2024 Interim Asset Management Plan

City of Cambridge

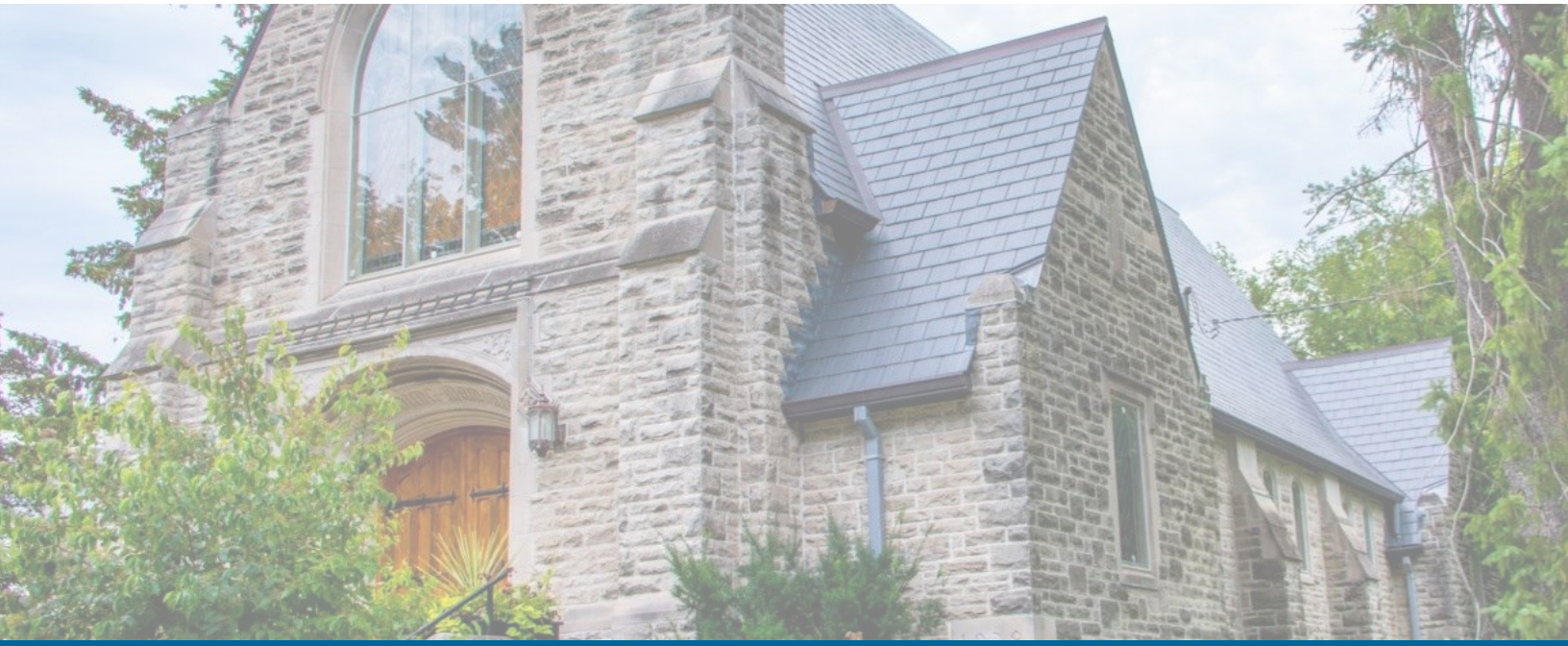
June 2024

Document review and approval

Revision history

Version	Author	Date	Revision

EXECUTIVE SUMMARY



Executive Summary

The City of Cambridge is responsible for providing our communities of approximately 152,130 residents with essential services needed to realize our vision of a place for people to prosper-alive with opportunity. Our infrastructure assets with a replacement value of $4.2 billion are the foundation for delivery of these vital services and we must therefore ensure appropriate investment is planned to renew our assets and enhance our portfolio as needed to maintain these services.

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

With the introduction of Ontario Regulation 588/17 for Asset Management, we have furthered our approaches to develop an updated asset management plan that is fully compliant with requirements of the second regulation milestone in July 2024. At the same time, we have undertaken an assessment to determine areas in need of additional development to achieve compliance and will be implementing improvement plans to develop the capabilities needed to ensure compliance of the final regulation milestone in July 2025.

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, however maintaining a Good condition rating overall. In 2017, approximately 74% of assets rated as being in very good or good condition, which has since fallen to 70.3%. Meanwhile, in 2017 the City had 9% of its assets rated as in poor or very poor condition, and this has since increased to 13.9%.

The current condition of our infrastructure assets informs the analysis of the financial investment needed for asset renewal to sustain the current level of service over the 10-year planning period. The resulting analysis for

this AMP indicates a total investment need of $872 million for all service areas in the period 2024-2033.

