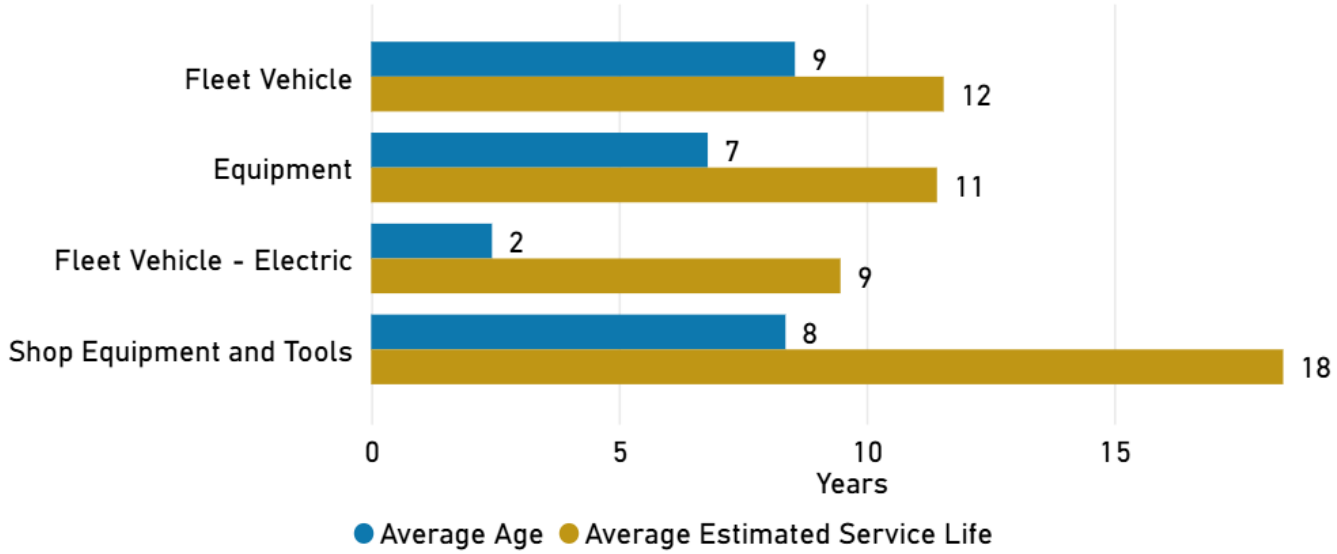
Good

Average Age

8 Years

Figure 110: Shop Equipment & Tools (% Replacement Value)

Figure 111: Fleet & Equipment – Age and Estimated Service Life



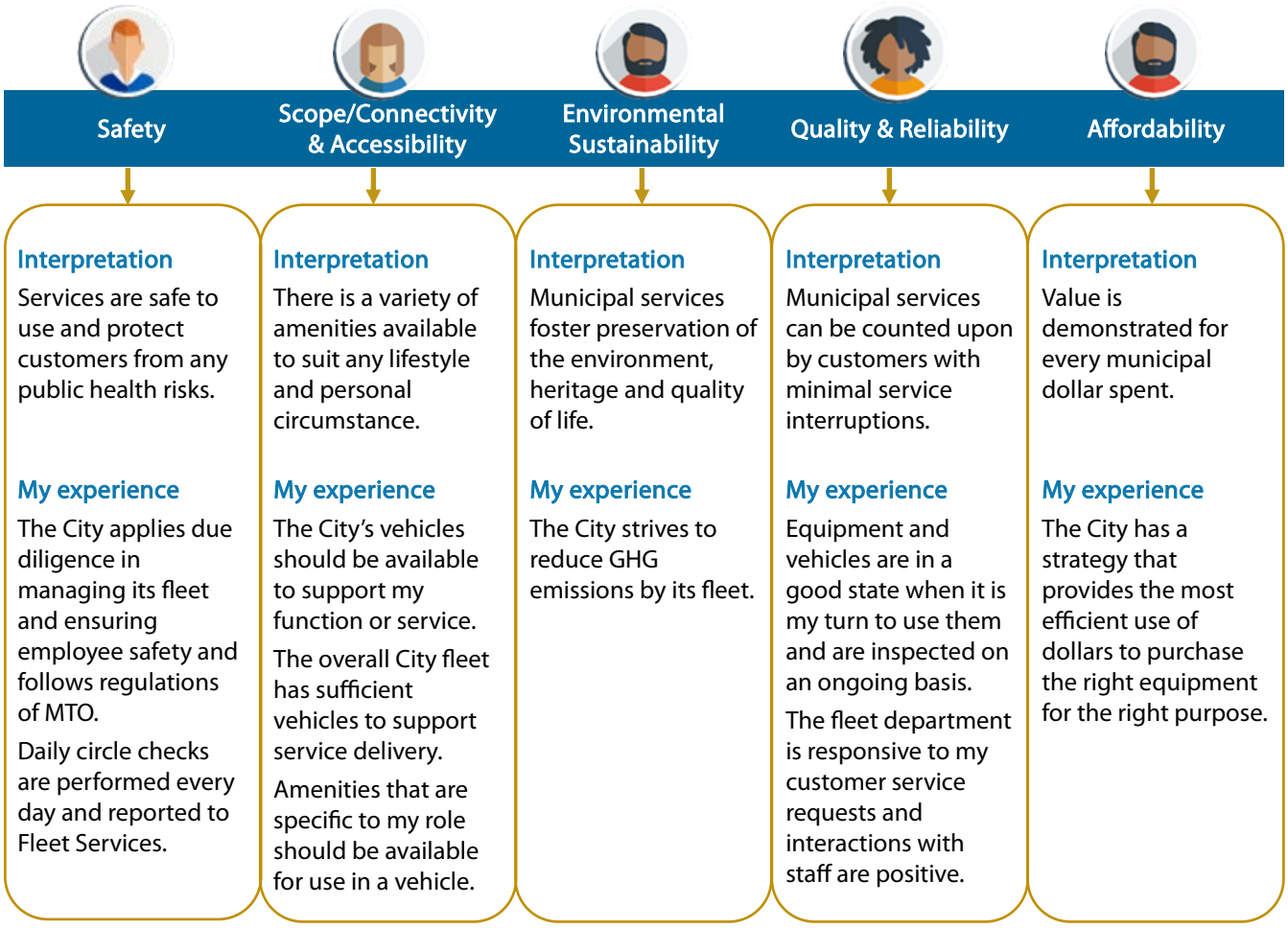
K.3 Levels of Service

K.3.1 Level of Service Framework

We have developed a Level of Service framework that fully aligns our strategic objectives with LOS expected by customers, and technical metrics to determine whether our assets are achieving those expectations.

The starting point for this exercise was the identification of our community priorities aligned to our strategic outcomes. The definitions for these priorities are provided in the main body and are referenced in the interpretation sections in the graphic below. We further this concept within each asset area by identifying the unique concerns of the community with regard to the asset. In the case of Fleet & Equipment assets, we have identified the concerns and priorities of our stakeholders in the "My Experience" headings below, from stakeholder feedback through everyday operational responses and dedicated feedback channels such as the engagement undertaken to support some master plans, such as transportation or energy management, likely include fleet-related policies and initiatives.

Figure 112: Fleet & Equipment LOS Framework



With the identification of stakeholder-informed Fleet & Equipment priorities, we have developed a series of technical measures designed to monitor performance of these priority community LOS.

K.3.2 Current and Proposed Levels of Service

Under O.Reg.588/17, Fleet & Equipment assets are classified as non-core assets and therefore have no prescribed LOS metrics. However, we have developed a set of metrics to support Council's future LOS decisions, operational needs, and long-term planning decisions. For each metric, the current performance and the proposed future performance have been provided.

These levels of service are outlined below in Table 124.

Table 124: Fleet & Equipment – Technical Levels of Service

Service Attribute	Performance Measure	Current LOS	Proposed LOS
Quality & Reliability	Percentage of replacement value of Fleet assets rated "Very Poor"(or "Poor")	12.87%	15.13%
Affordability	Operations and maintenance spending as a percentage of the replacement value of Fleet & Equipment assets	10.34%	10.34%

In addition, the City tracks the following Key Performance Indicators (KPI) to better understand current service levels.

Table 125: Fleet & Equipment – Key Performance Indicators (KPI)

Key Service Attribute	Performance Measure	Current LOS
Quality & Reliability	Average Age of Fleet Vehicles - Heavy Vehicles (years)	7.6
Quality & Reliability	Average Age of Fleet Vehicles - Light Vehicles (years)	5.1
Quality & Reliability	Percentage of Fleet Vehicles with extended service life	15%
Quality & Reliability	Annual number of vehicles being replaced early due to rust/corrosion, excessive mileage, mechanical condition.	3
Environmentally Sustainable	Percentage of Light Fleet Vehicles Electric or Hybrid	13%
Safety	Percentage of CVOR vehicles compared to total Fleet	33%
Quality & Reliability	Fleet downtime and its impact on service delivery	Future

K.4 Asset Lifecycle Management Strategy

Recognizing that Fleet & Equipment currently have no spare units available, which heightens the need to keep existing assets in "Good" condition to maintain service levels. To support this, the City carries out the following lifecycle activities on its Fleet & Equipment assets to ensure they remain in a state of good repair and meet service expectations. The different lifecycle activities are shown below.

Table 126: Lifecycle Activities – Fleet & Equipment

Description	Asset	Frequency
Non-Infrastructure Solutions		
Developing Fleet Services Master Plan and other strategic plans	All	As required
Development Charges Study Report to determine needs	All	5 years
Continuous ongoing Fleet operators safety training	All	As required
Operations and Maintenance		
Unplanned maintenance activities	All	As required
Planned maintenance activities- based on number of kms driven and seasonal conversion of vehicles and/or attachments	Fleet & Equipment	As per maintenance schedule
Daily inspections	Fleet	Daily
Annual commercial vehicle safety inspections	Fleet	Annually
Rehabilitation and Renewal		
Replacement of Fleet assets based on annual needs assessment	All	As required
Growth & Service Enhancement		
Acquisition of new additional Fleet items	Fleet	As required to accommodate growth
EV Charging infrastructure	Fleet	As required
Disposal		
Disposal activities related to replacement	All	As required
Decommissioning	All	As required

In addition to the lifecycle activities listed above the following procurement considerations were identified to carry out lifecycle strategies:

- Fleet assets should be ordered in advance of the designated replacement year to ensure timely delivery.
- Mowers and similar equipment, which have shorter lead times, can be ordered in the replacement year, while vehicles with longer lead times should be pre-ordered.

- Funding is allocated based on replacement years; however, budget planning should align with asset condition assessments to ensure timely orders.
- Assets should be ordered as soon as they reach a "Very Poor" condition rather than after exceeding their estimated service life.

K.5 Infrastructure Investment Needs

The lifecycle management strategies described above are used to plan work and determine future expenditure needs for fleet assets. These activities, along with the scenarios outlined below, provide a comprehensive forecast of expenditures required for managing infrastructure assets and ensuring the City can meet current levels of service and achieve proposed levels of service.

The investment forecast scenarios forecast scenarios below consider only renewal, rehabilitation and replacement lifecycle activity costs and needs. These lifecycle activities ensure infrastructure remains in a state of good repair and can continue to provide services to residents. For this AMP, the remaining lifecycle activities (non-infrastructure, service improvements, O&M, and growth) and their costs are informed by the City's capital and operating budgets. These activities and their cost are assumed to be enough to meet the community's expectations. This AMP does not provide an analysis on optimizing these activities and costs, with the exception of required expenditures for O&M to accommodate growth.

An overview of the scenarios that were evaluated for the purposes of this AMP include:

Scenario 1: Current Funding

This scenario forecasts the condition of the assets under the current funding level that the City anticipates allocating towards each asset category. The City's 2025 budget is used as the average spending for the 10-year forecast. This is used to illustrate the change in performance (condition) under anticipated funding levels. Only renewal, rehabilitation and replacement activities that fit within the current funding are included in the scenario outcomes.

Scenario 2: Maintain Current Level of Service

This scenario determines the approximate annual cost to maintain assets in a similar performance (condition) as their current state. This is used to determine the annual cost to provide the current level of service for the assets (as mandated by O.Reg. 588/17). For the purposes of this analysis, this is accomplished by determining the current percentage of assets in "Poor" to "Very Poor" and maintaining this level throughout the forecast period.

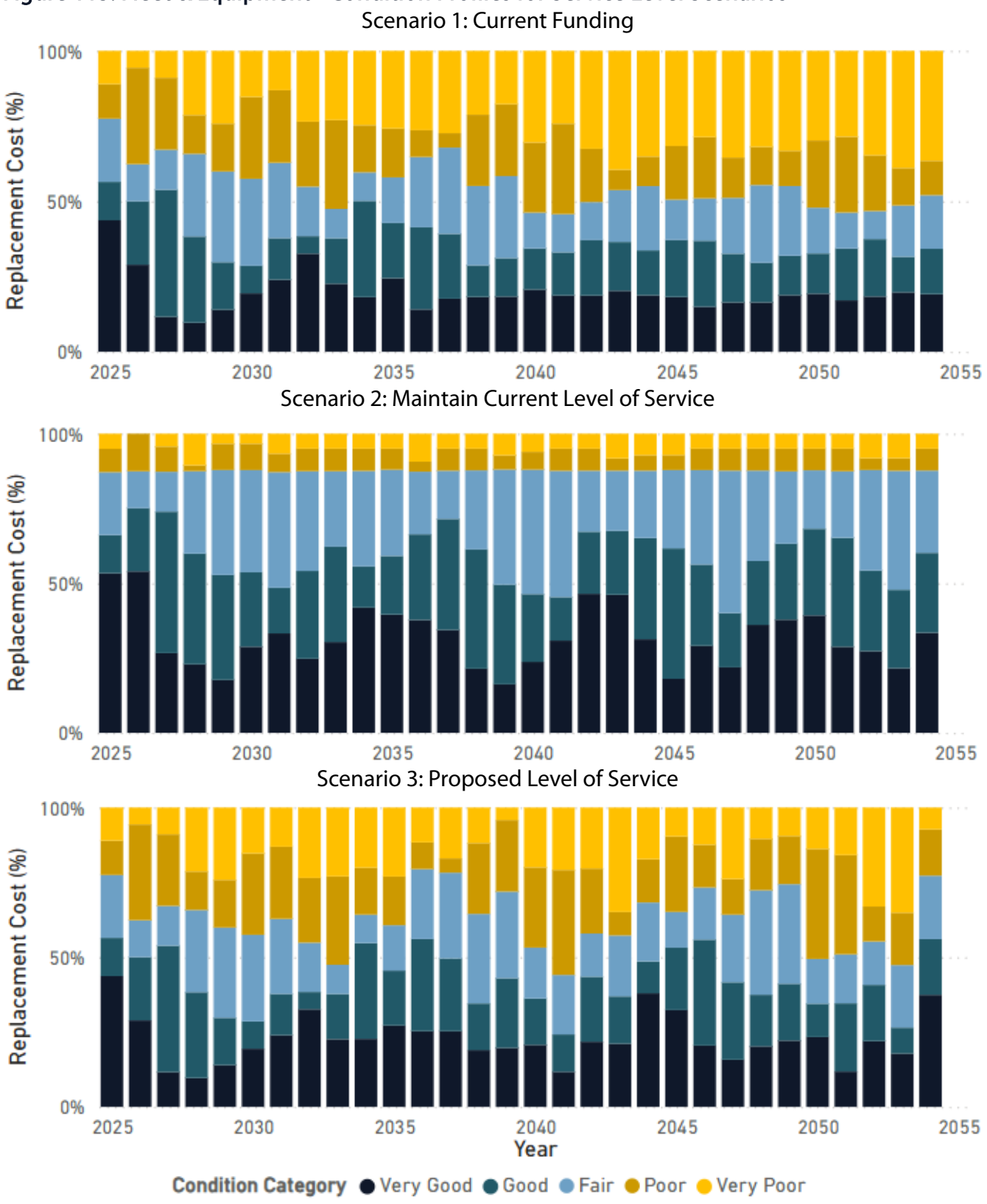
Scenario 3: Proposed Level of Service

This scenario determines the cost of lifecycle activities to achieve the asset category's proposed level of service. Proposed levels of service were developed in consultation with subject matter experts, asset management, financial service team, and the City's Corporate

Leadership Team. Factors to determine the appropriate proposed level of service included strategic priorities, risk, current condition, lifecycle costs and the associated impact to the condition of assets in Scenario 1 and 2, community expectations as approved by the Council through the various master plans, strategic priorities and best practice lifecycle strategies.

The impacts to the condition of the City's assets based on the scenarios described above can be found in Figure 113. The condition profiles provide an outlook of asset performance for 30 years, to understand the long-term impacts of the analysis scenarios. For the purposes of this AMP, the scenario comparison and infrastructure gap has only been evaluated for the next 10 years, as required by O.Reg. 588/17.

Figure 113: Fleet & Equipment - Condition Profiles for Service Level Scenarios



Scenario 1 - Current Funding

The anticipated average annual funding for renewal, rehabilitation and replacement activities for the Current Funding Scenario was determined to be approximately $3.2M. The condition distribution for the anticipated funding scenario is shown in Figure 113. Overall condition decreases in this scenario.

This scenario shows a declining trend in overall asset condition. Over time, the share of assets in "Poor" and "Very Poor" condition significantly increases, while the proportion of "Very Good" and "Good" condition assets declines. This suggests that under current funding levels, reinvestment is insufficient, leading to a buildup of assets in critical condition and growing lifecycle risk.

Scenario 2: Cost to Maintain Current Performance (Level of Service)

It was determined that an average annual budget of $5.4M for renewal, rehabilitation and replacement activities is needed to maintain performance for Fleet & Equipment Assets with a capital funding gap of $2.2M. The performance forecast for scenario 2 is shown in Figure 113.

This scenario demonstrates a more stable and sustainable asset condition. The proportions of "Good" and "Very Good" condition assets are relatively well maintained throughout the 30-year period. Meanwhile, assets in "Poor" and "Very Poor" condition remain low and consistent, indicating that funding is adequate to preserve the existing level of service and avoid significant deterioration. This scenario effectively balances reinvestment to maintain performance.