Our Capital Investment Plan 2024-2033 draws on multiple funding sources including capital levies, water and wastewater capital reserves, federal gas tax grants, development charges and other reserves to fund $586.3 million of these needs. In addition, the plan also has a provision of $139.7 million ($87.2 million of growth funded debt and $52.7 million of tax supported debt) over next 10 years in debt financing to minimize infrastructure financing gap. Our drinking water and wastewater infrastructure needs are fully funded through the long-range financial plans for the 10-year period to 2033. The resulting gap between our assessed investment needs ($872 million) and current capital investment funding ($726 million) demonstrates that we are challenged to meet investment needs in key areas such as transportation, environmental services, recreation, and resource management with a funding gap of 146 million.

We continuously assess opportunities for additional funding options and revenue streams to address our funding gaps. We have assessed a range of funding options and made progress to meet the funding gap identified through this asset management plan, these includes consideration of stormwater management funding, ongoing review of user rates and fees, approval of special infrastructure levies and increased capital levies, debt financing, sponsorship strategies and public private partnerships among others. We will continue to review the effectiveness of these strategies and report on our progress to utilize these sources for management of our funding gap in future revisions of our Asset Management Plan.

We are pleased to present an asset management plan to our communities and stakeholders that is fully compliant with all requirements of the regulation milestones for 2024. As we progress to the final milestone, we will ensure a well governed plan that manages implementation risks to meet our outstanding requirements in advance of the upcoming milestones and support our efforts to close our financial gap, maintain and / or improve our levels of service and enhance interaction with our communities about the services we deliver.

Table of Contents

Figures

Tables

INTRODUCTION

Introduction

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 $4.2 billion as of 2023. 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.

Asset Management Plan Purpose

This AMP has been drafted in compliance with O. Reg. 588/17, related to requirements for July 1, 2024 and is a supplementary document to the 2019 Asset Management Plan. 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:

- **Commitment and Consistency:** Committing the City to support the implementation of asset management methods that are consistent with our goals and objectives while ensuring consistency of the practices implemented.
- **Transparency and Accountability:** Provide transparency and accountability to stakeholders regarding our decision-making processes, which combine strategic plans, budgets, service levels and risk.

- **Stakeholder Communication:** Communicate the endorsed asset management principles and approach to stakeholders.
- **Service Sustainability & Affordability:** Embed asset management principles to ensure a sustainable approach to service delivery that delivers optimal value for our stakeholders while maintaining affordability.

Asset Management Plan Assumptions and Limitations

This Asset Management Plan is developed based on the best available information and by employing professional judgement and assumptions to address gaps where necessary.

Assumptions:

- The scope of this AMP covers the assets directly owned by the City of Cambridge.
- All costs (including in the financial strategy) are presented in 2023 dollars, unless specified otherwise.
- This AMP assumes that the current budgets are allocated with the goal to meet current needs for non-infrastructure, operations and maintenance, growth, and service improvement activities to maintain current levels of service. It should be noted that the current level of service funding increases the risk that the current level of service cannot be maintained over a longer period.

O.Reg. 588/17 Overview

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 1.

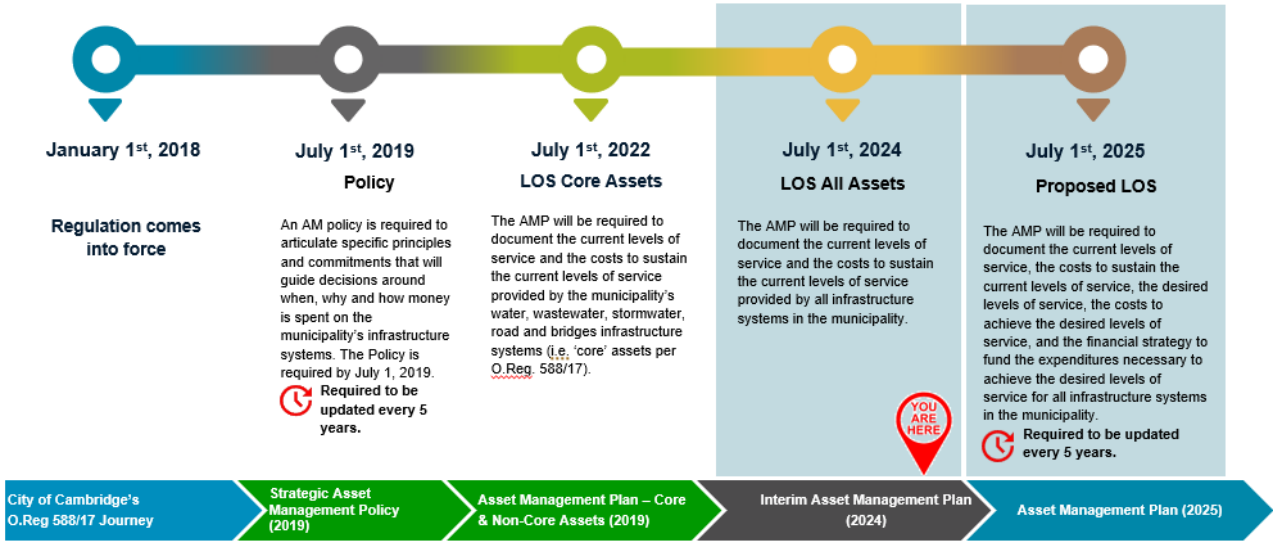


Figure 1: O. Reg. 588/17 Milestones

This asset management plan will meet the regulatory requirements for the 2024 O. Reg. 588/17 milestones. The 2025 asset management plan will include recommendations on proposed levels of service and the funding required to meet them, meeting the remaining regulatory requirements.

State of Infrastructure

The condition and state of assets is routinely monitored through data collection processes.

Although the City has records on assets owned by other public and private authorities in the asset registry system, the assets and replacement values reported in Table 1 below and in this interim AMP only reflect the assets owned by the City of Cambridge. The City owns core and non-core assets, both of which are in this plan. As defined by the O. Reg. 588/17, a core asset is any municipal infrastructure asset that is a water asset, wastewater asset, stormwater management asset, road, or bridge or culvert. All remaining assets in this AMP are defined as non-core.

Table 1: Asset Portfolio Summary

Service Function / Asset Class	Asset Quantity	Average Age	Replacement Cost ('000s)	Condition
Transportation				
Active Transportation	688 km of sidewalk 129 km of trails 51 pedestrian bridges 10 km of walkways	30 years	$202,346	Good
Roads	1,032 lane-km of pavement 30 bridges 11,570 streetlights 656 retaining walls 4.6 km of guiderails	36 years	$603,970	Good
Parking	25 parking lots	16 years	$3,960	Good
Environmental Services				
Stormwater	120 stormwater management facilities 1,241 culverts 397 km of stormwater pipes 3 dams	31 years	$852,571	Good
Drinking Water	40,346 water meters 553 km of water pipes	35 years	$815,472	Fair
Wastewater	21 pumping stations 559 km of wastewater pipes	34 years	$819,738	Good
Emergency Services				
Fire Protection	6 fire halls 5 parking lots 39 fleet vehicles/boats	40 years 7 years	$63,135	Good
Parks				
Cemeteries	17,700 sq.ft. buildings 17 columbaria 9 km of roads	N/A	$14,234	Good

Service Function / Asset Class	Asset Quantity	Average Age	Replacement Cost ('000s)	Condition
Parks & Outdoor Recreation	26 urban green & urban squares 26 trailheads 18 community parks, 57 neighborhood parks, 1 leash free dog park 892 ha of park land area; including 650 ha of natural lands (wetlands, woodlands, natural corridors) 181 ha developed land, and 61 ha recreational land 101 sportfields, 73 playgrounds, 11 splash pads	Park Facilities: 34 years Outdoor Recreation: 21 years	$87,047	Good
Forestry & Horticulture	3 greenhouses 61,533 Trees	20 years	$160,736	Good
Recreation & Culture				
Indoor Recreation & Culture	6 arenas with 7 ice pads 2 indoor pools, 2 outdoor pools 1 soccer dome 6 community centres 2 museums, 2 arts-theatres 1 market 17 recreational parking lots	52 years	$315,607	Good
Libraries	5 libraries	36 years	$74,660	Good
Resource Management				
Corporate Facilities	3 corporate facilities 9 operations facilities 10 parking lots 41 maintenance and storage facilities 9 corporate leased facilities	N/A	$151,134	Good

Service Function / Asset Class	Asset Quantity	Average Age	Replacement Cost ('000s)	Condition
Fleet & Equipment[1]	263 fleet vehicles 296 equipment assets	N/A	$44,521	Poor
Information and Communication Technology Infrastructure	572 computers 585 cell phones/tablets 45 TVs Diverse software applications	N/A	$27,200	Very Good
Total			**$4,236,269**	**Good**

The City's asset portfolio is comprised of a total of $4.2 billion of assets (replacement cost as of 2023), with Stormwater, Wastewater, Water, and Transportation assets accounting for the majority of the portfolio and Figure 2 and Figure 3 provides a summary of assets owned by the City of Cambridge based on replacement value by service function, and asset classes, respectively.