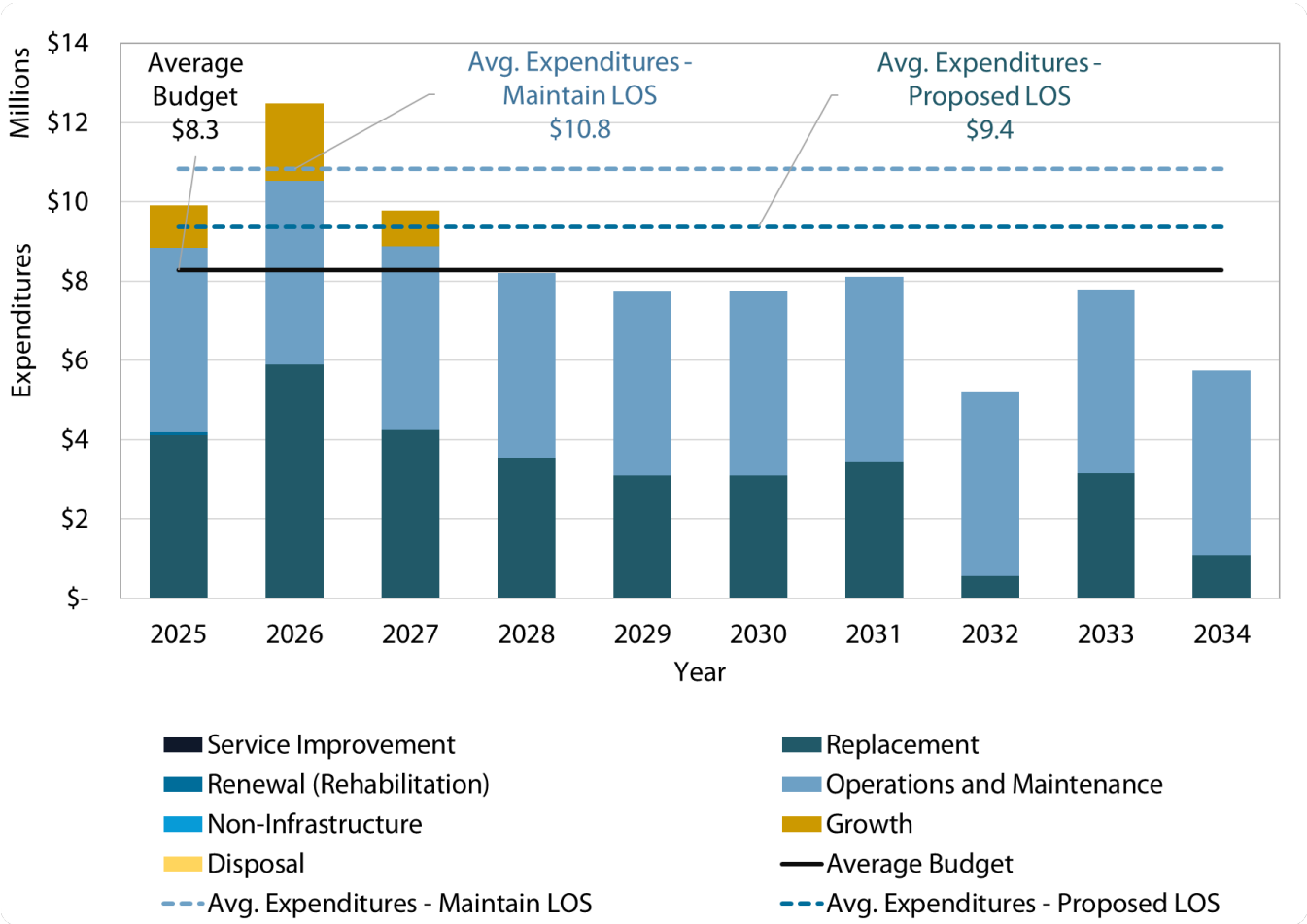
Scenario 3 – Proposed Level of Service

It was determined that an average annual budget of $4.0M for renewal, rehabilitation and replacement activities is needed to achieve the proposed levels of service for Fleet & Equipment Assets with a capital funding gap of $763K.

This scenario reflects a proactive and dynamic approach to asset management. While asset conditions fluctuate over time, there is a noticeable effort to improve and sustain assets in "Very Good" and "Good" condition. The strategy allows for targeted reinvestment at key intervals, which helps to mitigate long-term degradation. Despite some variation, the overall profile indicates that the proposed service level has the potential to elevate asset performance and reduce the risk of widespread deterioration when effectively managed over time.

By comparing the scenarios outlined above, City staff can gain a clearer understanding of how each one impacts asset conditions over the long term. When reviewed alongside Figure 114 and Table 127, which outline the required lifecycle expenditures and any associated funding gaps, this analysis is intended to support more informed decision making. The figure below illustrates the lifecycle activities captured in the capital and operating budgets, showing the average annual budget, maintain current LOS and proposed LOS. The infrastructure gap is identified by the difference between the average annual budget and the expenditure needed to achieve the current and proposed LOS.

Figure 114: Fleet & Equipment - Expenditure Scenario Comparison



The scenario comparison indicates that Fleet & Equipment has an average annual total gap of $1.1M to achieve the proposed LOS. This gap is made up of the capital infrastructure gap which is approximately $763K, and the O&M gap, which is discussed below.

The total funding gap is outlined in Table 127. Current capital and operating budgets are based on the approved 2025 figures. This analysis enables the City to make informed decisions on future budget allocations, prioritize Fleet & Equipment maintenance and replacement projects, and plan for the long-term sustainability of the infrastructure system.

Table 127 shows that maintaining the current level of service requires $5.4M in average annual renewal, rehabilitation, and replacement investments, with a capital funding gap of $2.2M. Achieving the proposed level of service requires an average annual $4.0M for renewal, rehabilitation and replacement activities, as well as additional funding for service improvements, that are currently unfunded. In total, the proposed LOS average annual capital gap is $763K.

An average annual O&M gap of $326K is estimated based on the 10-year growth forecast and established O&M service levels. It is assumed to be sufficient in meeting both the current and proposed service levels.

Table 127: Fleet & Equipment - Lifecycle Activity Investments & Average Annual Infrastructure Gap

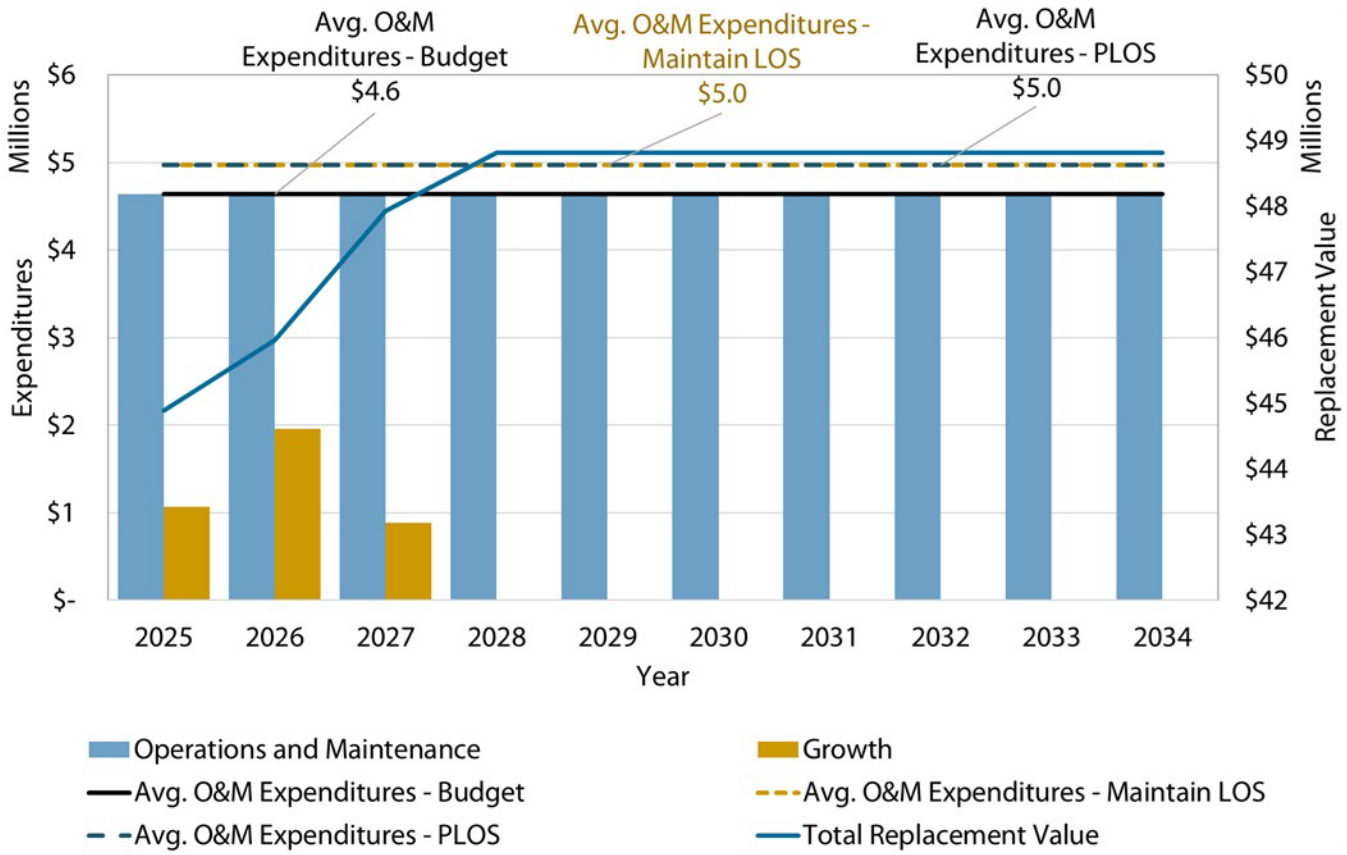
Lifecycle Activity	Average Annual Budget	Average Annual Cost to Maintain Current LOS	Average Annual Cost for Proposed LOS
Capital Costs			
Disposal	$0	$0	$0
Growth	$391,380	$391,380	$391,380
Non-Infrastructure	$0	$0	$0
Rehabilitation & Replacement	$3,234,100	$5,444,024	$3,970,067
Service Improvement	$0	$0	$27,400
Total Capital Expenditures	$3,625,480	$5,835,404	$4,388,847
Capital Infrastructure Gap		$2,209,924	$763,367
Operations & Maintenance	$4,642,400	$4,968,070	$4,968,070
Operations & Maintenance Gap		$325,670	$325,670
Total Expenditures	$8,267,880	$10,803,474	$9,356,917
Total Funding Gap		**$2,535,594**	**$1,089,037**
Gap as Percentage of Replacement Value		**5.65%**	**2.43%**

The growth and O&M expenditures shown in Figure 114 are shown in greater detail in Figure 115, which estimates the annual funding required for O&M. For current LOS, expenditures required for O&M were determined by estimating the requirements needed to accommodate growth.

Growth expenditures were informed by the City's capital budget and were added to the City's current replacement value to forecast the future expenditures required. As a result, more funding will be required to perform O&M activities on the increased asset portfolio. Growth through intensification (rather than Greenfield development) is driving demand for smaller, adaptable fleet units suitable for denser urban areas, and growth-related fleet requirements are still being assessed. Efforts were made to quantify additional requirements for O&M above the additional need for growth. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible

cost. However, proposed O&M spending must also account for the need for additional mechanics, operating costs, and capital budget planning to support the growing demands and ensure continued service delivery. For Fleet & Equipment assets, additional O&M were calculated to accommodate growth, which accounts for $325K of the total annual average funding gap. It was determined that no additional O&M expenditures would be required for proposed LOS for Fleet assets.

Figure 115: Fleet & Equipment - Operations & Maintenance - Capital Growth Value



With this information the City can make informed decisions about current and future budget allocations, prioritize maintenance and replacement projects, and develop strategies to ensure the long-term sustainability and reliability of these assets for current and future generations.

The activities and strategies listed within this chapter also provide the City's best chance to avoid the risks associated with asset ownership. The risks associated with not following the lifecycle strategies and activities can be significant and wide-ranging, which are further explained in the Lifecycle Strategy Risks section of the main document. Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

Addressing these risks requires a proactive approach to infrastructure planning, investment, and management. By prioritizing O&M, asset renewal, and strategic investments, the City can enhance resilience and sustainability.

K.6 Data Confidence & Improvement Plan

The main data sources and overall data confidence for Fleet & Equipment assets are provided in Table 128.

Table 128: Fleet & Equipment – Data Confidence

Asset Class	Data Source	Data Confidence
Fleet Vehicles	Maximo	High
Equipment	Maximo	High
Shop Equipment and Tools	Maximo and Fleet Services Spreadsheet	Medium

Opportunities for improvement include:

- It is recommended to review opportunities to leverage maintenance data to prioritize and determine triggers for replacement for fleet and equipment assets.

Appendix L

Asset Summary

L.1 Service Area: Transportation

Asset Class	Asset Type
Active Transportation	Sidewalks
Active Transportation	Trails
Active Transportation	Pedestrian Bridges
Active Transportation	Walkways
Active Transportation	Bike Lanes
Active Transportation	Street Furniture
Roads	Roads and Laneways
Roads	Pavement Edges
Roads	Street Lighting
Roads	Road Bridges (including major culverts)
Roads	Structural Walls
Roads	Signage
Roads	Guiderails
Roads	Pedestrian Crossings
Parking	Public Parking Lots (excluding parking lots specific to parks and recreation)
Parking	Parking meters

L.2 Environmental Services – Drinking Water

Asset Class	Asset Type
Water System	Water Mains (including valves, valve chambers, hydrants and water services)

Asset Class	Asset Type
Drinking Water	Water Meters
Drinking Water	Bulk Water Stations

L.3 Environmental Services – Stormwater

Asset Class	Asset Type
Stormwater	Storm System
Stormwater	Stormwater Management Facilities
Stormwater	Culverts
Stormwater	Dams

L.4 Environmental Services – Wastewater

Asset Class	Asset Type
Wastewater	Sanitary System
Wastewater	Sanitary Pumping Stations

L.5 Service Area: Emergency Services

Asset Class	Asset Type
Fire Protection	Fire Halls
Fire Protection	Fire Fleet
Fire Protection	Specialized Tools and Equipment
Fire Protection	Parking Lots

L.6 Service Area: Parks

Asset Class	Asset Type
Cemeteries	Cemeteries
Cemeteries	Cemetery Roads
Cemeteries	Columbaria
Cemeteries	Mausoleums, Chapels

Asset Class	Asset Type
Cemeteries	Facilities (Cemeteries)
Cemeteries	Parking (Cemeteries)
Parks	Parks
Parks	Natural Areas
Parks	Facilities (Parks & Outdoor Recreation)
Parks	Park Structures
Parks	Monuments
Parks	Park Furniture
Parks	Park Lighting
Parks	Playgrounds
Parks	Splash Pads
Parks	Bike and Skateboard Parks
Parks	Fencing (Parks & Outdoor Recreation)
Parks	Parking Lots (Parks & Outdoor Recreation)
Forestry & Horticulture	Tree Gates
Forestry & Horticulture	Trees
Forestry & Horticulture	Horticulture Beds
Forestry & Horticulture	Horticulture Planters
Forestry & Horticulture	Facilities (Horticulture)
Outdoor Recreation	Sports Fields & Courts
Outdoor Recreation	Sport Field Lighting

L.7 Service Area: Recreation & Culture

Asset Class	Asset Type
Indoor Recreation & Culture	Arenas
Indoor Recreation & Culture	Pools (Indoor and Outdoor)
Indoor Recreation & Culture	Community Centres/ Older Adult Centres
Indoor Recreation & Culture	Arts/ Theatres

Asset Class	Asset Type
Indoor Recreation & Culture	Museums
Indoor Recreation & Culture	Recreational Parking Lots

L.8 Service Area: Library

Asset Class	Asset Type
Library	Library Buildings
Library	Collections
Library	Furnishings, Fixtures & Equipment

L.9 Service Area: Corporate Facilities

Asset Class	Asset Type
Corporate Facilities	Corporate Facilities
Corporate Facilities	Maintenance and Storage Facilities
Corporate Facilities	Operations Facilities
Corporate Facilities	Leased Facilities
Corporate Facilities	Vacant Facilities
Corporate Facilities	Parking Lots

L.10 Service Area: Information and Communication Technology Infrastructure

Asset Class	Asset Type
Hardware	Backup Infrastructure and Software
Hardware	Desktops
Hardware	iPads
Hardware	Laptops
Hardware	Mobile Phones

Asset Class	Asset Type
Hardware	Security Infrastructure
Hardware	TVs
Hardware	VOIP Infrastructure
Hardware	Server, Storage, Network, etc.
Software	All of the software owned and managed by the City including Class POS Payment Systems, Databases, GIS, work management systems, etc.
Software	Corporate Website

L.11 Service Area: Fleet & Equipment

Asset Class	Asset Type
Fleet Vehicle	Fleet Vehicles (e.g. vans, trucks, tractors, etc.)
Fleet Vehicle	Electric Vehicles
Fleet Vehicle	Leased Vehicles
Equipment	Various equipment types (e.g. tools, trailers, generators, etc.)
Shop Equipment & Tools	Shop Tools
Shop Equipment & Tools	Lifting Devices

Appendix M

Strategic Planning Alignment

Strategic Document	Linkage(s) to the AMP
Master Plans	The City has approved many master plans and action plans since 2019. These plans include important actions for the implementation of the Strategic Plan and Business Plan. Included in this collection are plans relating to infrastructure, such as energy management, stormwater management, trails, transportation, leisure services and facilities, etc. The strategic objectives in these plans serve as a basis for decisions, priorities, performance management, and direction for the respective asset classes within this AMP.
Asset Management Plan Documents (2019 & 2024)	The 2019 AMP and 2024 Interim-AMP were intended to describe the infrastructure owned, operated, and maintained by the City of Cambridge to support its core services. Like this AMP, the documents provide information relating to the current state of the infrastructure, along with current and future activities. A lot has changed in Cambridge since 2019, and this AMP highlights some of the most notable changes. Some of these changes are due to legislative policies, while other changes have occurred more naturally, as Cambridge's asset management journey has continued to evolve. At their cores, both the 2019 AMP, 2024 Interim-AMP and this 2025 AMP provide improved accountability and a deeper understanding of the extent and long-term effect of new and aging infrastructure as it relates to funding.
Annual Business Plan (2025)	Informed by the Strategic Plan, the Business Plans set out the City's blueprint for the work that will be done within the organization over the next 12 months. It links to the AMP in its budgeting, performance indicators, forecasting, sustainability, and asset management initiatives.

Strategic Document	Linkage(s) to the AMP
Capital Investment Plan (2025-2034)	Cambridge prepares a multi-year Capital Investment Plan annually in conjunction with preparing an integrated capital and operating budget. The most recent capital budget was approved in 2025. The Capital Investment Plan is comprised of the budget for 2025 and a capital forecast for 2026 to 2034 and includes a substantive list of projects that are organized by function (e.g., planning, fire services, sanitary sewer, library, etc.). Project detail sheets are provided for the 2025 Capital Budget, including the project name, year, type of project, start and completion dates, names of those who prepared the project, descriptions and justification, expenditure and revenue allocations, and priority ranking. The AMP and the policies outlined align with the Capital Investment Plan and are an example of the processes, rationale, and evaluation criteria that are in place to analyze and prioritize capital investments. The detail sheets provided for each project provide transparency and fiscal responsibility, ensuring that each project moves through a thorough due diligence process.
2025 Mayor's Budget	The 2025 Operating Budget reflects the key initiatives and priorities, which are developed through Council direction and community feedback received in the preceding year. It details the costs of providing City services. The costs include staff salaries, program materials and supplies, and utility costs. After user fees and funding from other levels of government, the primary source of funding to pay for the costs in the operating budget is the tax levy – property taxes. As the AMP goes into detail on current LOS and desired LOS, the gap between these two will be used to inform the Mayor and Council on which areas to focus on over time. This will make sure that the funding is allocated to infrastructure where it is most needed, and where citizens will receive the greatest value.

Strategic Document	Linkage(s) to the AMP
Long-Range Financial Plans	These strategic documents outline the City's financial outlook and goals for a defined period as approved by Council. The Water and Wastewater Long-Range Financial Plan provides a 10-year forecast on the expected annual budget from 2019-2028. This plan ensures sustainable funding for wastewater collection system, pumping stations, and contribution to Region for wastewater treatment. It also ensures sustainable funding for drinking water distribution network and contribution to Region for water supply, treatment and large diameter transmission pipes. These budgets are fully integrated to provide Council with a more complete financial picture. The integration of the three multi-year budget components provides insight into the operating implications of capital costs, ensuring that the investments that are made today, along with their desired levels of service, are sustainable over the long run.
Climate Adaptation Plan (2019)	The Climate Adaption Plan is focused on emergency response as well as future-proofing infrastructure to be resilient and prepared for weather-related disasters as well as incremental climate change. These action items are intended to reduce or avoid damage to City infrastructure and service interruptions as weather patterns change. The City's corporate plan contains 31 Actions.
Community Climate Adaptation Plan for Waterloo Region (2019)	This plan focuses on what the community needs to do to adapt to a changing climate. The plan contains actions to address vulnerable populations, emergency preparedness, invasive species and disease vectors, land use planning, infrastructure, mitigating flooding, protecting groundwater and urban forests, and reducing transportation and power disruptions.
Energy Conservation and Demand Management (ECDM) Plan (2025 update)	This plan was approved by Council in 2014 and updated in 2020 and 2025. It features an inventory of City GHG emissions from City operations and facilities, reduction targets (i.e. 50% by 2030 and 80% by 2050), and actions to decrease corporate GHG emissions below the 2010 baseline. The City monitors its GHG emissions inventory and reports to the Province as a regulatory requirement as well as voluntarily to the Federation of Canadian Municipalities Partners in Climate Protection Program. The Energy Conservation and Demand Management Plan is considered in all relevant decisions including the City's LOS Framework and Asset Lifecycle Management Strategies.

Strategic Document	Linkage(s) to the AMP
Transform Waterloo Region (WR) (2021)	In 2021, the community climate action plan Transform Waterloo Region was endorsed by the Region and all area municipal Councils and featured 78 actions and emission reduction targets (i.e. 50% by 2030 and 80% by 2050). A number of the Actions are addressed through other ongoing City plans and initiatives (e.g. implementation of active transportation initiatives through the City's 2020 Cycling Master Plan). The Climate Action Waterloo Region collaborative group consists of the Region, area municipalities, Reep Green Solutions, and Sustainable Waterloo Region and provides regular reports on the community emissions inventory and progress toward targets (e.g. through a Dashboard, Council presentations, community outreach events, etc.).
Community Energy Investment Strategy (2018)	The Community Energy Investment Strategy contains actions for a resilient and low emissions local energy generation and distribution system that would keep more of the energy expenditures within the local economy. It is implemented by a collaborative group, WR Community Energy, which consists of the Region, area municipalities, and local energy utilities, and which provides development planning support, research and policy development. A current focus is on developing High Performance Development Standards for new construction.
Green Fleet Strategy	As a follow up study to the Energy Conservation and Demand Management Plan, this document encourages reduction in greenhouse gas (GHG) emissions from the city's vehicle fleet by transitioning to electric vehicles and other low-carbon technologies.
Multi-Year Accessibility Plan (2018 – 2021)	The 2018 to 2021 Accessibility Plan outlined the policies and actions Cambridge implemented to improve opportunities for people with disabilities, in accordance with the requirements of Ontario Regulation 191/11: Integrated Accessibility Standards. The plan is currently under review for updates. The City of Cambridge remains committed to ensuring that public spaces, services, and facilities are accessible to all. These efforts, along with established accessibility standards have been considered in defining our desired LOS across all asset classes.

Strategic Document	Linkage(s) to the AMP
Cambridge Connected Strategic Plan 2024 - 2026 (2024)	The 2024-2026 Strategic Plan - Cambridge Connected, sets a plan in motion to implement priorities that reflect Cambridge's most pressing needs and biggest opportunities, as identified by key stakeholders. It provides a roadmap to guide the City's work to support future growth, while ensuring we continue to deliver the over 140 programs and services that our residents rely on every single day. The Strategic Plan establishes a vision for Cambridge to be "a place for people to prosper – alive with opportunity", and the infrastructure that enables our people to thrive is a significant contributing factor to this vision. This AMP shares a connection to the Strategic Plan in its direction and objectives, relating to decision making, prioritization of resources, and performance management to achieve the vision as well as the goals and objectives outlined within the plan. The Strategic Plan was used to guide the City in developing the LOS Framework for this AMP.
Region of Waterloo Strategic Plan 2023 - 2027 Growing with Care (2023)	The Region's Strategic Plan describes a future view of what the Region is working to achieve, providing a common focus for Council and staff, and helping to guide priorities and ensure programs and services address community needs. Four areas of focus were identified in the Plan, including: homes for all; equitable services and opportunities; climate aligned growth; and resilient and future ready organization. Asset Management, and specifically this AMP, enables an integrated, shared vision and roadmap to ensure our infrastructure meets the needs of residents in a way that is consistent with the four focus areas. For instance, our infrastructure and the levels of service it provides are the foundation for housing and economic development; integrated and accessible transportation will enable sustainability and affordability for our community members and visitors; natural environments create spaces and places that enhance living, working, and travelling; affordable and supportive housing options contribute to safe and inclusive communities; and organizational processes, facilities, and resources that are reliable, cost-efficient and effective, provide greater resilience and preparation for the future.

Strategic Document	Linkage(s) to the AMP
Development Charges Background Study (2023)	The City maintains a by-law that imposes certain Development Charges in the City pursuant to the Development Charges Act, S.O., 1997, c. 27, as amended. The growth plans and infrastructure investment proposed within the AMP must consider whether development charges will be incurred pursuant to the City's bylaws. In accordance with the by-law, Cambridge has developed a Development Charges Background Study. The Development Charges Background Study is essential to this AMP as it supports the City in identifying its funding gap included in the Financial Strategy.
City of Cambridge Official Plan (2018)	The Official Plan outlines a long-range, comprehensive land-use strategy for areas located within Cambridge's municipal boundaries. The Plan provides a framework for land-use decisions for all development and public works projects by protecting, managing, and enhancing the natural environment; directing, influencing, and managing growth patterns; and facilitating the vision of the City. The Official Plan is particularly important as it provides an avenue through which Provincial and Regional policies are implemented in the local context. As a community of opportunity, Cambridge encourages efficiency in government and the provision of municipal services. This Official Plan is considered in all relevant decisions including the LOS Framework, Asset Lifecycle Management Strategy, Stakeholder Engagement, Financial Strategy etc.
Growth Plan for the Greater Golden Horseshoe (2020)	The Growth Plan for the Greater Golden Horseshoe is a comprehensive regional planning framework that shapes how cities and communities in this fast-growing region of Ontario develop. It influences several key aspects of city planning, including land use, housing, transportation, infrastructure, environmental protection, and economic development. The plan promotes compact, transit-supportive communities, encourages intensification in urban growth centres, and aims to curb urban sprawl by directing growth to existing settlement areas. It also emphasizes the protection of natural heritage systems and prime agricultural lands, while ensuring that infrastructure investments align with growth patterns. Overall, the plan seeks to create complete communities that are livable, sustainable, and economically vibrant.

Strategic Document	Linkage(s) to the AMP
Provincial Planning Statement (2024)	The Provincial Planning Statement (PPS), 2024 is a streamlined province-wide land use planning policy framework that builds upon housing-supportive policies from past planning documents. The PPS 2024 provides municipalities with the tools and flexibility they need to build more homes. It enables municipalities to: • plan for and support development, and increase the housing supply across the province; • align development with infrastructure to build a strong and competitive economy that is investment-ready; • foster the long-term viability of rural areas; and • protect agricultural lands, the environment, public health and safety.

Appendix N

Basic Attributes List

N.1 Segmented Attribute and Comments

Attribute	Comments
Basic Information	
ASSET_ID	Unique identifier of the asset within the same asset type
DESCRIPTION	A generalized description of the asset based on information contained in the source table/layer
STATUS	Current status of the asset
OWNERSHIP	Ownership of the asset
SIZE	Size of the asset (in established measurement unit)
MATERIAL	Material of the asset
MAINTAINED_BY	Responsibility (Department/ Division) to Maintain Asset in good state of repair
Location Information	
LOCATION_ID_DESCRIPTION	Generated using Address, Street name, Park name, etc.
LOCATION_ID	Generalize Location Identifier used to consolidate assets for TCA purposes

Attribute	Comments
Asset Source and Rehabilitation History	
CONS_YEAR	Year asset was installed based on available records (if blank, then value is assigned in an estimated construction year in CONS_YEAR_EST based on adjacent asset information or subjective assessment)
CONS_YEAR_EST	Estimated year of construction if installation year is not known
PROJECTID	Reference to a specific Renewal or Development project for the purpose of matching assets with project information
REG_PLAN_ID	Reference to a specific Subdivision Plan within which the asset was built
WARRANTY_START	Date the warranty period begins for this asset (if known)
WARRANTY_END	Date the asset has been accepted to be free from defects and end of warranty is accepted
LAST_TREATMENT_TYPE	Last rehabilitation type for this asset
LAST_TREATMENT_YEAR	Last rehabilitation year for this asset
Asset valuation	
REPLACEMENT_COST_CURRENT	Replacement value of the asset calculated by system based on unit rates from recent tenders and appropriate attributes (i.e. size, depth, etc.) Note this is updated regularly by the system
REPLACEMENT_COST_YEAR	Year in which the replacement value was assigned
Condition - Based on inspection Program	
ASSET_CONDITION	Condition of asset as per last condition assessment

Attribute	Comments
LAST_INSPECTION_DATE	Date of last inspection
REM_SERVICE_LIFE	Remaining service life of asset
Risk Profile -Information based on Risk Analysis	
ASSET_COF	Consequence of failure score (1 low - 3 High)
ASSET_RISK_SCORE	Asset risk score (COF x likelihood of failure (condition))
Life Cycle Information - Information based on Analysis	
REPLACEMENT_YEAR_LIFE	Standard end of life year based on typical serviceable life values based on appropriate parameters (most commonly material)
REPLACEMENT_ YEAR_CONDITION	Adjusted end of life year based on condition information received through inspection programs
NEXT_REPLACEMENT_YEAR	Approved end of life year based on project listed in approved capital budget forecast
TCA Information - Auto Maintained	
TCA_CLASS	Tangible Capital Asset classification as defined by Finance
TCA_CATEGORY	Tangible Capital Asset category as defined by Finance
TCA_STATUS	Status of asset for financial purposes WIP (Work in Progress) all new assets have this status until related project or plan financial status is changed to 'CLOSED' as directed by Finance
FIR_CODE	Financial Information Return Codes: D-Donated, C-Contributed, T-Transferred. This not typically known and updated as 'D' if related to a subdivision plan. Information is input by finance as appropriate in TCA PSAB (Public Sector Accounting Board) system.

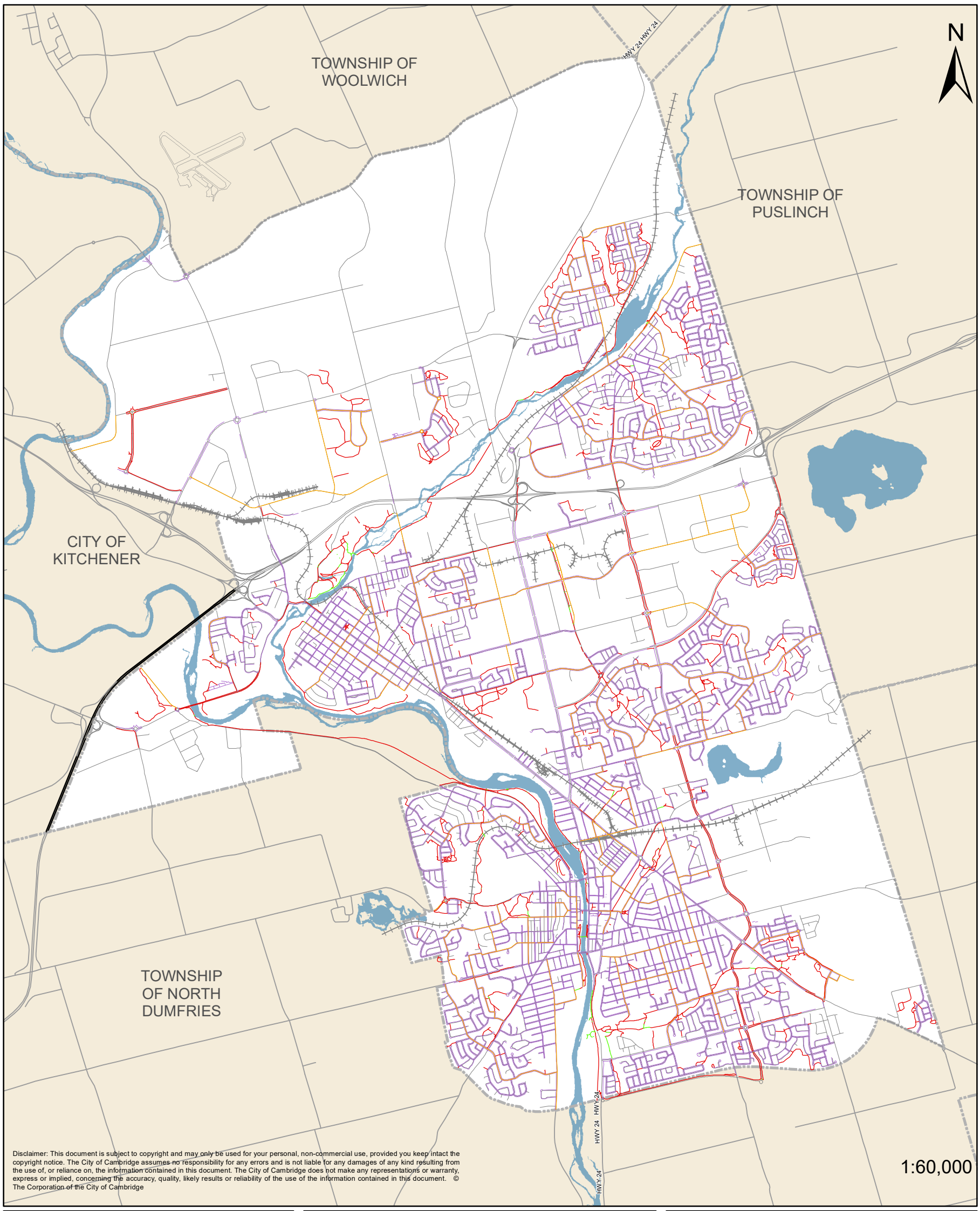
Appendix O

Maps

O.1 Service Area Maps

Map	Service Area	Section
Active Transportation	Transportation	O.2
Roads Pavement Condition 2024	Transportation	O.3
Road System Overview	Transportation	O.4
Water System Overview	Drinking Water	O.5
Storm System Overview	Stormwater	O.6
Sanitary System Overview	Wastewater	O.7
Natural Assets	Parks	O.8
Parks, Cemeteries, & Outdoor Recreation	Parks	O.9
City Heritage Assets	Parks	O.10
Indoor Recreation & Libraries	Recreation & Culture	O.11

O.2 Transportation Map – Active Transportation



City of Cambridge
Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Active Transportation

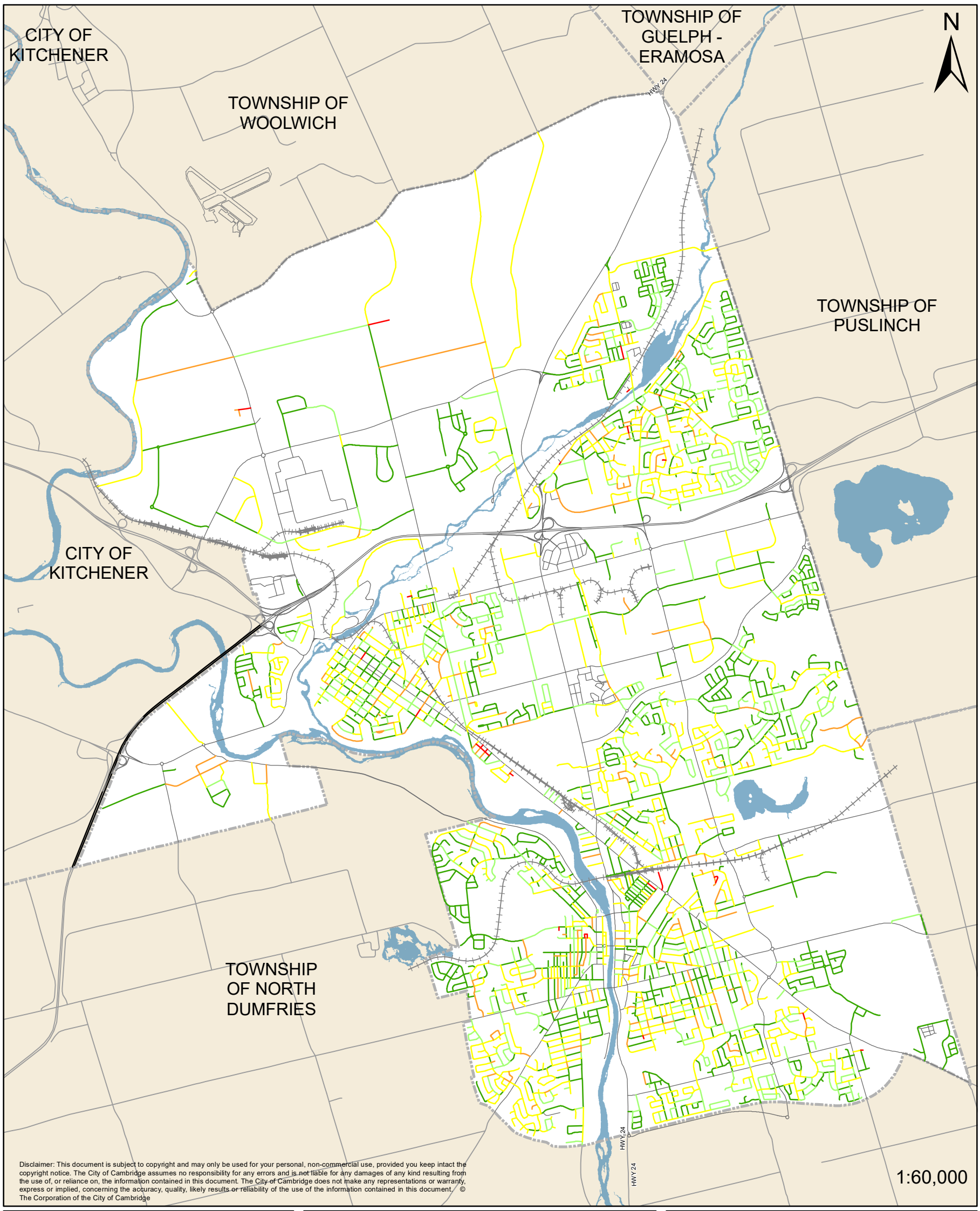
Legend

- Bike Lane
- Sidewalk
- Trail & Walkway
- Trail Route on Road, Parking Lot, Bridge, Boardwalk
- Railway
- Municipal Boundary
- Rivers and Lakes

Type	Kilometres
Trail & Walkway	141
Trail Route on Road, etc	4
Bike Lane on Road	102
Sidewalk	687
Totals	**934**

Thursday, June 5, 2025 10:06:35 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_ActiveTransportation_2025.mxd

O.3 Transportation Map – Roads Pavement Condition 2024



City of Cambridge
Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Roads Pavement Condition 2024