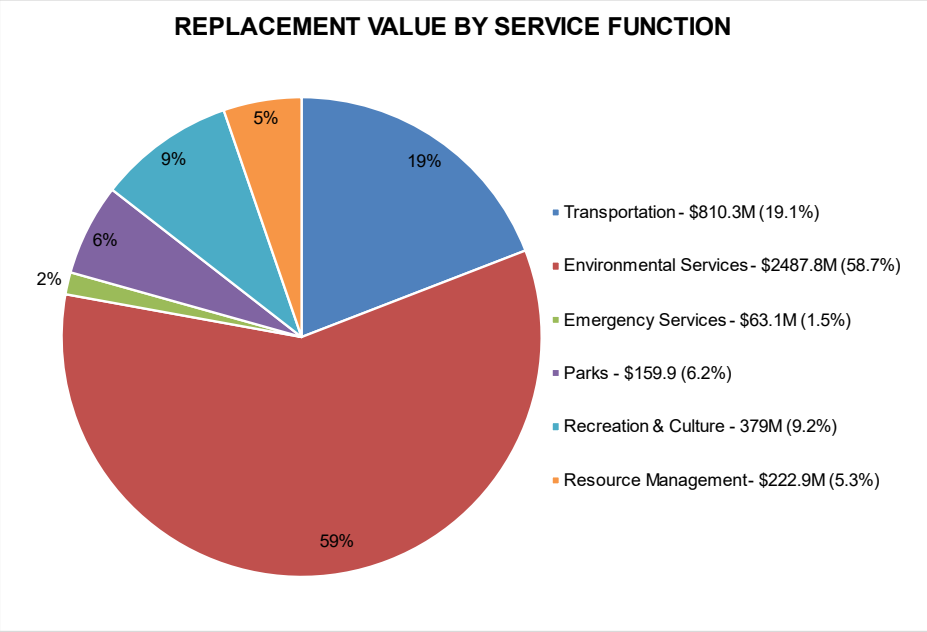


Figure 2: Replacement Value by Service Function

[1] Fleet assets worth $8.7M are approved for replacements and currently on-order waiting for delivery. Once these assets are in operations the overall fleet asset condition will change to Fair.

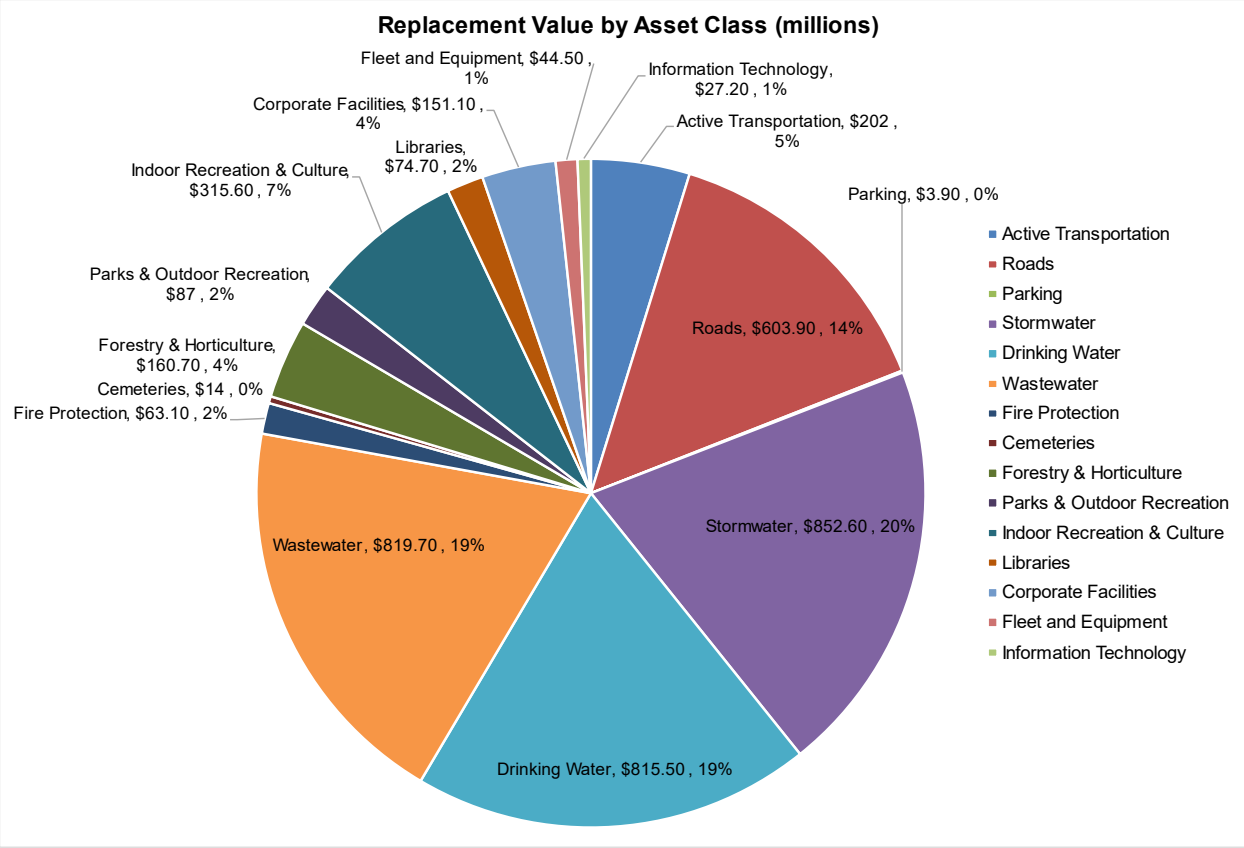


Figure 3: Replacement Value by Asset Class

Asset condition was determined for each asset using the condition rating scale shown below in Table 2.

Table 2: 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

Condition	Description	Source
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

The condition distribution of the asset portfolio is shown in Figure 4. The majority of assets are in fair or better condition, which accounts for **84%** of the portfolio. Currently, approximately **70.3%** of assets are in good or very good condition. The City has seen a continued deterioration in condition, as in 2017 approximately **74%** of assets were in good to very good condition. The percentage of assets in poor or very poor condition has increased from **9%** in 2017 to **13.9%** currently.