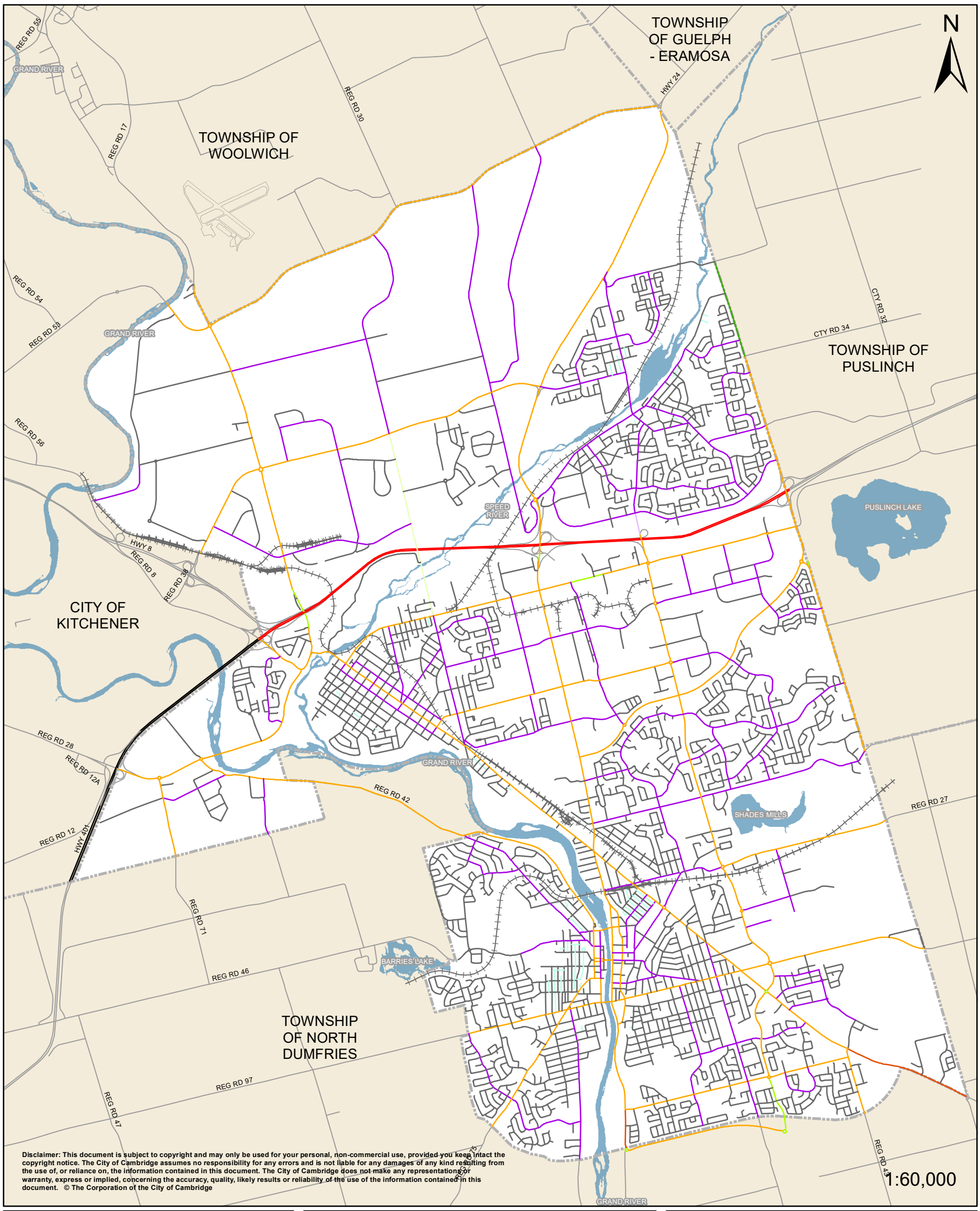
Legend

- Very Poor
- Poor
- Fair
- Good
- Very Good
- Roads | Not City Owned
- Municipal Boundary
- Rivers and Lakes

Pavement Condition	Total Lane Kilometre	Percentage (%)
Very Good	397	39
Good	222	21
Fair	347	32
Poor	67	7
Very Poor	4	1
Totals	**1038**	**100**

Thursday, June 5, 2025 10:48:05 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_RoadCondition_2025.mxd

O.4 Transportation Map – Road System Overview



City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Road System Overview

Legend

City of Cambridge
- Laneway
- Collector
- Local
- Major Arterial

Shared Ownership
- Collector

Region of Waterloo
- Collector
- Local
- Major Arterial

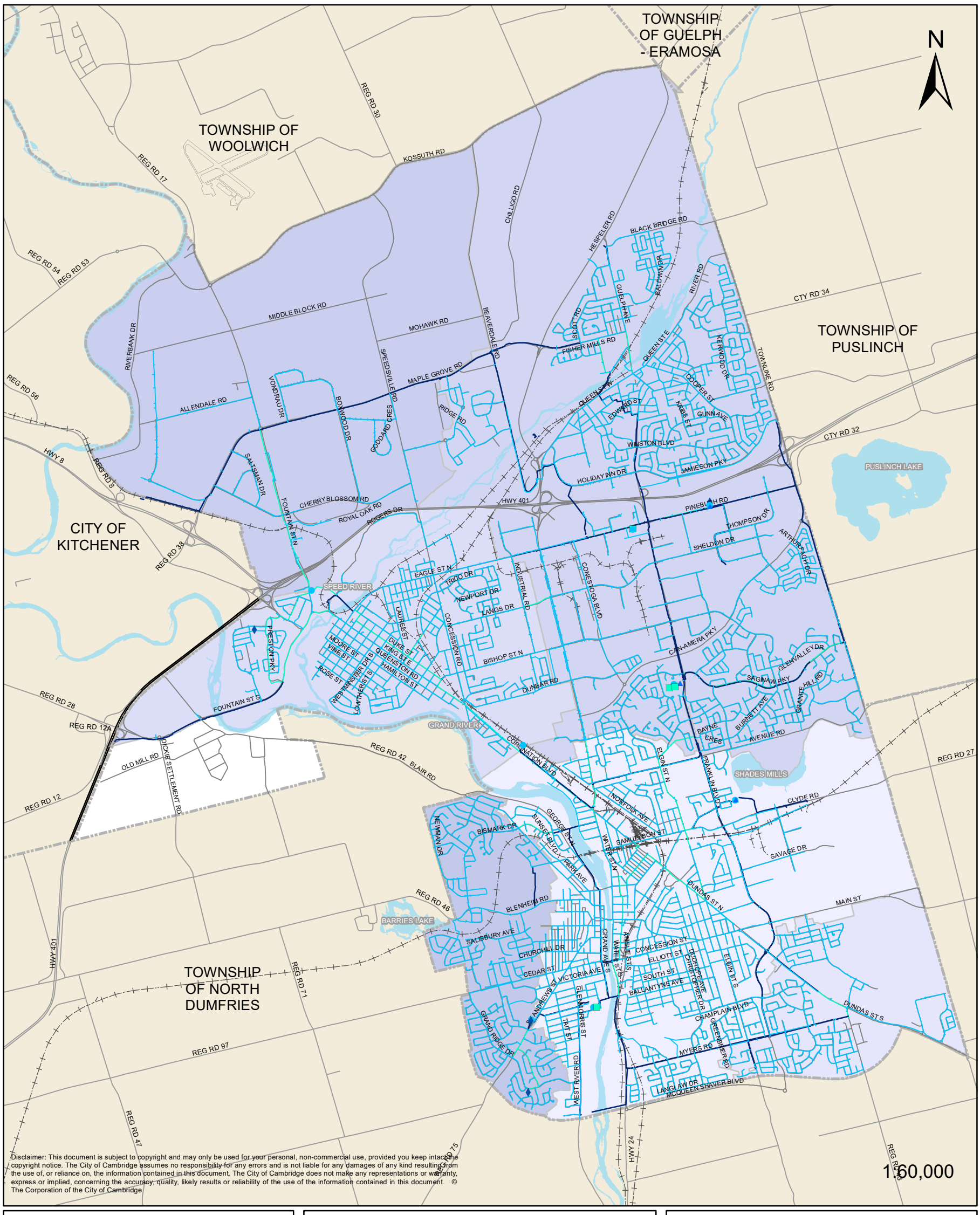
Province of Ontario
- Highway
- Major Arterial

- Railway
- Municipal Boundary
- Rivers and Lakes

Road Class	Lane Kilometres
Shared Ownership	
Collector	3
Province of Ontario	
Highway	52
Major Arterial	7
Region of Waterloo	
Major Arterial	323
Collector	6
Local	7
City of Cambridge	
Major Arterial	1
Collector	254
Local	776
Laneway	7
Totals	**1436**

Thursday, June 5, 2025 10:57:40 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_RoadsSystemOverview_2025.mxd

O.5 Drinking Water Map – Water System Overview



City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Water System Overview

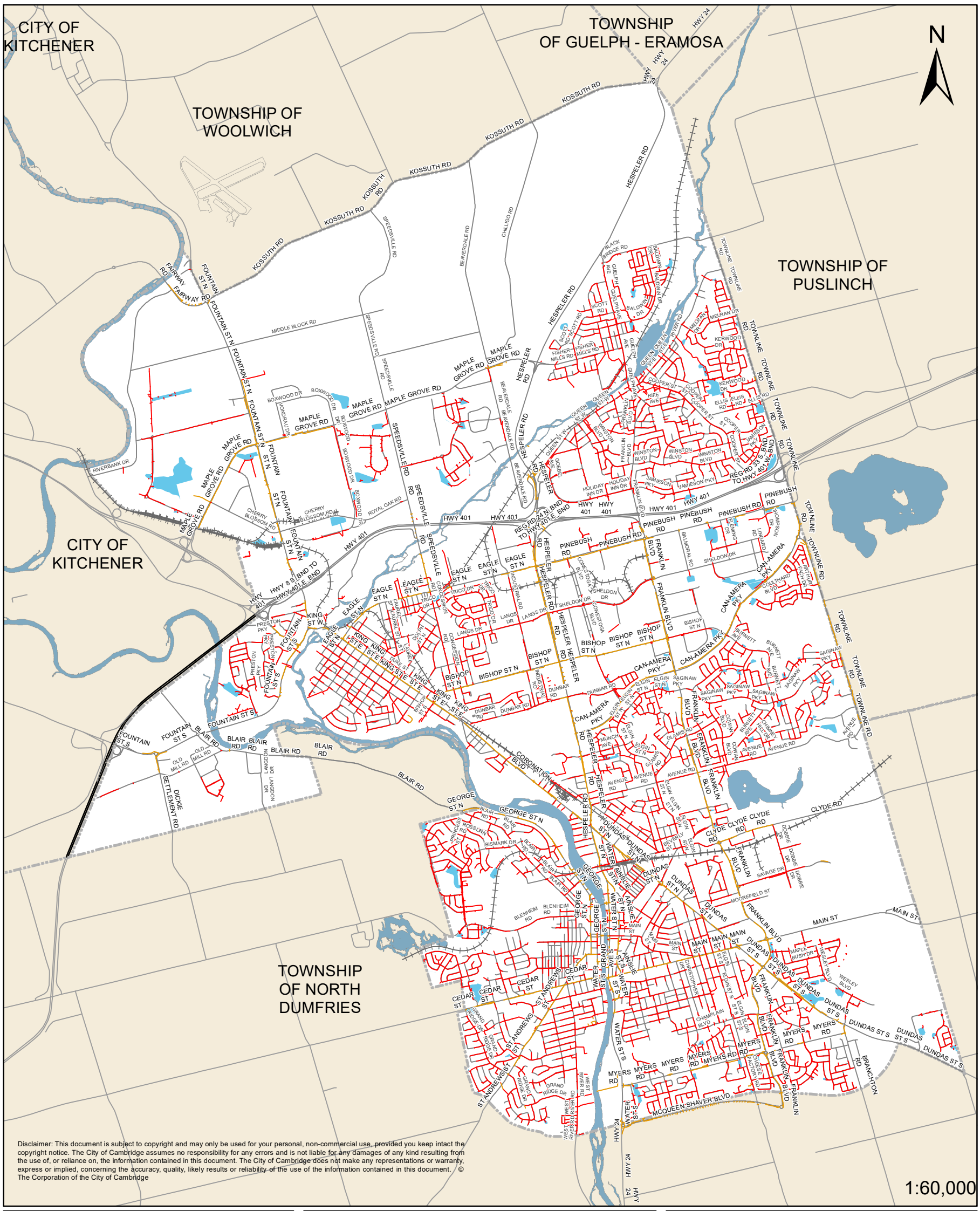
Legend

Region Water Treatment Plant	**Water Pressure Zones**	
Region Pumping Station	1	
Region Water Tank	1A	
Region Water Reservoir	1W	
Water Main City of Cambridge	2	
Water Main Region of Waterloo	2W	
Water Main Shared	3	
Roads		
Railway		
Municipal Boundary		
Rivers and Lakes		

Ownership	Length in Kilometres
City of Cambridge	526
Region of Waterloo	60
Shared	30
Totals	**615**

Thursday, June 5, 2025 11:29:15 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_WaterSystems_Overview_2025.mxd

O.6 Stormwater Map – Storm System Overview



City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Storm System Overview

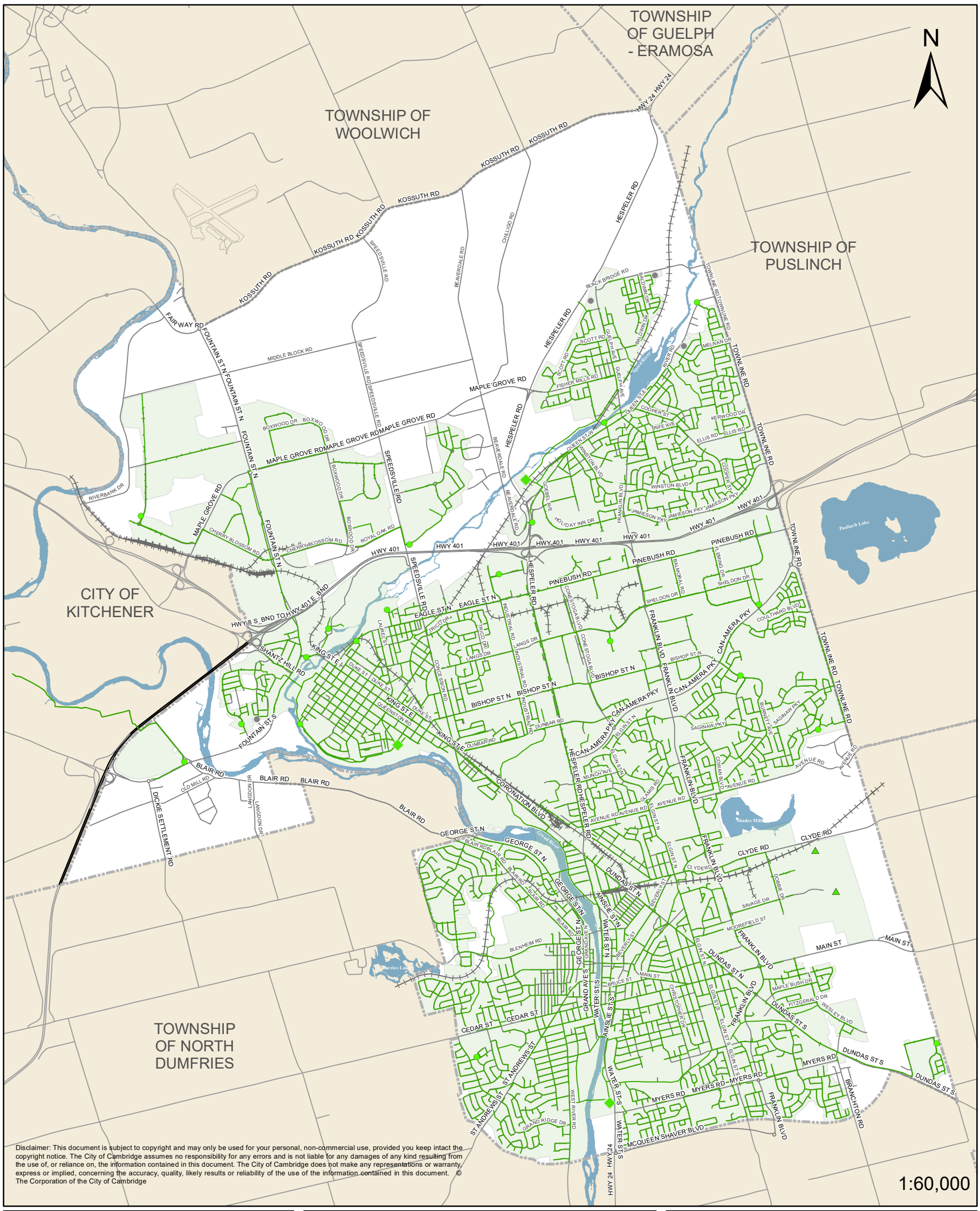
Legend

- City of Cambridge Storm Pipe
- Region of Waterloo Storm Pipe
- Stormwater Management Facility
- Roads
- Railway
- Municipal Boundary
- Rivers and Lakes

Ownership	Asset Type	
Cambridge	Storm Pipe	401 Km
	Stormwater Management Facility	134
Region of Waterloo	Storm Pipe	71 Km

Thursday, June 5, 2025 11:20:03 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_StormSystemOverview_2025.mxd

O.7 Wastewater Map – Sanitary System Overview



City of Cambridge
Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Sanitary System Overview

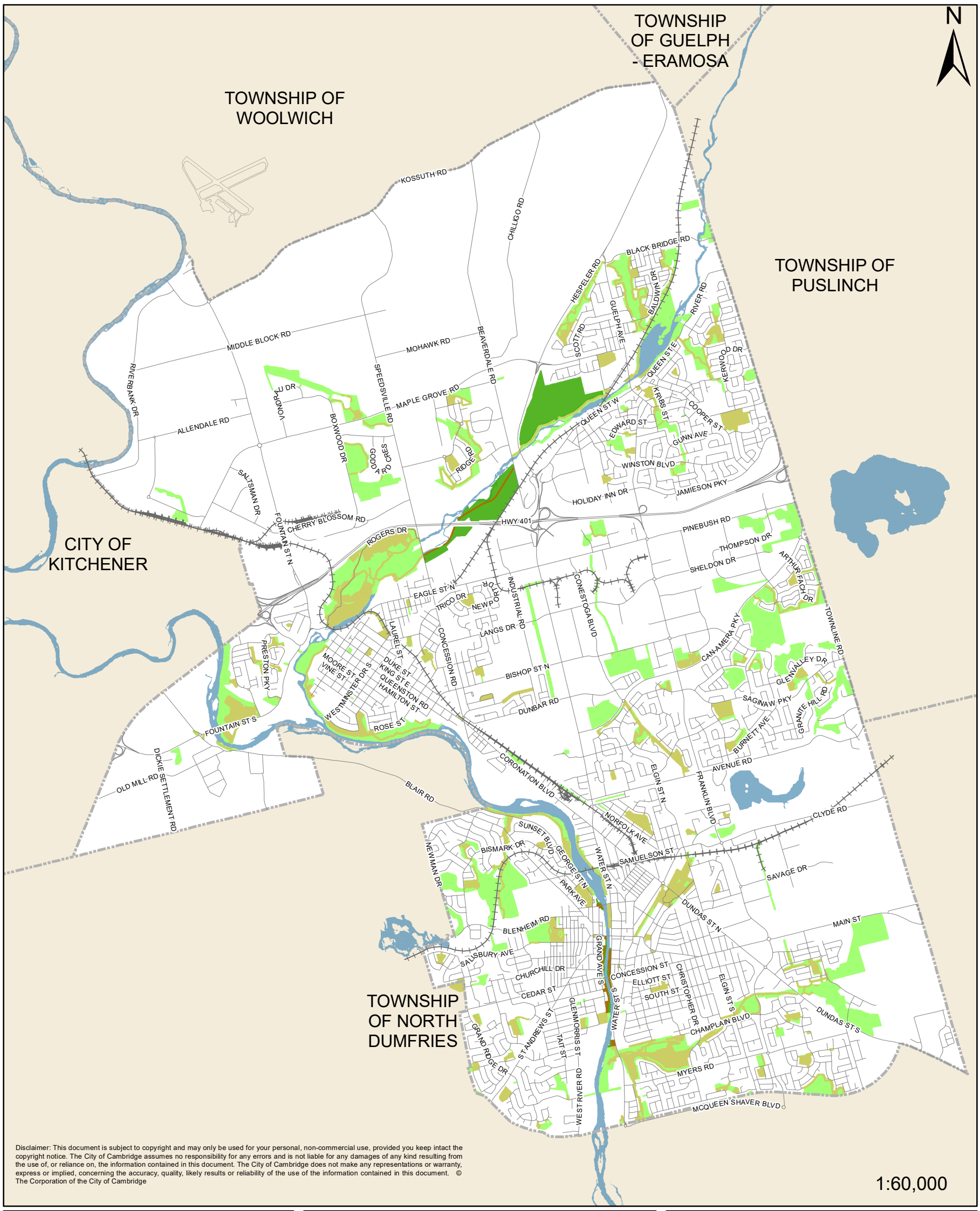
Legend

- City of Cambridge Pumping Station
- Region of Waterloo Pumping Station
- Private Pumping Station
- Region of Waterloo Sewage Treatment Plant
- Sanitary Pipe
- Area of Sanitary Service
- Roads
- Railway
- Municipal Boundary
- Rivers and Lakes

Service	Count
Sanitary Pipe	560 Km
City of Cambridge Pumping Station	19
Region of Waterloo Pumping Station	2
Private Pumping Station	4
Region of Waterloo Sewage Treatment Plant	3

Thursday, June 5, 2025 11:08:57 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_SanitarySystemsOverview_2025.mxd

O.8 Parks Map – Natural Assets



City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Natural Assets

Legend

- Park Natural Area – City
- Park Natural Area - GRCA
- Park Developed & Recreational Area – City
- Park Developed & Recreational Area – GRCA
- Rivers and Lakes
- Roads
- Railway

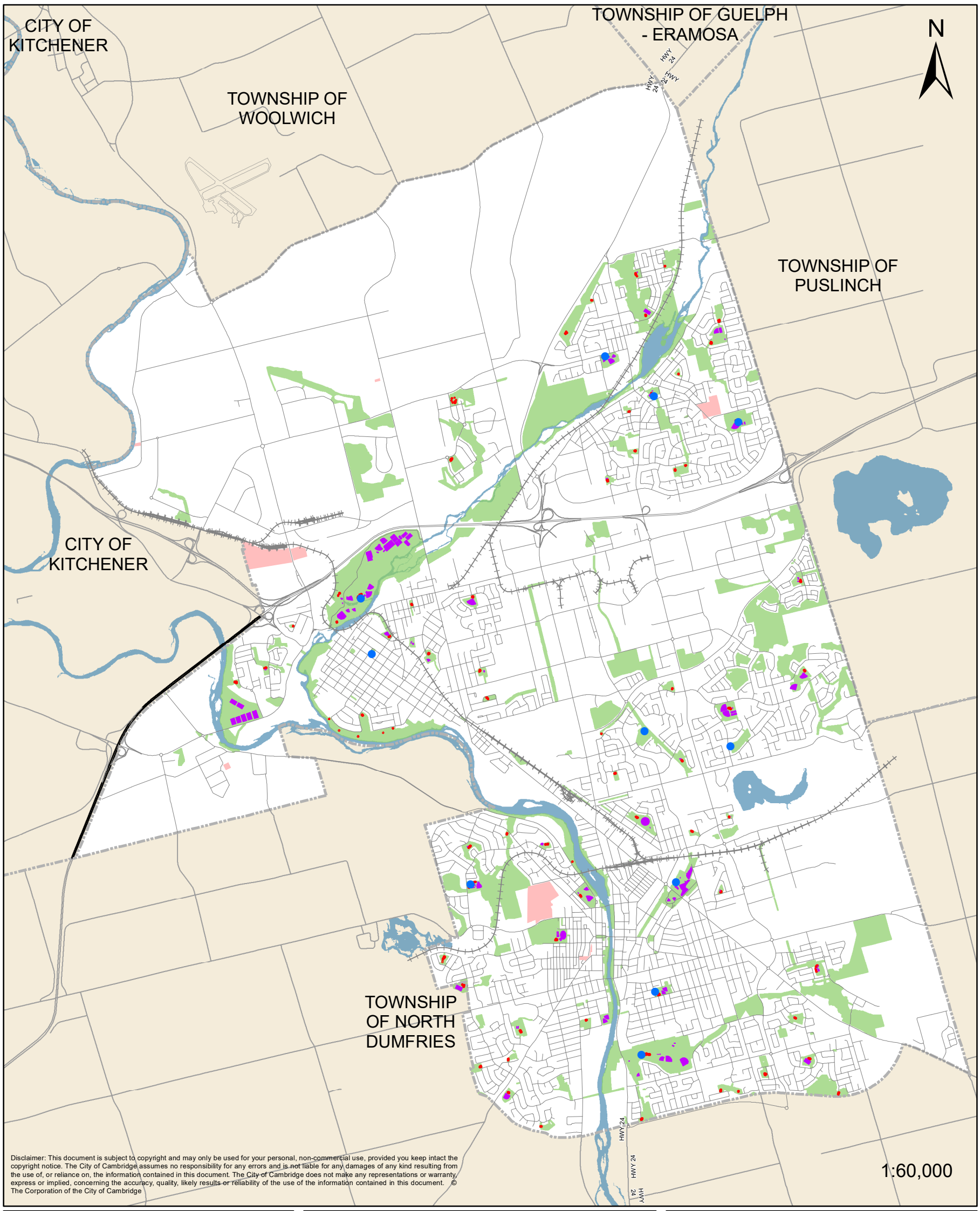
Ownership	Total Park Area (ha)	Natural Area (ha)
Cambridge	859	612
GRCA	88	85
Totals	947	697

City Tree Canopy: 27%
Street Tree Count: 61,659

* excluding park surplus land

Thursday, June 5, 2025 10:35:31 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_NaturalAssets_2025.mxd

O.9 Parks Map – Parks, Cemeteries, & Outdoor Recreation



City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Parks, Cemeteries and Outdoor Recreation

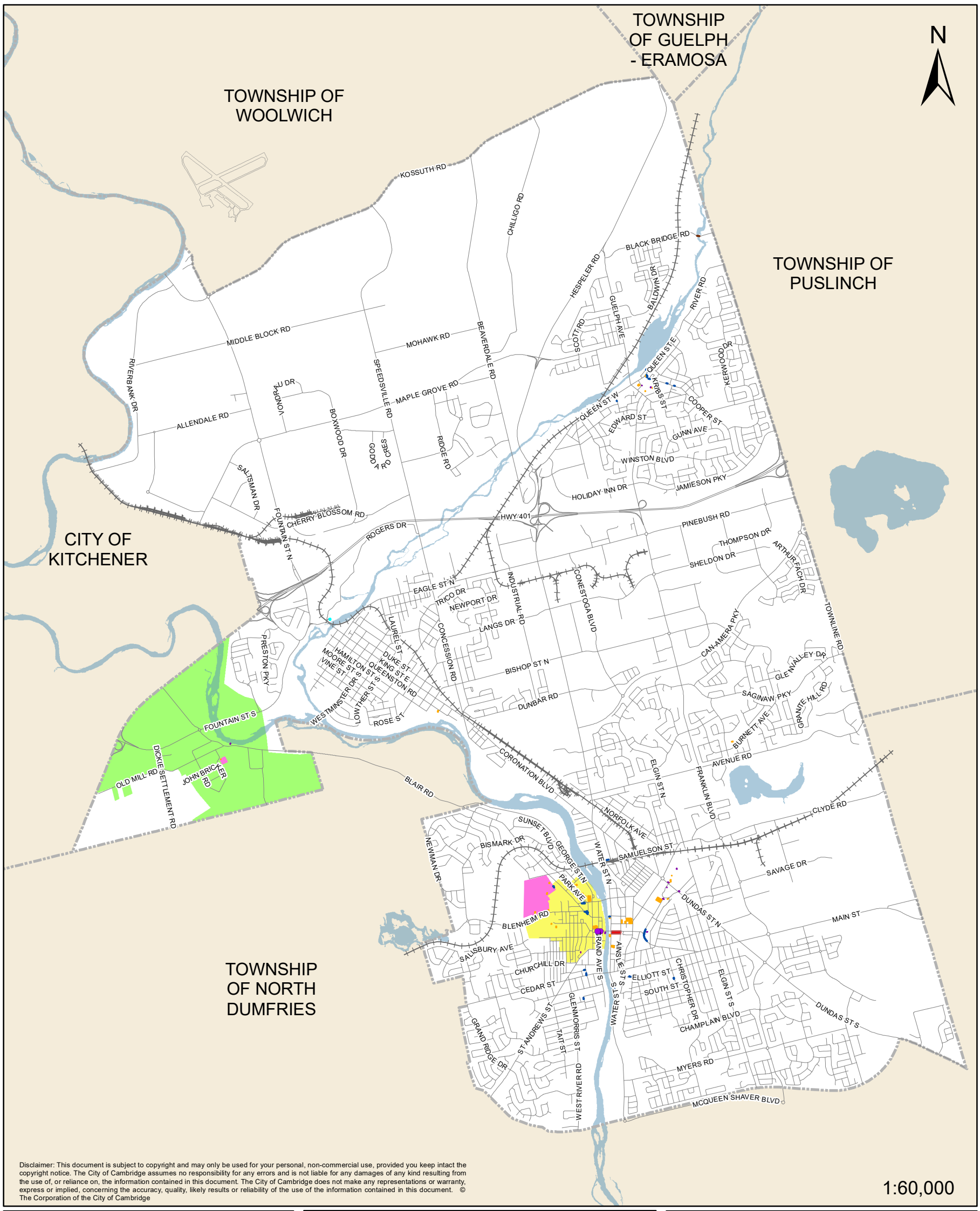
Legend

- Sportfield
- Playground
- Splash Pad
- Roads
- Cemetery
- Park (including GRCA owned)
- Rivers and Lakes

Area	Type	Count
Outdoor Recreation	Sportsfield	123
	Playground	94
	Splashpad	11
Cemetery	Cemetery	9
Parks	Parks	232

Thursday, June 5, 2025 10:41:17 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_Outdoor Recreation_2025.mxd

O.10 Parks Map – City Heritage Assets



1:60,000

City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

City Owned Heritage Assets (Designated, District)

Legend

- Bridge
- Retaining Wall
- Cemetery
- City Building
- Park Structure
- Park Structure
- Roads
- Railway
- Rivers and Lakes

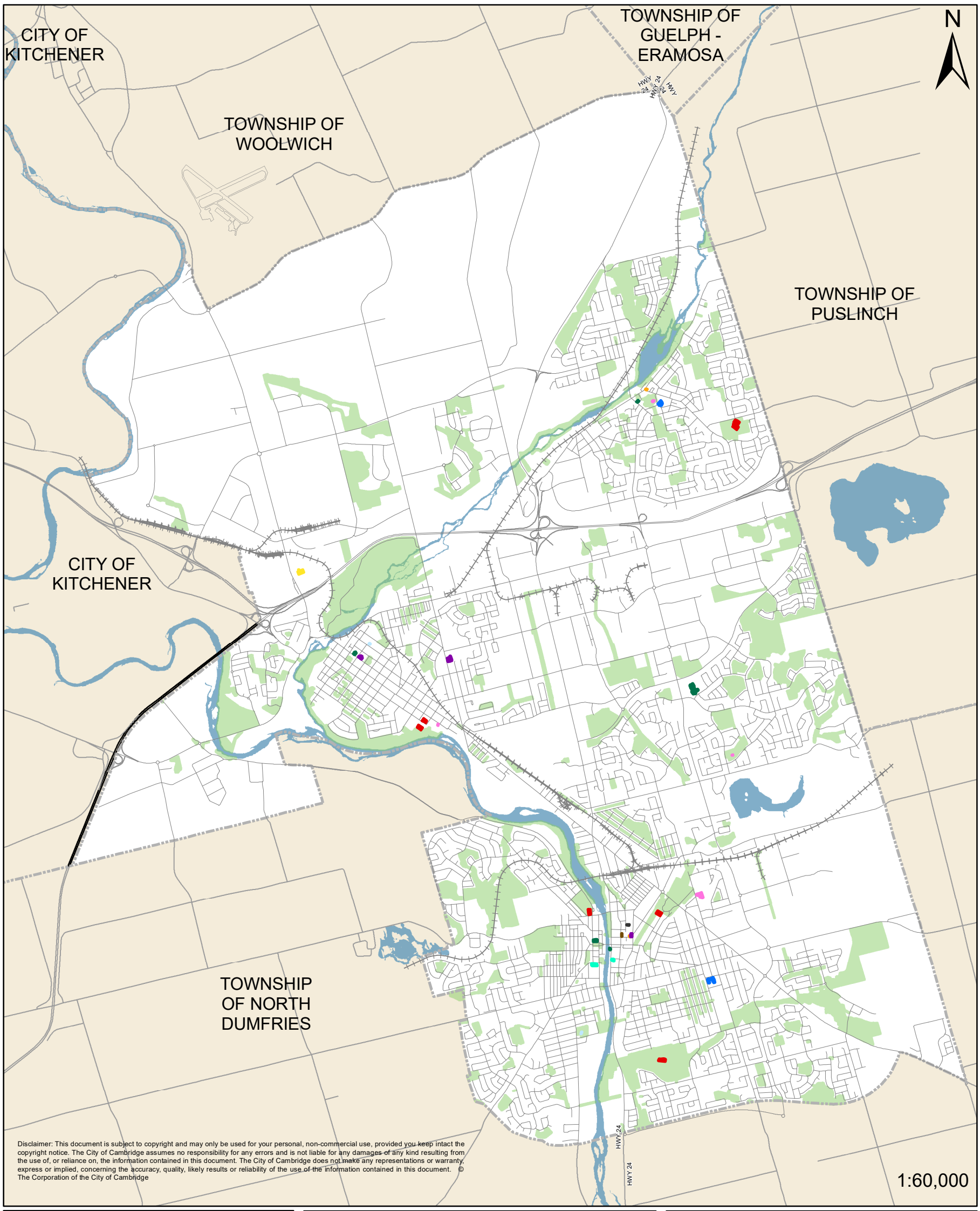
Heritage District

- Blair Village Conservation District
- Dickson Hill Heritage Conservation District
- Main Street Heritage Conservation District

Type	Count
Bridge	1
Cemetery	2
City Building	34
Park Structure	22
Retaining Wall	31

Thursday, June 5, 2025 10:18:54 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_Heritage_2025.mxd

O.11 Recreation & Culture Map – Indoor Recreation & Libraries



City of Cambridge Asset Management Plan

CAMBRIDGE CANADA
PEOPLE • PLACE • PROSPERITY

Indoor Recreation & Libraries

Legend

- Library
- Arena
- Community Centre
- Indoor Pool
- Indoor Soccer
- Market
- Museum
- Outdoor Pool
- Senior Centre
- Theatre
- Vacant
- Roads
- Railway
- Park
- Rivers and Lakes

Area	Type	Count
Indoor Recreation	Arena	6
	Community Centre	4
	Indoor Pool	2
	Indoor Soccer	1
	Market	1
	Museum	2
	Outdoor Pool	2
	Senior Centre	3
	Theatre	2
	Vacant	1
Libraries	Library	5

Thursday, June 5, 2025 10:27:21 AM G:\IFS\Asset Management\Common\SHAREPOINT\04 Projects\Study - Corporate Asset Management Plan - 2024_2025\AMP20025 - Maps\AMP_IndoorRecreation_2025.mxd

Appendix P

Glossary

P.1 Main Glossary

Term	Description
Asset Attributes	A database of key attributes for each asset such as basic information, location information, asset source and rehabilitation history, asset valuation, condition, risk profile etc.
Asset Class	An aggregate of municipal infrastructure assets that provide a similar type of service.
Asset Condition	Measure of the health of an asset that ranges from "Very Good", to "Very Poor".
Asset Lifecycle Management Strategy	Requirement of O.Reg.588/17 to outline the lifecycle activities that would need to be undertaken to maintain the current levels of service for the next 10 years.
Asset Type	The individual municipal infrastructure assets that exhibit similar characteristics and perform the same service.
Average Age	The average age of all asset types, or asset classes.
Capital Cost	Fixed costs incurred for a one-time acquisition or creation of an asset to bring it to operational status or fixed cost for disposal of assets. May also include costs for the repair or rehabilitation of an asset to operational status.
Capital Planning Software	Software designed to support the analysis of asset data to determine asset needs and forecast investment over defined periods.
Capital Investment Plan	Capital investment proposed to sustain the current services for the next 10 years along with projects designed to meet projected growth requirements.
Community Levels of Service	Reflects the categories or themes that are most valued by the community and is aligned to the Corporate LOS in more detail.

Term	Description
Corporate Levels of Service	Core strategic outcomes as communicated in our vision from our Strategic Plan relating to levels of service at a high-level.
Core Asset	Any infrastructure asset that is a: - Water asset that relates to the collection, production, treatment, storage, supply or distribution of water; - Wastewater asset that relates to the collection, transmission, treatment, or disposal of wastewater, including any wastewater asset that from time to time manages stormwater; - Stormwater management asset that relates to the collection, transmission, treatment, retention, infiltration, control, or disposal of stormwater; - Road; or - Bridge or culvert.
Debenture	A type of debt instrument unsecured by collateral. The City has a debt policy that balances several considerations when determining whether projects should be funded from a pay-as-you-go approach versus debt.
Debt Financing	Refer to Debenture.
Drinking Water Quality Management Standard	The purpose of this Standard is to assist owners and operating authorities in the effective management and operation of their municipal residential drinking water systems. This Standard outlines requirements for a Quality Management System (QMS) to ensure high quality drinking water. In the development of a QMS, the Operating Authority must create an Operational Plan; this document defines the QMS and is subject to internal and external audits for accreditation. As referenced in the Standard, the QMS must be embraced by all those with active rolls in the water system, from front line staff to the highest level of management to Council. City Staff have developed and implemented a QMS specific to the City of Cambridge. Certification was originally obtained in February 2009. Recertification was successfully achieved in 2013, 2016, and 2019.
Financial Strategy	Requirement of O.Reg.588/17 to outline the cost to maintain the current levels of service.
Funding Gap	Instances where an investment requirement does not have dedicated funding sources identified or assigned to execute the targeted activity.

Term	Description
Geographic Information System (GIS)	Geographic Information System is a framework for gathering, managing, and analyzing data. Capable of integrating multiple data sets to produce spatial location and layers of information into visualizations using maps and 3-dimensional scenes.
Infrastructure for Jobs and Prosperity Act (2015)	An Act that establishes mechanisms to encourage principled, evidence based and strategic long-term infrastructure planning that supports job creation and training opportunities, economic growth and protection of the environment, and incorporate design excellence into infrastructure planning.
Levels of Service (LOS)	Requirement of O.Reg.588/17 to outline both qualitative descriptions and technical metrics that describe our commitments, standards, and expectations that we have set for ourselves regarding asset measures, such as usage, reliability, condition, and quality.
Lifecycle Cost	Refers to the total costs required for an asset or service over all stages of its life; e.g., acquisition/creation, operation and maintenance, renewal and disposal.
Life Span	The expected length of time an asset can be operational and deliver the required level of service.
Lifecycle Management	The structures and processes we have in place with respect to our municipal infrastructure assets over the course of an asset's service life, including acquisition, creation, construction, maintenance, renewal, operations, disposal, and all engineering and design work associated with those activities.
Non-Core Assets	Any infrastructure asset that does not fall under one of the Core Asset categories, but is still owned and operated by the City, such as Fleet & Equipment, parks, building facilities, and fire halls, garbage bins, and horticulture planters.
O.Reg.588/17	An Ontario Regulation entitled, "Asset Management Planning for Municipal Infrastructure," made under the Infrastructure for Jobs and Prosperity Act of and filed in December 2017, which prescribes the policies and requirements relating to the preparation of this asset management plan.
Operating Costs	The aggregate of costs, including energy costs, of operating a municipal infrastructure asset over its service life.
PACP	Pipeline Assessment Certification Program through National Association of Sewer Service Companies (NASSCO).