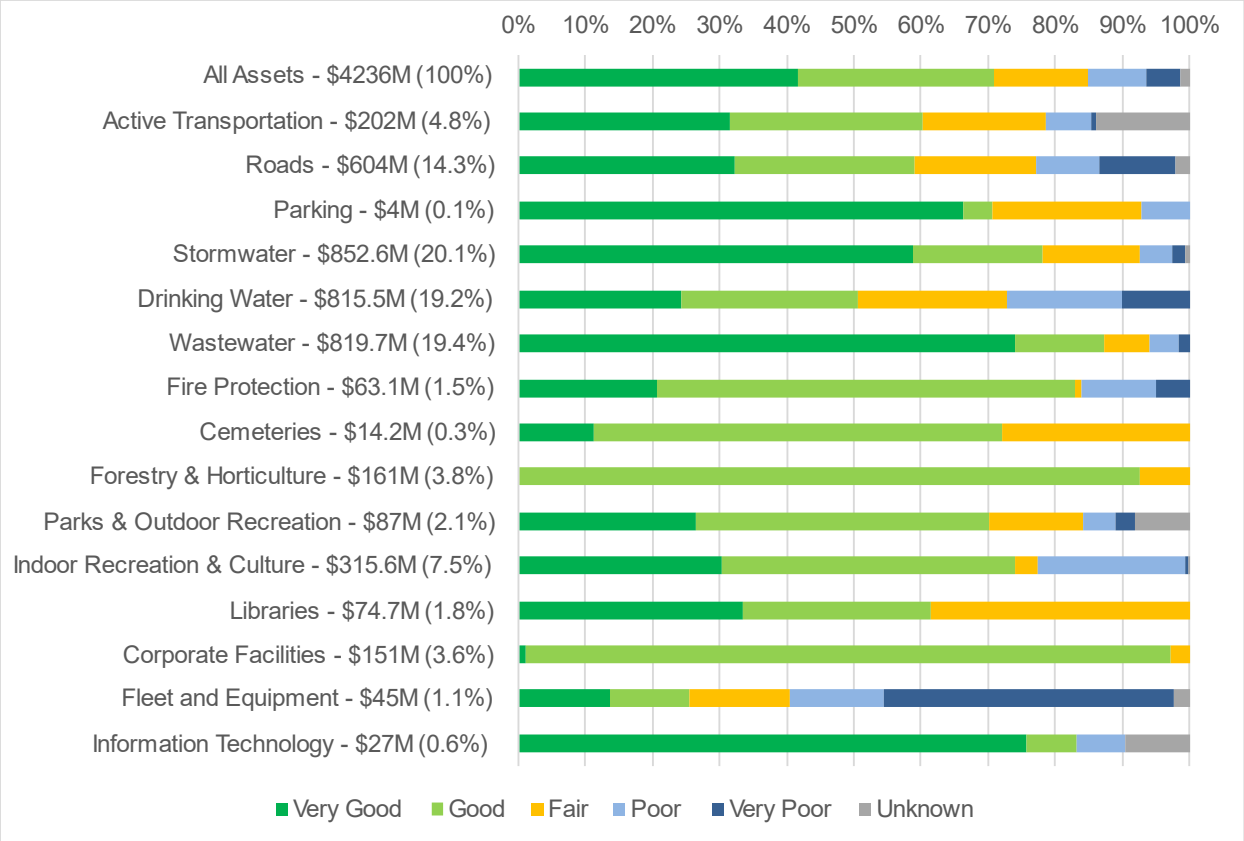


Figure 4: Asset Condition Distribution by Asset Class

Levels of Service

In each service function section, the current levels of service (LoS) frameworks are provided. LoS are a series of metrics that are used to determine if assets of a service function are meeting functional or user requirements. These functional and user requirements are based on customer expectations. These frameworks include service attributes, community/customer LoS metrics, technical LoS metrics, and 2022 and 2023 performances. For the core assets as defined in O. Reg. 588/17, the mandated LoS measures have been provided. The mandated LoS measures include qualitative descriptions and technical metrics. The current performance of these will be reported and continually updated using previous two years of information.

Initial City-established LoS measures have been developed for non-core assets. These initial LoS measures have been developed to link directly to the service and supporting assets and are important metrics that the City uses in decision-making processes. These current LoS will be further reviewed and future LOS expanded in the next phase

of the Asset Management Plan (AMP) development (O. Reg. 588/17 July 1, 2025 requirements).

Service attributes included in the LoS frameworks include:

- Scope
- Connectivity
- Reliability
- Environmental Sustainability
- Safety
- Accessibility

Asset Lifecycle Management Strategy

The City's asset portfolio consists of assets with different functions that serve a wide variety of purposes. Depending on asset types and functions, the City needs to perform many different lifecycle activities. These lifecycle activities are detailed in the individual service function sections. The required lifecycle activities are identified each year to meet LoS which are then used to determine required funding levels and inform the Financial Strategy.