Term	Description
Replacement Cost	The replacement cost of an asset can be calculated / estimated based on asset parameters like asset size (diameter, depth and width) and material. The replacement cost can also be dependent on its location and proximity to environmentally sensitive features and/or major transportation features.
Service Area	Grouping of asset types and classes that produce a similar service.
Service Life	The total period during which a municipal infrastructure asset is in use or is available to be used.
State of Infrastructure	Requirement of O.Reg.588/17 to outline a summary of the assets including the replacement costs, the average age, the condition of the assets in the category etc.
Strategic Asset Management Policy	Requirement of O.Reg.588/17 for each municipality to prepare a strategic asset management policy. This document is used to guide the development and continuous improvement of a municipality's asset management practices. It ensures that infrastructure planning aligns with municipal goals and long-term financial planning.
TCA, FIR, PSAB	Tangible Capital Asset, Financial Information Return in relation to the Public Sector Accounting Board.
Technical Levels of Service	Detailed metrics that can be used to evaluate and report whether the community and subsequently corporate LOS are being achieved.

P.2 Current Funding Sources Glossary

Term	Description
Water, Wastewater and Stormwater Rates	The annual operation of water and sewer distribution is funded through user rates for asset needs identified in the Water and Wastewater Long-Range Financial Plan (2019-2028). The City has recently moved the cost to provide stormwater management to the water bill with a separate user rate, with 50% of costs recovered through the 2025 Budget.
Reserve Funds	We have established reserve funds to provide stability to tax rates in the event of unforeseen economic events, to provide funding for one-time requirements, to make provisions for the acquisition, renewal, and replacement of infrastructure, and to provide flexibility to manage debt levels. A summary of the available reserve funds, allocation, and performance is located in our Annual Reports uploaded to our website.
Rates and User Fees	In addition to the water, wastewater and stormwater rates, our city levies other taxes and charges to support service delivery and improvement in other programs such as Recreation Program Fees, Facilities and Sports Fields Rental rates, Cemetery Services related fees, etc.
Other Government Grants	There are a range of government funds such as the Canada Community-Building Fund and other infrastructure renewal grants available to our City to support funding of infrastructure needs. These funds can be used for those projects which meet the eligibility criteria associated with these funds.
Investment Income	Our City receives revenue from its investments that can be used to fund infrastructure needs.
Debentures	We also utilize long-term, fixed interest debt financing to secure funding and delivery of our city's most important priorities.
Development Charges	The City of Cambridge collects development charges in accordance with the Development Charges Act and our Development Charges By-law. These charges can be used to offset the capital costs required to support growth-related infrastructure identified within our infrastructure needs.

P.3 MTO Classes Glossary

Term	Description
MTO Class 1	Expressway – Greater than 40,000 vehicles per day, and speed limits 80 to 100 km/h
MTO Class 2	Major Arterial Road – Greater than 20,000 vehicles per day, and speed limits 50 to 60 km/h
MTO Class 3	Minor Arterial Road – 8,000 to 20,000 vehicles per day, and speed limits 40 to 60 km/h
MTO Class 4	Collector Road – 2,500 to 8,000 vehicles per day, and signalized intersections at arterial road
MTO Class 5	Local Road – less than 2,500 vehicles per day, and low traffic speed

Appendix Q

Capital Investment Prioritization Criteria

Q.1 Capital Investment Prioritization Criteria

Criteria	Description	Maximum Score
Project Category	5 categories of projects that support different classifications of projects which vary depending on importance and impact to the public	200
Alignment with Corporate Strategic Direction	The extent to which the project fits with the goals and objectives of various corporate and departmental plans	100
Operating Budget Impact	The extent to which the project will result in reductions in operating costs	100
Risk Assessment	The extent to which the project will mitigate corporate risk	100
Public Value Principles	The extent to which public value principles will be enhanced by the project results	100
Service Levels	Impact on level of service	100
Infrastructure Impact	Impact of project in addressing the infrastructure deficit	100
Community Impact	Impact on community in terms of promoting the City as an attractive place to live (parks, trails, recreation, arts and culture, etc.)	100
Economic Impact	Impact on both the Corporation's and the City's businesses and economy in terms of revenue generation (job creation, assessment growth, increased tourism etc.)	100
Maximum Score		1000

Note: For each Criteria, only 1 scoring description can be selected from the following section.

Q.2 Capital Investment Criteria Scoring

Scoring Description	Criteria	Score
Mandatory Projects Projects that have prior legally binding commitments or have legal, safety, regulatory or other mandated minimum requirements where not achieving these requirements would lead to legal action, fines, penalties or high risk of liability against the City.	Project Category	200*
Critical Projects Projects required to maintain critical components in a state of good repair. These projects are not mandatory but will maintain critical components at current service levels and are projects that will otherwise become mandatory within five years.	Project Category	180
Community Planning / Maintenance / Efficiency Projects Studies/design projects that set the long-term direction for the City related to infrastructure and community needs. It also includes projects required to maintain capital infrastructure in a good state of repair based on standards approved by Council. Projects that result in operational efficiencies or savings are also included in this category.	Project Category	160
Strategic Projects Projects identified by Council to be a priority to move forward with that have a positive impact for the community.	Project Category	140
Enhance / Growth Related Projects Projects which will increase the current service level, are for new facilities or expansion of existing facilities or new initiatives.	Project Category	120
Aligned with Strategic Action as part of the Corporate Strategic Plan or specific Direction of Council.	Alignment with Corporate Strategic Direction	100*
Aligned with a City core service	Alignment with Corporate Strategic Direction	75

Scoring Description	Criteria	Score
Not Aligned with a Corporate or Departmental Plan	Alignment with Corporate Strategic Direction	50
Significant decrease in operating costs (> $100,000)	Operating Budget Impact	100*
Moderate decrease in operating costs (between $25,000 and $99,999)	Operating Budget Impact	75
Little or no decrease / increase in operating costs	Operating Budget Impact	50
Will mitigate corporate risk defined as "significant". "Significant" risk - Not proceeding with the project poses a severe risk to public safety that could result in critical injuries and/or financial LOSs > $50,000	Risk Assessment	100*
Will mitigate corporate risk defined as "medium". "Medium" risk - Not proceeding with the project poses a moderate risk to public safety and/or financial LOSs of < $50,000	Risk Assessment	75
Will mitigate corporate risk defined as "low" or little or no impact. "Low" risk - Not proceeding with the project poses little or no risk to public safety and/or financial LOSs for the City	Risk Assessment	50
Significantly contributes to increased public value principles of sustainability (financial and environmental), leadership, collaboration, transparency and engagement (supports 5 of 5 principles)	Public Value Principles	100*
Moderately contributes to increased public value principles of sustainability (financial and environmental), leadership, collaboration, transparency and engagement (supports 3-4 of the 5 principles)	Public Value Principles	75
Low impact to increased public value principles of sustainability (financial and environmental), leadership, collaboration, transparency and engagement (supports 1-2 of 5 principles)	Public Value Principles	50
Address a current service level deficiency so level of service standard is achieved	Service Levels	100*
Increase level of service	Service Levels	75
Has no impact on level of service	Service Levels	50

Scoring Description	Criteria	Score
Direct impact in reducing the City's total infrastructure gap	Infrastructure Impact	100*
Indirect impact in reducing the City's total infrastructure gap	Infrastructure Impact	75
Has no impact in reducing the City's total infrastructure gap	Infrastructure Impact	50
Has significant impact by improving or enhancing amenities available to the community	Community Impact	100
Has moderate impact by improving or enhancing amenities available to the community	Community Impact	75
Has no direct community impact	Community Impact	50
Generates a significant economic benefit for the local economy	Economic Impact	100*
Generates moderate economic benefit for the local economy	Economic Impact	75
Limited, minimal or no economic benefit for the local economy	Economic Impact	50

*Indicates the highest possible scores for each criterion as identified in the previous section.

Appendix R

Capital Needs Project List

R.1 Funded Project List

The following table presents the capital forecast for 2025 to 2034 from the 2025 Mayor's Budget:

Year	Project Number	Project Name	Total Budget
2025	A/00024-41	Riverside Dam Repair	$425,000
2025	A/00549-40	Disaster Recovery Site Enhancements	$300,000
2025	A/00553-41	Heritage Reno - Exterior Market Building	$848,400
2025	A/00557-40	Accessible Ball Diamond - Construction	$3,025,000
2025	A/00601-30	Infrastructure Design (2025)	$820,000
2025	A/00604-10	Laptop/Desktop Replacement Lifecycle (2025)	$250,000
2025	A/00609-40	Energy Management: Corporate Buildings (2025)	$150,000
2025	A/00616-40	Playground Replacement - Churchill Spaceshuttle	$410,000
2025	A/00617-30	Mountview and New Hope Columbarium Design	$90,000
2025	A/00619-10	Bunker Gear Phase 2	$264,000
2025	A/00621-30	Fire Station 4 Expansion Design	$228,800
2025	A/00623-10	Library Materials (2025)	$109,000
2025	A/00624-10	Library Computer Equipment (2025)	$271,200
2025	A/00625-40	Library Elevator Modernization (Hespeler)	$176,800
2025	A/00731-40	Trail Renewal - Northview Heights Trail	$498,200
2025	A/00752-20	SWM Pond Condition Assessments	$123,000
2025	A/00765-40	Parklawn Cemetery Roads	$430,000
2025	A/00771-30	Churchill Park Picnic Pavillion/Pond Repairs - Design	$60,000
2025	A/00804-41	Corporate Payment System Lifecycle Implementation	$300,000
2025	A/00834-40	cityONE (SAP) Lifecycle Enhancements (2025)	$200,000
2025	A/00834-41	cityONE (SAP) Lifecycle Updates (2025)	$200,000
2025	A/00901-10	Equipment Replacement (2025)	$4,111,000
2025	A/00939-40	Playground Replacement - Chaplin Park	$225,200
2025	A/00944-40	Johnson Center - Skylight, Window and Light Replacements	$287,900
2025	A/00956-30	Active Transportation Design - Dan Spring Way Trail	$100,000
2025	A/00962-30	Witmer Pumping Station Upgrade- Design	$250,000
2025	A/00988-40	Asphalt Resurfacing Program (2025)	$1,500,000

Year	Project Number	Project Name	Total Budget
2025	A/01026-10	Equipment Growth (2025)	$1,070,900
2025	A/01059-30	Cambridge Dog Park Design	$100,000
2025	A/01063-41	Customer Relationship Mgmt Software	$400,000
2025	A/01086-40	Bruce and Spruce St. Reconstruction	$3,232,000
2025	A/01087-40	Richardson Kay and Byng Av. Reconstruction	$4,483,500
2025	A/01095-30	East Side Lands Speedsville Infrastructure Design (Royal Oak to Maple Grove)	$487,100
2025	A/01108-40	Trail Dev - Treasure Hill	$634,000
2025	A/01115-30	Parking Lot Renewal Design - Westminster Lot and Water St North Lot	$53,000
2025	A/01116-30	Active Transportation Design - Dunbar Rd Phase 3	$80,000
2025	A/01130-40	Trail Renewal - Mill Race Pedestrian Bridge Replacement and Decommissioning	$404,000
2025	A/01131-30	Trail Bridge Design 2	$147,400
2025	A/01174-40	Cooper Street Reconstruction (2025)	$5,920,900
2025	A/01181-40	Kerr St. and Metcalfe St. Reconstruction	$3,032,000
2025	A/01207-30	Park Design - Churchill & Birkinshaw Parks Path Lighting	$90,000
2025	A/01211-40	Court Refurbishment - Churchill Basketball and Weaver Basketball	$400,000
2025	A/01212-40	Park Dev - Treasure Hill	$677,800
2025	A/01247-40	Water Meter Replacement Program (2025)	$850,000
2025	A/01304-40	Region - 188 Water St	$110,000
2025	A/01310-30	Riverside Park Artesian Well Outlet Modification Design (2025)	$68,000
2025	A/01315-40	Sanitary Lining Citywide (2025)	$2,080,000
2025	A/01316-30	Watermain Lining Rehabilitation Design	$225,000
2025	A/01356-30	Hespeler Skate Park Design	$110,000
2025	A/01361-40	City-Wide Speed Limit Signage Implementation (2025)	$301,900
2025	A/01385-40	Queen Street West Reconstruction	$3,200,000
2025	A/01426-10	Fire Fleet Growth (2025)	$1,400,000
2025	A/01443-40	Fleet Hoist Replacement (BOC)	$80,000
2025	A/01452-40	Laneway Renewal Program (2025)	$512,000
2025	A/01473-40	Preston Scout House Heritage Preservation	$131,000
2025	A/01481-40	Ferguson Homestead Heritage Restoration	$244,000
2025	A/01482-40	Lutz House Heritage Restoration	$152,000
2025	A/01500-30	Road Safety Review & Action Plan (2025)	$200,000
2025	A/01535-40	GIS Roadmap Implementation (2025)	$100,000
2025	A/01541-20	Recreation Facilities Action Plan: Phase 1	$100,000
2025	A/01583-40	Mountview Cemetery - Mausoleum Glass Niches Conversion	$100,000
2025	A/01588-20	Preston Secondary Plan	$250,000
2025	A/01595-20	Library Facilities Master Plan	$90,000
2025	A/01602-40	Communitech Partnership	$50,000

Year	Project Number	Project Name	Total Budget
2025	A/01603-20	Analysis of Corporate Owned Real Estate Assets	$100,000
2025	A/01605-10	Land Acquisition - Confidential 3	$4,255,000
2025	A/01610-40	Website Renewal	$250,000
2025	A/01611-40	Fire Station 1 Kitchen	$135,000
2025	A/01612-40	Riverside Water Building Roof Replacement	$267,800
2025	A/01613-40	Parklawn Cemetery Roof Replacement	$84,400
2025	A/01617-40	Willard Workshop Roof Replace	$126,400
2025	A/01623-40	Arena Safety Netting	$175,000
2025	A/01632-41	19 Cambridge Renovation	$202,000
2025	A/01637-40	Galt Arena Roof's Window Replacement (2025)	$273,700
2025	A/01657-10	Fire Fighting Equipment Phase 1	$64,900
2025	A/01658-10	Public Safety Equipment Phase 1	$76,000
2025	A/01671-40	Sidewalk Infill - Reuter Drive	$288,000
2025	A/01676-30	Road Safety Audits	$90,000
2025	A/01685-40	SWM Pond Fence Repairs	$100,000
2025	A/01693-40	Camera and Security	$150,000
2025	A/01695-40	Cloud Strategy and Implementation	$100,000
2025	A/01704-40	Integration of Systems and Database	$250,000
2025	A/01718-40	Library Atria Revitalization (Queen's Square)	$252,500
2025	A/01722-10	Light Fire Fleet Growth (2025)	$50,000
2026	A/00002-40	Hespeler Trail - Winston to Guelph Construction	$2,648,600
2026	A/00264-41	River Bluffs - Sanitary Sewer Upsizing	$222,600
2026	A/00379-41	Lisbon Pines - Sanitary Sewer Upsizing	$574,500
2026	A/00480-40	SE Galt Main Street Extension of Services	$752,800
2026	A/00486-41	Region - Fountain St N (Maple Grove to Kossuth) Phase 2	$3,850,000
2026	A/00507-40	SE Galt Sanitary Trunk East Boundary (Main St to Dundas PS)	$3,905,200
2026	A/00571-40	East Side Middle Block Rd (Fountain - NS Collector Rd)	$6,338,100
2026	A/00582-40	Park Dev - Maple Grove/Hespeler Rd	$1,035,500
2026	A/00587-40	Playground Replacement - Forbes Park	$354,900
2026	A/00606-40	Roof Replace - Durward Centre - Phase 2	$505,000
2026	A/00607-40	Heritage Reno - Ferguson Homestead and Lutz House	$757,500
2026	A/00617-40	Mountview and New Hope Columbarium Construction	$425,000
2026	A/00630-30	Infrastructure Design (2026)	$828,500
2026	A/00641-40	Playground Replacement - Willard Park	$606,000
2026	A/00643-40	Park Dev - South Point (Bosdale)	$1,200,000
2026	A/00644-30	Active Transportation Design - Avenue Road MUT (Gail Street to Franklin Boulevard)	$80,000
2026	A/00644-40	Active Transportation Const - Avenue Road MUT (Gail Street to Franklin Boulevard)	$371,700
2026	A/00647-10	Library Materials (2026)	$109,000

Year	Project Number	Project Name	Total Budget
2026	A/00648-10	Library Computer Equipment (2026)	$95,500
2026	A/00675-40	Elgin Street North (Glamis Road to CP Rail Crossing) Phase 1	$12,500,000
2026	A/00705-20	Strategic Plan	$159,200
2026	A/00720-40	Townline Road Reconstruction	$11,600,000
2026	A/00773-30	South East Parks Workshop Design	$242,000
2026	A/00784-40	Playground Replacement - Hill 60 Park	$202,000
2026	A/00847-40	Work Order Management System Enhancements (2026)	$100,000
2026	A/00865-21	Recreation Services Master Plan (2026)	$200,000
2026	A/00884-40	cityONE (SAP) Lifecycle Updates and Enhancements (2026)	$400,000
2026	A/00894-10	Equipment Growth (2026)	$1,957,600
2026	A/00902-10	Equipment Replacement (2026)	$5,885,000
2026	A/00928-10	Laptop/Desktop Replacement Lifecycle (2026)	$275,000
2026	A/00962-40	Witmer Pumping Station Upgrade- Construction	$1,500,000
2026	A/00989-40	Asphalt Resurfacing Program (2026)	$598,000
2026	A/01016-20	Transportation Master Plan Update	$225,000
2026	A/01085-40	Wellington St. S and Maple Ridge Road Reconstruction	$1,776,000
2026	A/01095-40	East Side Lands - Speedsville PS and Forcemain Upgrades	$1,740,800
2026	A/01101-40	Trail Bridges (2026)	$250,000
2026	A/01104-40	Park Dev - Isherwood	$480,200
2026	A/01152-10	Light Fire Fleet (2026)	$240,000
2026	A/01174-41	Cooper Street Reconstruction (2026)	$5,004,100
2026	A/01182-40	Dayton St. Reconstruction	$2,049,100
2026	A/01198-30	River Road Sidewalk Design	$174,900
2026	A/01238-30	Design / Corporate Facilities (2026)	$70,000
2026	A/01240-40	West River Road Trunk Sanitary Access - Construction	$627,500
2026	A/01293-40	Blair Road Retaining Wall Construction (2026)	$1,200,000
2026	A/01307-40	Water Service Replacements Citywide	$3,500,000
2026	A/01309-41	Watermain Decommissioning Along Grand River	$500,000
2026	A/01316-40	Watermain Lining Citywide (2026)	$3,804,000
2026	A/01317-40	Playground Replacement - Hespeler Optimist Park (2026)	$219,800
2026	A/01318-30	Storm Pond Design (2026)	$133,300
2026	A/01319-40	Sanitary Lining Citywide (2026)	$1,095,100
2026	A/01352-40	Jacob's Landing Stone Tower	$404,000
2026	A/01356-40	Hespeler Skate Park Implementation	$550,000
2026	A/01386-30	Snow Storage Facility EA, Design, & Permits	$165,000
2026	A/01399-40	BOC Overhead Doors	$689,700
2026	A/01401-40	Roof Replace - Lutz House	$94,100
2026	A/01453-40	Laneway Renewal Program (2026)	$352,900
2026	A/01478-40	Fire Station 5 Windows and Doors	$147,300

Year	Project Number	Project Name	Total Budget
2026	A/01483-40	Soper Park Outdoor Pool Construction	$6,000,000
2026	A/01489-40	Saginaw Parkway at Green Vista Drive Intersection Improvements â€“ Construction (2026)	$850,000
2026	A/01533-40	Parking Digitization and Service Enhancement	$75,000
2026	A/01541-21	Recreation Facilities Action Plan â€“ Phase 2	$100,000
2026	A/01556-20	Stormwater Master Plan	$350,000
2026	A/01557-40	Water Meter Replacement Program (2026)	$849,000
2026	A/01584-30	New Cricket Field Design	$175,000
2026	A/01602-41	Communitech Partnership - Phase 2	$50,000
2026	A/01608-20	Beaverdale/Chiligo Master Environmental Servicing	$210,000
2026	A/01619-40	WG Johnson Pool Amenity	$150,000
2026	A/01622-40	Hespeler Arena Energy Reduction	$1,359,100
2026	A/01628-30	Jacob Hespeler Secondary School Field Refurbishments Design	$90,000
2026	A/01657-11	Fire Fighting Equipment Phase 2	$68,700
2026	A/01658-11	Public Safety Equipment Phase 2	$62,000
2026	L/00002-10	Library Materials - Replacement (2026)	$660,650
2027	A/00445-40	Region - Ainslie St	$7,020,000
2027	A/00465-42	North Boxwood Trail - Development Phase 3	$852,500
2027	A/00509-40	SE Galt Infrastructure Upsize	$2,262,800
2027	A/00519-40	Renovation - City Hall	$653,000
2027	A/00537-40	SE Galt Wesley Blvd San & WM upsizing (to Vanier Dr)	$1,639,000
2027	A/00543-40	Parking Lot Renewal - Water North Lot	$320,300
2027	A/00553-40	Heritage Reno - Hespeler Town Centre	$2,171,500
2027	A/00621-40	Fire Station 4 Expansion Construction	$3,012,500
2027	A/00622-10	Bunker Gear (New Personnel)	$126,000
2027	A/00639-40	Playground Replacement - Byton Lane Park	$134,000
2027	A/00640-40	Playground Replacement - Morva Rouse Park	$134,000
2027	A/00649-40	Bridge & Culvert Renewal (2027)	$1,099,600
2027	A/00652-30	Infrastructure Design (2027)	$836,200
2027	A/00654-40	Server & Infrastructure	$200,000
2027	A/00655-40	Storage Systems Life Cycling	$200,000
2027	A/00661-10	Library Materials (2027)	$109,000
2027	A/00662-10	Library Computer Equipment (2027)	$425,500
2027	A/00675-41	Elgin Street North (Glamis Road to CP Rail Crossing) Phase 2	$8,085,000
2027	A/00718-40	Parking Lot Renewal - Westminister Lot	$329,800
2027	A/00745-20	DC and CBC Update (2027)	$156,000
2027	A/00849-40	cityONE (SAP) Enhancements and Assessment (2027)	$300,000
2027	A/00853-40	Work Order Management System Enhancements (2027)	$100,000
2027	A/00874-40	Library Roof Replace - Queen Square (86)	$126,300
2027	A/00877-50	Library Website Upgrade (2027)	$100,000

Year	Project Number	Project Name	Total Budget
2027	A/00903-10	Equipment Replacement (2027)	$4,240,000
2027	A/00903-11	Equipment Growth (2027)	$885,300
2027	A/00929-10	Laptop/Desktop Replacement Lifecycle (2027)	$275,000
2027	A/00940-40	Playground Replacement - Studiman Park	$227,000
2027	A/00942-40	Playground Replacement - John Erb Park	$225,200
2027	A/00956-40	Trail Renewal - Dan Spring Way	$700,000
2027	A/00990-40	Asphalt Resurfacing Program (2027)	$826,600
2027	A/00994-40	Rural Road Resurfacing Program (2027)	$343,100
2027	A/01018-30	Bishop St N (Franklin to Can-Amera) - Design	$331,400
2027	A/01059-40	Cambridge Dog Park Implementation	$530,000
2027	A/01084-40	Henry Serviss and McAuslan St Reconstruction	$4,783,700
2027	A/01093-40	East Side Lands - Speedsville Road Watermain	$503,400
2027	A/01094-40	East Side Lands - Speedsville Road Sanitary Sewer	$2,140,000
2027	A/01102-40	Trail Bridges (2027)	$212,500
2027	A/01114-40	Parking Lot Renewal - King St Lot	$199,700
2027	A/01116-40	Active Transportation Const - Dunbar Rd Phase 3	$589,100
2027	A/01121-40	Concession Road Protected Bike Lanes Design	$122,700
2027	A/01129-10	Utility Easement Acquisition (2027)	$150,000
2027	A/01137-40	BOC - Concrete Floor Drainage Upgrades	$1,089,000
2027	A/01153-10	Light Fire Fleet (2027)	$534,700
2027	A/01155-10	Light Fire Fleet (2027)	$369,700
2027	A/01159-40	Hespeler Pedestrian Bridge Construction	$4,216,400
2027	A/01179-40	Ramore St. and Gilholm Ave. Reconstruction	$2,586,000
2027	A/01180-40	Moore St. and Hamilton St. Reconstruction	$3,490,600
2027	A/01196-30	East Side Lands Speedsville Road Design (Maple Grove to Middle Block)	$1,199,800
2027	A/01198-40	River Road Sidewalk Construction	$2,036,500
2027	A/01207-40	Churchill Park and Birkinshaw Park Path Lighting (2027)	$250,000
2027	A/01276-40	Fountain St Soccer Playground	$269,600
2027	A/01301-21	North Cambridge Collector Road Class EA	$220,500
2027	A/01312-40	Water Service Replacements Citywide (2027)	$3,841,200
2027	A/01314-40	Playground Replacement - Domm Park (2027)	$219,500
2027	A/01322-40	Storm Pond Rehabilitation (2027)	$776,600
2027	A/01323-40	Sewer Lining Citywide	$1,329,300
2027	A/01323-41	Storm Lining Citywide	$545,900
2027	A/01324-40	Watermain Lining Citywide (2027)	$1,707,000
2027	A/01362-40	Parking Lot Renewal - St. James Church Lot	$103,900
2027	A/01369-40	Library Boiler Replacement (Preston)	$97,000
2027	A/01400-40	Roof Replace - Johnson Centre	$688,000

Year	Project Number	Project Name	Total Budget
2027	A/01414-10	Reconnaissance Drone	$50,000
2027	A/01454-40	Laneway Renewal Program (2027)	$360,400
2027	A/01505-20	Sports Development & Tourism Action Plan	$115,000
2027	A/01558-40	Water Meter Replacement Program (2027)	$867,000
2027	A/01584-40	New Cricket Field A	$700,000
2027	A/01584-41	New Cricket Field B	$700,000
2027	A/01606-10	Trail Easement Acquisition (2027)	$150,000
2027	A/01609-40	Brand Renewal	$200,000
2027	A/01628-40	Jacob Hespeler Secondary School Field Refurbishments	$1,325,000
2027	A/01657-12	Fire Fighting Equipment Phase 3	$67,700
2027	A/01658-12	Public Safety Equipment Phase 3	$52,000
2027	A/01672-30	Active Trans Design - Samuelson St/Clyde Rd (Beverley-Franklin) MUT	$100,000
2027	L/00003-10	Library Materials - Replacement (2027)	$660,650
2028	A/00239-41	Branchton Road - Watermain and Sanitary Sewer	$1,048,800
2028	A/00532-40	Playground Replacement - Soper Park	$750,000
2028	A/00544-30	East Side Lands Middle Block Road Design (Fountain to Speedsville)	$1,642,500
2028	A/00575-40	Indoor Pool Infrastructure: Johnson	$606,000
2028	A/00597-20	Sanitary Sewer Model Calibration	$172,300
2028	A/00656-40	Disaster Recovery Site Enhancement	$200,000
2028	A/00721-40	Region - Eagle St (Concession/Speedsville Rd to King St)	$1,440,000
2028	A/00724-40	Region - King St/Coronation Blvd (Water St to Bishop St)	$2,380,000
2028	A/00725-40	Region - Grand Ave (Cedar St to St. Andrew St)	$610,000
2028	A/00730-30	Infrastructure Design (2028)	$844,400
2028	A/00771-40	Churchill Park Picnic Pavillion/Pond Repairs	$530,000
2028	A/00773-40	South East Parks Workshop Construction	$2,585,800
2028	A/00782-40	Playground Replacement - Grills Park	$106,600
2028	A/00783-40	Playground Replacement - Heise Park	$151,300
2028	A/00860-40	Work Order Management System Enhancements (2028)	$100,000
2028	A/00881-10	Library Materials (2028)	$109,000
2028	A/00882-10	Library Computer Equipment (2028)	$394,000
2028	A/00904-10	Equipment Replacement (2028)	$3,550,000
2028	A/00905-40	George Hancock Pool Decommissioning	$250,000
2028	A/00930-10	Laptop/Desktop Replacement Lifecycle (2028)	$340,000
2028	A/00938-40	Playground Replacement - Witmer Park	$190,400
2028	A/00941-40	Playground Replacement - Sturdy Park	$197,900
2028	A/00961-40	Riverside Pump Station Upgrade - Construction	$457,200
2028	A/00963-40	River Rd. Pumping Station: Reassessment	$150,000
2028	A/00991-40	Asphalt Resurfacing Program (2028)	$763,300

Year	Project Number	Project Name	Total Budget
2028	A/01035-30	Gateway Sign Replacement - Design	$50,000
2028	A/01078-40	Wellington St. and Brook St. Reconstruction	$7,497,100
2028	A/01132-30	Trail Bridge Design 3	$162,600
2028	A/01135-40	58 Ainslie St - Addition Removal	$75,000
2028	A/01141-40	Roof Refurb - Hespeler Arena	$1,274,400
2028	A/01142-40	Hespeler Arena Building System Replace	$303,000
2028	A/01156-10	Fire Fleet Apparatus (2028)	$213,700
2028	A/01184-40	Utility Corridor 195 Storm Replacement	$803,800
2028	A/01186-40	Veterans Way Reconstruction	$1,037,300
2028	A/01222-40	Avenue Road MUT (Frankling Boulevard to Chimney Hill Drive)	$80,000
2028	A/01227-40	DDC & Arts Centre Heritage Restoration North & West Facades	$333,300
2028	A/01325-40	Playground Replacement - Sim Ct Park (2028)	$179,900
2028	A/01326-40	Storm Pond Rehabilitation (2028)	$784,000
2028	A/01327-40	Sanitary Lining Citywide (2028)	$875,400
2028	A/01328-40	Watermain Lining Citywide (2028)	$1,567,100
2028	A/01373-10	Light Fire Fleet (2028)	$238,700
2028	A/01384-40	Main Street Reconstruction	$7,666,700
2028	A/01416-10	SCBA Cylinders and Firefighter Locator System	$80,000
2028	A/01449-40	Highland Park, Russ Street, Dolph St Watermain Replacement	$9,423,200
2028	A/01455-40	Laneway Renewal Program (2028)	$376,900
2028	A/01506-20	Environics: Demographics Analysis for Delivery of Service	$120,000
2028	A/01559-40	Water Meter Replacement Program (2028)	$884,000
2028	A/01620-40	Fire Station 1 Washroom	$200,000
2028	A/01630-40	17 Cambridge Roof Replacement	$238,000
2028	A/01632-40	19 Cambridge St Roof Replacement	$309,800
2028	A/01671-42	Sidewalk Infill - Savage Drive	$415,000
2028	A/01672-40	Active Trans Const - Samuelson St/Clyde Rd(Beverley-Franklin) MUT	$230,000
2028	A/01673-30	Active Trans Design - Industrial Rd (Eagle-Dunbar) MUT	$100,000
2028	L/00004-10	Library Materials - Replacement (2028)	$660,650
2029	A/00024-40	Riverside Dam Construction	$19,300,000
2029	A/00465-43	North Boxwood Trail - Development Phase 4	$369,600
2029	A/00512-40	Langs Drive Culvert Replacement	$2,074,500
2029	A/00608-40	Fire Hall Infrastructure: Station 2	$198,000
2029	A/00631-20	Official Plan Review	$234,300
2029	A/00633-40	Relational Database Management System Upgrade	$200,000
2029	A/00638-40	Playground Replacement - Riverside Kin Corners Area	$138,600
2029	A/00678-41	Region - Myers Road: Phase 2	$1,220,000
2029	A/00710-40	Energy Management: Corporate Buildings (2029)	$111,100
2029	A/00732-40	Parking Lot Renewal - Queen Street Lot	$102,500

Year	Project Number	Project Name	Total Budget
2029	A/00774-30	Park Design - Soper and Victoria Park Tennis Lighting Design	$114,000
2029	A/00814-40	cityONE (SAP) Enhancements (2029)	$350,000
2029	A/00883-50	Library BAS Upgrade Queen Square	$424,200
2029	A/00931-10	Laptop/Desktop Replacement Lifecycle (2029)	$345,000
2029	A/00934-40	Playground Replacement - Arlington Park	$136,300
2029	A/00935-40	Playground Replacement - Churchill Park	$569,000
2029	A/00936-40	Playground Replacement - Lions Can	$341,900
2029	A/00937-40	Playground Replacement - DeCaro Park	$185,200
2029	A/00968-40	Bridge & Culvert Renewal (2029)	$989,400
2029	A/00969-40	Sustainable Infrastructure Renewal (2029)	$9,423,200
2029	A/00970-30	Infrastructure Design (2029)	$989,400
2029	A/00992-40	Asphalt Resurfacing Program (2029)	$803,700
2029	A/00995-40	Rural Road Resurfacing Program (2029)	$384,300
2029	A/01005-10	Library Materials (2029)	$109,000
2029	A/01006-10	Library Computer Equipment (2029)	$199,500
2029	A/01009-10	Bunker Gear Phase 1	$270,000
2029	A/01024-10	Equipment Replacement (2029)	$3,097,000
2029	A/01027-40	Work Order Management System Enhancements (2029)	$100,000
2029	A/01157-10	Fire Fleet Apparatus (2029)	$2,300,000
2029	A/01196-40	East Side Lands Speedsville Road (Maple Grove to Middle Block)	$10,798,600
2029	A/01201-40	Trail Dev - River Road Area	$152,100
2029	A/01214-40	Park Dev - River Road Area	$753,200
2029	A/01224-40	Trail Bridges (2029)	$549,200
2029	A/01277-10	Light Fire Fleet (2029)	$151,300
2029	A/01321-40	Playground Replacement - Hancock Park (2029)	$149,500
2029	A/01329-40	Playground Replacement - Mattamy Michigan Ave Park (2029)	$200,700
2029	A/01330-30	Storm Pond Design (2029)	$136,700
2029	A/01331-40	Sanitary Lining Citywide (2029)	$1,450,400
2029	A/01332-40	Watermain Lining Citywide (2029)	$1,648,100
2029	A/01448-40	Lincoln Ave and Cumming Ave Reconstruction	$6,445,500
2029	A/01450-40	Nelson Street, Augusta and Peck Street Reconstruction	$4,472,400
2029	A/01451-40	Samuelson Street Reconstruction	$5,328,800
2029	A/01456-40	Laneway Renewal Program (2029)	$383,400
2029	A/01554-40	Hwy 24 Pump Station Upgrade - Construction	$460,000
2029	A/01560-40	Water Meter Replacement Program (2029)	$902,000
2029	A/01634-40	Riverside Water Building Roof Replace	$142,000
2029	A/01635-40	102 Shefield Roof Replacement	$434,800
2029	A/01636-40	Lincoln Park Service Building Roof Replace	$86,900
2029	A/01670-31	Active Trans Design - Fisher Mills Rd (Scott Rd-Guelph) MUT	$120,000

Year	Project Number	Project Name	Total Budget
2029	L/00005-10	Library Materials - Replacement (2029)	$660,650
2030	A/00461-40	Roof Replace - Dickson Arena	$1,171,600
2030	A/00568-40	Chilligo Culvert Replacement	$732,700
2030	A/00659-40	Energy Management - Hespeler Arena	$1,212,000
2030	A/00709-40	Energy Management - Farmers Market Building	$121,200
2030	A/00714-41	Region - Dundas St Phase 3 (Briercrest to Franklin) & Main St (Franklin to Chalmers)	$3,860,000
2030	A/00719-40	Region - Pinebush Rd (Franklin Blvd to Hespeler Rd)	$1,100,000
2030	A/00774-40	Soper and Victoria Park Tennis Lighting Replacement	$363,000
2030	A/00833-30	cityONE (SAP) Enhancements (2030)	$350,000
2030	A/01017-20	Integrated Mobility Plan	$200,000
2030	A/01018-40	Bishop Street N (Franklin Blvd to Can-Amera Parkway) - Construction	$6,400,400
2030	A/01030-30	Milling Road Streetscaping Detailed Design	$318,000
2030	A/01048-10	Bunker Gear Phase 2	$270,000
2030	A/01089-40	Sustainable Infrastructure Renewal (2030)	$22,824,400
2030	A/01090-30	Infrastructure Design (2030)	$996,300
2030	A/01091-40	Asphalt Resurfacing Program (2030)	$837,800
2030	A/01111-40	Playground Replacement - Bechtel Park	$140,000
2030	A/01124-10	Library Materials (2030)	$109,000
2030	A/01125-10	Library Computer Equipment (2030)	$309,500
2030	A/01134-10	Equipment Replacement (2030)	$3,105,000
2030	A/01143-40	Building Systems Program (2030)	$1,010,000
2030	A/01144-40	Building Elements Program (2030)	$1,515,000
2030	A/01160-10	Laptop/Desktop Replacement Lifecycle (2030)	$350,000
2030	A/01161-40	Work Order Management System Enhancements (2030)	$100,000
2030	A/01216-40	Park Dev - iPort Subdivision	$1,355,600
2030	A/01220-40	Sanitary Pumping Stations Condition Assessment	$300,000
2030	A/01223-40	Trail Renewal - Soper Park Trail	$881,400
2030	A/01225-40	Trail Bridges (2030)	$291,200
2030	A/01272-40	Roof Replace (2030)	$50,000
2030	A/01333-40	Storm Pond Rehabilitation (2030)	$798,900
2030	A/01334-40	Sanitary Lining Citywide (2030)	$1,464,600
2030	A/01335-40	Watermain Lining Citywide (2030)	$1,997,100
2030	A/01336-40	Playground Replacement - Hilcrest Park (2030)	$161,900
2030	A/01337-40	Playground Replacement - Mattamy Mill Pond Park (2030)	$208,600
2030	A/01457-40	Laneway Renewal Program (2030)	$389,500
2030	A/01561-40	Water Meter Replacement Program (2030)	$920,000
2030	A/01626-40	Court Refurbishment - Laurence Street Pickle Ball, Multi Court and Tennis	$500,000