Risk Considerations

In accordance with the service levels presented, we manage a variety of risks associated with the services delivered through our assets. Asset risk pertains to the performance of our assets, which can be gauged through physical condition, capacity, quality, and financial efficiency.

Examples of the types of risk we manage include:

- **Corporate Risk and Liability:** Exposing us to legal liability.
- **Environmental:** Causing adverse effects on the natural environment.
- **Financial:** Resulting in financial losses or inefficient expenditures.
- **Legislative:** Failing to comply with relevant legislation.
- **Level of service:** Not meeting the service commitments to the community.
- **Operational:** Disrupting operations or introducing inefficiencies.
- **Public health:** Affecting the health of the community.
- **Public safety:** Jeopardizing the safety of the community or staff.

- **Reputational:** Risks that can negatively impact the way the community or other jurisdictions view the City.

The City is committed to actively identifying, acknowledging, mitigating, and adapting to risks associated with potential asset failures, encompassing physical, capacity, quality, and financial efficiency issues. Wherever feasible, performance is continuously monitored, and lifecycle activities outlined in the subsequent section are implemented to pre-empt failure, mitigate risks, and prolong the asset's lifespan.

Growth

Growth can put pressures 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 from 129,920 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 3. Based on current Regional estimates, the population of the City was 152,130 at the end of 2023. According to the Regional Official Plan, the City's population will rise to 176,000 by 2031.

Table 3: Population and Employment Forecasts, Regional Official Plan

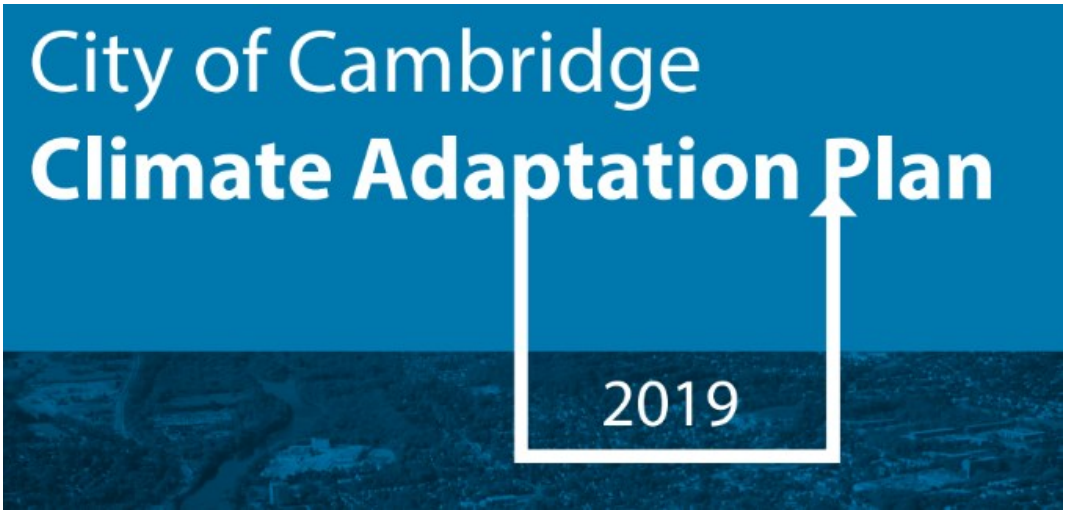
Forecast	2006	2021[2]	2023	2031
Population	123,900	138,479	152,130	176,000
Employment	75,220	NA	NA	102,500

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

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.

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 Greenhouse Gas (GHG) Reduction Plan adopted in June 2014 focusing on the actions to reduce the GHG emissions from the City's facilities.

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in the 2025 AMP.

Financial Strategy

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. The City strives to balance effective lifecycle activities with costs while maintaining current levels of service. Current levels of service are defined for each Service Function in this plan and are focused on holding the current condition of assets steady.

The total capital needs to maintain current levels of service across all Service Function, while accommodating for growth and increased service needs, is valued at $872M from 2024-2033. This equates to an annual average of over $87M. The City's 2024 approved budget capital forecast of $726 million over 10 years is insufficient to maintain the current levels of service. The remaining $146M of the $872M includes unfunded projects ($86M) or projects identified as required through asset management condition forecasting, yet to be submitted ($60M) (both part of the infrastructure gapping as identified in the Issue Title: Sustainable Infrastructure Renewal Funding presented to council in the 2024 Budget Book). The capital budget distribution for approved (excluding unfunded) projects is shown in Figure 5.

The Service Function Plans provide more details on the capital and operating requirements for the respective assets used in those areas.

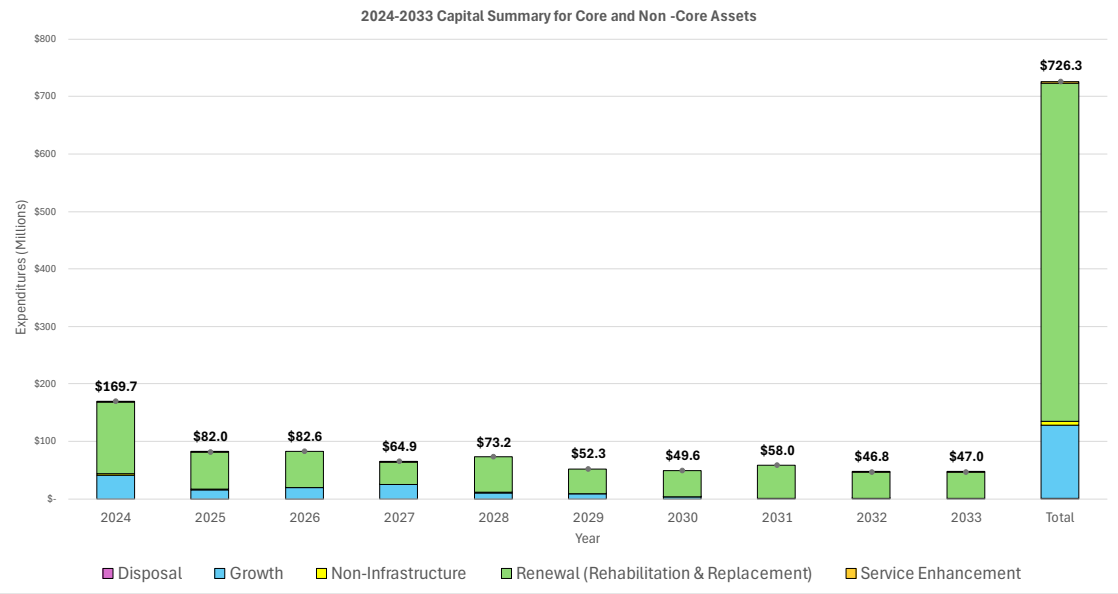


Figure 5: Lifecycle Capital Expenditures for all Service Function

The total operations and maintenance budget in place will allow staff to work towards maintaining current levels of service across all service function of $1.3B, from 2024-2033. This equates to an annual average of $133.3M. The operating budget will continue to be reviewed as additional pressures on the operating budget could be presented with aging infrastructure as we work towards reducing our infrastructure gap.

Note a 2% increase has been applied to the 2024 operations & maintenance budget to each year after to forecast operating expenditures and the operating requirements distribution is shown in Figure 6.

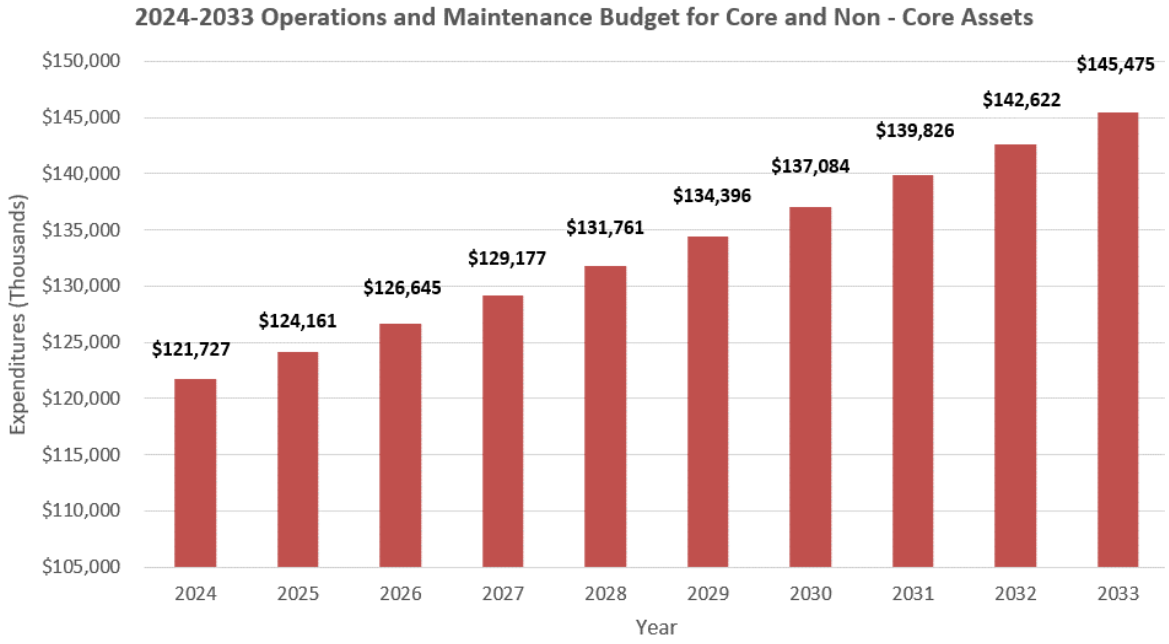


Figure 6: 10-year Operations and Maintenance requirement for all Service Function[3]

According to the "Sustainable Infrastructure Renewal Funding 2024" report, over the past four years, the City has made progress towards implementing some of the strategies like:

- Debt financing for construction of Soccer complex and expansion and improvement of existing single pad Arena to twin pad arena.

[3] 2024 Operations and Maintenance budget for AMP is listed as gross expenditures (not including corporate expenditures), less annual expenditure of contributions to reserve fund. The budget presented in AMP is categorized by Asset Hierarchy (Service Function and Asset Class).