Year	Project Number	Project Name	Total Budget
2030	A/01641-40	Landreth Cottage Roof Replacement	$50,000
2030	A/01663-40	MDTs (Mobile Data Terminals) and RMS (Records Management System)	$80,000
2030	A/01670-41	Active Trans Const - Fisher Mills Rd (Scott-Guelph) MUT	$242,500
2030	A/01673-40	Active Trans Const - Industrial Rd (Eagle- Dunbar) MUT	$698,000
2030	A/01675-30	Trail Renewal Design - Churchill Park Trails	$93,000
2030	A/01681-20	City Wide Parking Review & Action Plan	$216,000
2030	L/00006-10	Library Materials - Replacement (2030)	$660,650
2031	A/00465-41	North Boxwood Trail - Development Phase 2	$518,700
2031	A/00544-40	East Side Middle Block Rd (Fountain St - Speedsville Rd)	$14,781,000
2031	A/00580-40	Roof Replace - Duncan McIntosh Arena	$1,460,500
2031	A/00717-40	Region - Parkhill St (Ainslie St to Water St)	$810,000
2031	A/00722-40	Region - Water St (Concession to Simcoe)	$3,800,000
2031	A/01050-40	Columbarium - Parklawn (2031)	$331,200
2031	A/01187-40	Bridge & Culvert Renewal (2031)	$1,008,700
2031	A/01188-40	Sustainable Infrastructure Renewal (2031)	$24,508,100
2031	A/01189-30	Infrastructure Design (2031)	$1,008,700
2031	A/01190-40	Asphalt Resurfacing Program (2031)	$1,065,600
2031	A/01193-40	City Share - Region Projects (2031)	$1,770,000
2031	A/01217-40	Park Dev - Treasure Hill North	$753,200
2031	A/01226-40	Trail Bridge Design 4	$185,800
2031	A/01234-40	Building Elements Program (2031)	$1,515,000
2031	A/01250-10	Library Materials (2031)	$109,000
2031	A/01251-10	Library Computer Equipment (2031)	$232,500
2031	A/01259-40	Work Order Management System Enhancements (2031)	$150,000
2031	A/01260-40	Amanda Roadmap Implementation (2031)	$150,000
2031	A/01261-40	cityONE (SAP) Lifecycle Updates and Replacements (2031)	$350,000
2031	A/01262-10	Laptop/Desktop Replacement Lifecycle (2031)	$360,000
2031	A/01263-40	GIS Roadmap Implementation (2031)	$100,000
2031	A/01270-40	Building Systems Program (2031)	$1,010,000
2031	A/01273-40	Roof Replace (2031)	$182,800
2031	A/01281-10	Equipment Replacement (2031)	$3,460,000
2031	A/01338-40	Storm Pond Rehabilitation (2031)	$807,200
2031	A/01339-40	Sanitary Lining Citywide (2031)	$1,479,400
2031	A/01340-40	Watermain Lining Citywide (2031)	$1,613,400
2031	A/01341-40	Playground Replacement - Brent Park (2031)	$240,400
2031	A/01342-40	Playground Replacement - Clochmohr Park (2031)	$176,700
2031	A/01376-10	Fire Fleet Apparatus (2031)	$1,560,000
2031	A/01407-40	Trail Renewal - Gordon Chaplin Park Trail	$237,400
2031	A/01429-10	Light Fire Fleet (2031)	$230,000

Year	Project Number	Project Name	Total Budget
2031	A/01447-40	Linear Park Confluence Lookout - Construction	$190,400
2031	A/01458-40	Laneway Renewal Program (2031)	$395,100
2031	A/01562-40	Water Meter Replacement Program (2031)	$937,000
2031	A/01627-40	Court Refurbishment- Forbes. John Erb and Santa Maria Park	$450,000
2031	A/01664-40	P25 Radio Replacement	$1,200,000
2031	A/01684-20	Cambridge Farmers Market 10 Year Update	$75,000
2031	L/00007-10	Library Materials - Replacement (2031)	$660,650
2032	A/00613-40	Playground Replacement - Riverside Front Area	$282,200
2032	A/00706-40	Roof Replace - Farmers Market Building	$303,500
2032	A/00723-40	Region - Clyde Rd (Dobbie Dr to Franklin Blvd)	$420,000
2032	A/00726-30	Downtown Cambridge Parking Structure Design	$563,100
2032	A/01051-40	Columbarium - Parklawn (2032)	$134,900
2032	A/01296-40	Bridge & Culvert Renewal (2032)	$1,018,600
2032	A/01297-40	Sustainable Infrastructure Renewal (2032)	$24,288,600
2032	A/01298-30	Infrastructure Design (2032)	$1,018,600
2032	A/01299-40	Asphalt Resurfacing Program (2032)	$1,131,700
2032	A/01305-40	City Share - Region Projects (2032)	$1,770,000
2032	A/01343-40	Playground Replacement - Griffiths Park (2032)	$240,400
2032	A/01344-30	Storm Pond Design (2032)	$141,000
2032	A/01345-40	Sanitary Lining Citywide (2032)	$1,493,900
2032	A/01346-40	Watermain Lining Citywide (2032)	$1,629,700
2032	A/01347-40	Playground Replacement - Riverside Park Accessible Play structure (2032)	$891,500
2032	A/01348-40	Playground Replacement - Dyck Park (2032)	$240,100
2032	A/01349-40	Playground Replacement - Perbeck Park (2032)	$158,300
2032	A/01350-40	Playground Replacement - Paul Peters Park (2032)	$178,500
2032	A/01355-20	DC and CBC Update (2032)	$156,000
2032	A/01366-40	Active Transportation - Grand Ave S. Protected Bike Lanes	$375,800
2032	A/01370-10	Library Materials (2032)	$109,000
2032	A/01371-10	Library Computer Equipment (2032)	$490,500
2032	A/01372-10	Library Website Upgrade	$100,000
2032	A/01374-10	Light Fire Fleet (2032)	$290,200
2032	A/01375-10	Equipment Replacement (2032)	$572,000
2032	A/01404-40	Roof Replace - City Hall	$1,247,100
2032	A/01405-40	Building Elements Program (2032)	$992,500
2032	A/01421-10	Work Order Management System Enhancements (2032)	$200,000
2032	A/01422-10	cityONE (SAP) Enhancements (2032)	$350,000
2032	A/01423-10	Network Equipment lifecycle/replacement (2032)	$350,000
2032	A/01424-40	Rural Road Resurfacing Program (2032)	$396,100

Year	Project Number	Project Name	Total Budget
2032	A/01459-40	Laneway Renewal Program (2032)	$400,500
2032	A/01433-40	Building Systems Program (2032)	$1,010,000
2032	A/01563-40	Water Meter Replacement Program (2032)	$954,000
2032	A/01642-40	220 Water Storage Building Roof Replace	$205,500
2032	A/01643-40	Hespeler Arena Energy Reduction	$980,000
2032	A/01674-30	Trail Design - 725 Main St	$60,000
2032	A/01675-40	Trail Renewal - Churchill Park Trail Realignment	$90,000
2032	A/01675-41	Trail Renewal - Churchill Park Trail (MacDonald to Glenview)	$72,000
2032	A/01675-42	Trail Renewal - Churchill Park (Mtce path to Percy Hill)	$71,000
2032	A/01716-10	Fire SCBA Replacement	$1,000,000
2032	L/00008-10	Library Materials - Replacement (2032)	$660,650
2033	A/00974-40	Sanitary Sewer Model Calibration (2033)	$172,300
2033	A/01403-30	Fire Training Facility - Design	$769,000
2033	A/01460-40	Laneway Renewal Program (2033)	$405,400
2033	A/01462-40	City Share - Region Projects (2033)	$1,770,000
2033	A/01465-40	Bridge & Culvert Renewal (2033)	$1,028,500
2033	A/01466-40	Sustainable Infrastructure Renewal (2033)	$24,495,200
2033	A/01467-30	Infrastructure Design (2033)	$1,028,500
2033	A/01468-40	Asphalt Resurfacing Program (2033)	$900,400
2033	A/01469-40	Storm Pond Rehabilitation (2033)	$823,600
2033	A/01470-40	Sanitary Lining Citywide (2033)	$1,510,700
2033	A/01471-40	Watermain Lining Citywide (2033)	$1,647,200
2033	A/01485-40	Building Elements Program (2033)	$1,199,900
2033	A/01486-40	Building Systems Program (2033)	$1,199,900
2033	A/01487-10	Fire Fleet Growth (2033)	$395,000
2033	A/01492-40	Trail Renewal (2033)	$500,000
2033	A/01493-40	Trail Bridges (2033)	$300,000
2033	A/01494-40	Active Transportation (2033)	$400,000
2033	A/01496-10	Library Materials (2033)	$109,000
2033	A/01497-10	Library Computer Equipment (2033)	$609,000
2033	A/01498-40	Library HVAC Replacement (Hespeler)	$368,700
2033	A/01508-10	Equipment Replacement (2033)	$3,145,000
2033	A/01523-40	GIS Roadmap Implementation (2033)	$150,000
2033	A/01524-40	Laptop/Desktop Replacement Lifecycle (2033)	$250,000
2033	A/01525-40	Work Order Management System Enhancements (2033)	$200,000
2033	A/01526-40	cityONE (SAP) Enhancements (2033)	$350,000
2033	A/01527-40	Amanda Lifecycle Updates and System Enhancements	$400,000
2033	A/01528-40	SharePoint Lifecycle Updates and System Enhancements	$150,000
2033	A/01564-40	Water Meter Replacement Program (2033)	$900,000

Year	Project Number	Project Name	Total Budget
2033	A/01644-40	Soper Park Workshop Roof Replacement	$50,000
2033	A/01569-20	Strategic Plan	$175,000
2033	L/00009-10	Library Materials - Replacement (2033)	$660,650
2034	A/01565-40	Water Meter Replacement Program (2034)	$900,000
2034	A/01571-40	Laneway Renewal Program (2034)	$405,400
2034	A/01572-40	Bridge & Culvert Renewal (2034)	$1,028,500
2034	A/01573-40	Sustainable Infrastructure Renewal (2034)	$24,495,200
2034	A/01574-30	Infrastructure Design (2034)	$1,028,500
2034	A/01575-40	Asphalt Resurfacing Program (2034)	$900,400
2034	A/01576-30	Storm Pond Rehabilitation Design (2034)	$141,000
2034	A/01577-40	Sanitary Lining Citywide (2034)	$1,510,700
2034	A/01578-40	Watermain Lining Citywide (2034)	$1,647,200
2034	A/01597-10	Equipment Replacement (2034)	$1,096,000
2034	A/01599-10	Library Computer Equipment (2034)	$199,500
2034	A/01600-40	Library Roof Replacement Queens Square	$165,000
2034	A/01601-10	Library Materials (2034)	$109,000
2034	A/01607-40	City Share - Region Project (2034)	$1,770,000
2034	A/01645-40	Kin Canada Building Roof Replacement	$376,200
2034	A/01646-40	Magnotta Building Roof Replacement	$734,200
2034	A/01647-40	Animal Pound Building Roof Replacement	$275,100
2034	A/01648-40	Churchill Park Workshop Roof Replacement	$216,500
2034	A/01649-40	Fashion Museum Roof Replacement	$395,300
2034	A/01650-40	30 Milling Rd Roof Replacement	$355,300
2034	A/01651-40	Riverbluffs Rowing Club Roof Replacement	$262,800
2034	A/01652-40	Riverside Greenhouse Newland Pool Roof	$68,000
2034	A/01653-40	Forbes Park Bandshell Roof Replace	$84,000
2034	A/01655-40	Building Elements Program (2034)	$1,300,000
2034	A/01656-40	Building Systems Program (2034)	$1,300,000
2034	A/01665-10	Fire Fighting Equipment Phase 1	$65,000
2034	A/01666-10	Fire Fleet Apparatus (2034)	$1,700,000
2034	A/01667-20	Fire Master Plan	$100,000
2034	A/01668-10	Light Fire Fleet (2034)	$60,000
2034	A/01669-10	Public Safety Equipment Phase 1	$76,000
2034	A/01674-40	Trail Construction - 725 Main St	$120,000
2034	A/01678-40	Trail Bridges (2034)	$300,000
2034	A/01679-40	Trail Renewal (2034)	$500,000
2034	A/01682-20	Arts & Culture Action Plan 10 Year Update	$100,000
2034	A/01683-20	Placemaking Study Update	$100,000
2034	A/01717-10	Bunker Gear Phase 1	$275,000

Year	Project Number	Project Name	Total Budget
2034	L/00010-10	Library Materials - Replacement (2034)	$660,650

R.2 Unfunded Project List

The following table presents the unfunded project list from the 2025 Capital Forecast. Each year the request for capital funding is greater than the available funding, resulting in an infrastructure gap. With each budget projects are reviewed and evaluated, using the Capital Investment Prioritization Criteria (Appendix Q). From year-to-year, projects may move between the unfunded and funded list based on corporate strategic initiatives, funding availability, infrastructure risk, and other factors. The unfunded projects are recognized as important and necessary work, however, if new sources of funding are not identified these projects will not go forward.

Year	Project Number	Project Name	Total Budget
2026	A/00471-41	Fountain Soccer Netting	$222,200
2026	A/00540-40	Bridge & Culvert Waterproofing Renewal	$1,472,500
2026	A/00557-41	Riverside Accessible Ball Diamond Washroom	$500,000
2026	A/01007-40	Library HVAC Replacement Queen Square	$277,800
2026	A/01295-40	Keffer St. and Laneway 13 Rehabilitation (2026)	$1,741,200
2026	A/01300-50	Old Post Office Projection Equipment (2026)	$600,000
2026	A/01351-42	Optimist Park Washroom Unit	$212,100
2026	A/01365-40	Dickson Hill Globe Light LED Retrofit	$551,500
2026	A/01379-10	EV Charging Stations (2026)	$80,000
2026	A/01382-10	Land Acquisition - Confidential	$7,000,000
2026	A/01413-40	Fire Station 5 Paving	$50,000
2026	A/01475-40	Dickson Arena Restoration	$234,000
2026	A/01484-40	City Hall Second Floor - Mayor & Council Area	$149,500
2026	A/01491-40	New Street Light Installations (2026)	$85,000
2026	A/01503-10	Fire Station #3 Relocation	$2,500,000
2026	A/01581-40	Riverside, Central & Optimist Park Splashpad Refurb	$250,000
2026	A/01585-30	Sportsfield Light LED Conversion- Design	$80,000
2026	A/01586-40	Compass Trail Park Turf Remediation	$100,000
2026	A/01589-20	Galt Special Policy Area Review	$200,000
2026	A/01593-20	Street light inventory & Condition Assessment	$250,000
2026	A/01614-40	Fire Station 1 Lunchroom and Lounge	$100,000
2026	A/01625-40	Court Refurbishment - Brent Park Basketball	$180,000
2026	A/01670-30	Active Trans Design - Fisher Mills Rd (Hespeler - Scott) MUT	$120,000
2026	A/01671-41	Sidewalk Infill - Isherwood Drive	$110,000
2026	A/01677-40	Traffic Calming Implementation (2026)	$150,000
2027	A/00420-41	Karl Homuth Arena - Demolition	$400,000
2027	A/00635-40	Roof Replace - Hespeler Arena	$505,000
2027	A/00643-41	Park Dev - Playground South Point	$520,000

Year	Project Number	Project Name	Total Budget
2027	A/00683-31	Mill Race Park Revitalization Design and Park Plan	$197,000
2027	A/00741-20	Heritage Master Plan Review and Update	$216,500
2027	A/00880-40	Library Phone System Replacement	$100,000
2027	A/01012-40	John Dolson Pool - Demolition	$200,000
2027	A/01267-40	Budget Software/Application Project	$270,000
2027	A/01377-10	EV Charging Stations (2027)	$80,000
2027	A/01386-40	Snow Storage Facility Construction	$3,879,300
2027	A/01477-40	Farmers Market Elevator	$261,300
2027	A/01502-10	Fire Station #2 Relocation	$2,500,000
2027	A/01503-30	Fire Station #3 Relocation - Design	$837,800
2027	A/01579-40	Park Bench Replacements	$210,000
2027	A/01580-40	Central Park Pathway Renewal	$150,000
2027	A/01585-40	Sportsfield Lighting LED Conversion	$2,600,000
2027	A/01587-30	Riverside Park Heritage Entrance Gates Rehabilitation Design	$60,000
2027	A/01616-40	Central Park Washroom Unit	$212,100
2027	A/01621-40	Churchill Workshop, Riverside Skateboard WC/Storage Roof Replacement	$99,500
2027	A/01624-40	Accessible Shower David Durward Centre	$80,000
2027	A/01629-40	637 King St E Roof Replacement	$225,200
2027	A/01631-40	Washroom Replace Soper Tennis Courts	$550,000
2027	A/01670-40	Active Trans Const- Fisher Mills Rd (Hespeler- Scott) MUT	$150,500
2028	A/00478-40	Library Asbestos Abatement Queen Square	$439,400
2028	A/00488-40	Salisbury Avenue Culvert Replacement	$1,214,700
2028	A/00491-40	Dickson St Streetscaping	$4,351,100
2028	A/00841-40	cityONE (SAP) Lifecycle Updates and Replacements (2028)	$350,000
2028	A/01002-40	Building Envelope Improv 17 Cambridge St Ph2	$336,600
2028	A/01197-30	Core Area Decorative Bridge Lighting Design	$100,800
2028	A/01218-41	Riverside Park Roads Construction: Rogers Dr.	$2,500,000
2028	A/01238-40	Churchill Accessible Washroom Facility	$375,000
2028	A/01249-40	Library Roof Replace - Hespeler	$434,300
2028	A/01257-40	Parking Lot Renewal - Civic Lot	$542,200
2028	A/01378-10	EV Charging Stations (2028)	$80,000
2028	A/01382-11	Land Acquisition - Confidential	$7,000,000
2028	A/01396-40	Soccer Dome Replacement	$560,600
2028	A/01397-40	ARC Foundation Work and Deck Replacement	$447,200
2028	A/01402-40	Roof Replace - Water Street Workshop	$150,400
2028	A/01502-30	Fire Station #2 Relocation - Design	$757,800
2028	A/01582-40	Churchill Park Community Garden Replacement	$50,000
2028	A/01587-40	Riverside Park Heritage Entrance Gates Rehabilitation	$250,000

Year	Project Number	Project Name	Total Budget
2028	A/01633-40	Soper Park Workshop Washroom Replace	$550,000
2028	A/01720-40	Winter Materials Storage Facility Replacement	$9,800,000
2029	A/00683-41	Mill Race Park Revitalization	$1,979,600
2029	A/00742-20	Urban Design Guidelines	$233,000
2029	A/00744-20	Zoning By-Law Review	$211,000
2029	A/00787-20	Asset Management Plan - 5 year update	$225,000
2029	A/00920-20	Update Economic Development Review and Action Plan	$126,900
2029	A/01035-40	Gateway Sign Replacement	$200,000
2029	A/01192-20	Strategic Plan	$172,300
2029	A/01215-40	Park Dev - River Mill Subdivision	$1,506,300
2029	A/01218-40	Riverside Park Roads Construction: Internal Ring Rd.	$1,300,000
2029	A/01238-41	Renovation - Fire Station 3 and Allan Reuter Centre	$275,000
2029	A/01268-40	Building Elements Program (2029)	$1,515,000
2029	A/01269-40	Building Systems Program (2029)	$1,010,000
2029	A/01271-40	Roof Replace (2029)	$636,300
2029	A/01447-30	Linear Park Confluence Lookout - Design	$49,000
2029	A/01503-40	Fire Station #3 Relocation - Construction	$9,189,600
2029	A/01638-40	Kins Complex WC/Canteen/CR Roof Replace	$511,300
2029	A/01639-40	Riverbluffs Rowing Club Roof Replace	$170,700
2029	A/01719-40	Court Refurbishment - Willard Multi Court	$100,000
2030	A/01197-40	Core Area Decorative Bridge Lighting Implementation	$946,500
2030	A/01502-40	Fire Station #2 Relocation - Construction	$8,832,700
2030	A/01640-40	BOC Building Roof Replacement	$3,107,100
2032	A/01030-40	Milling Road Streetscaping Implementation	$3,841,200