- Approval of Debt financing for design and construction of Recreation complex.
- Private capital investment to expand existing Cambridge Sports park from a twin pad arena to four pad arena with ice rental agreement.
- Storm water utility and a long-range financial plan funded through storm water rates.
- Approval of Naming Policy for City Assets to generate sponsorship revenue.

In February 2024, the Council passed a resolution to establish an Infrastructure Renewal Reserve Fund, an infrastructure levy. The annual capital levy reserve contribution was increased from 4% to 6.6% each year, starting in 2024, and a minimum of 80% of the capital levy reserve was to be contributed to the Infrastructure Renewal Reserve Fund. The council also directed staff to implement an additional 1% tax levy per year starting in 2024 to the Infrastructure Renewal Reserve Fund, until a fully sustainable infrastructure plan is achieved. These allocations are steps put in place in 2024 as we work towards maintaining the existing City owned infrastructure in a state of good repair.

APPENDICES

APPENDIX A: TRANSPORTATION

Total Replacement Value

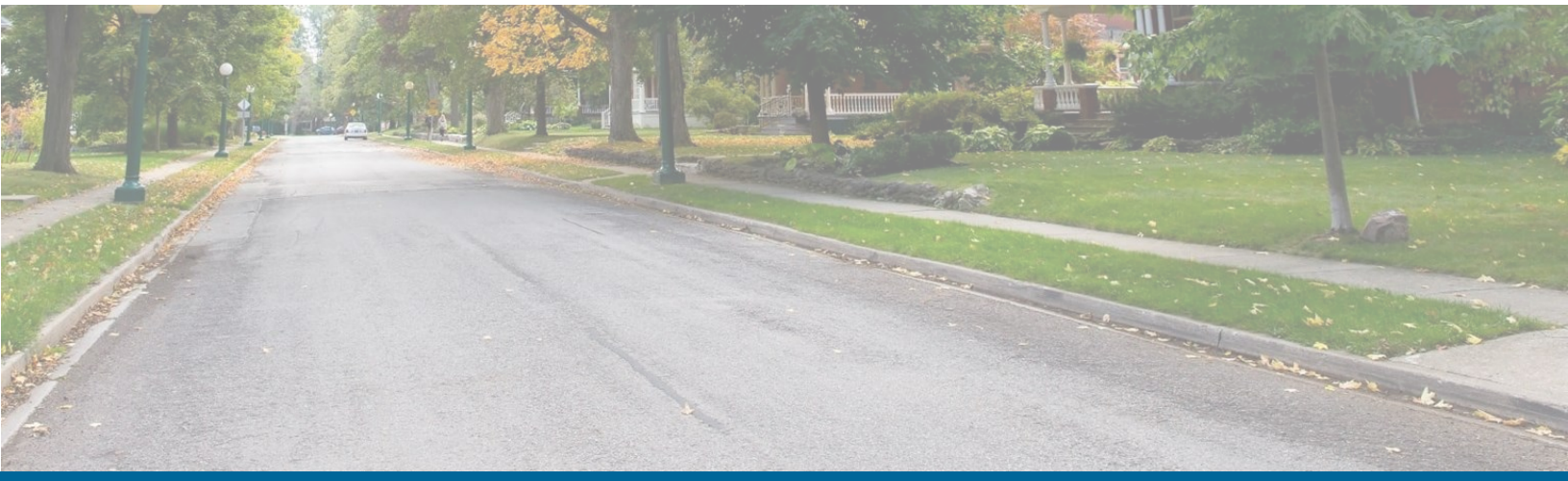
$810.3 Million

Overall Average Asset Condition

Good

Asset Quick Facts

- The city owns over 1000 lane km of paved roads and maintains over 1250 lane km of paved roads
- 25 parking lots
- Over 800km of sidewalks and trails throughout the city



APPENDIX A: Transportation

Introduction

This 2024 Interim Asset Management Plan (AMP) includes the transportation assets shown in Table 4. From the 2019 Asset Management Plan, the scope of assets remains the same as there have been no new types of transportation assets implemented.

Table 4: Transportation Assets

Service Function:	**Transportation**		
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) Retaining Walls & Sound Walls Signage Guiderails Pedestrian Crossings Railway Crossings	Public Parking Lots (excluding public parking lots specific to parks and recreation) Parking meters Public Street Parking Stalls

State of the Infrastructure

Transportation assets are those that enable us to get to 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 some of our major arterial roads.

We recognize that the efficiency and value we can derive from our transportation assets extends into all other portfolios, which is what makes transportation particularly important.

For our transportation assets, based on replacement value, **21%** of our road assets are in poor or very poor condition, and **59%** in good or very good condition.

Transportation Overview

Replacement Value

$810.3M

Total replacement value of all assets within the transportation asset class

Condition

Good

Weighted average condition rating of transportation asset across all subclasses

Asset Class

Three

Distinct asset classes that we manage as part of our municipal transportation portfolio

Asset Class

Active Transportation

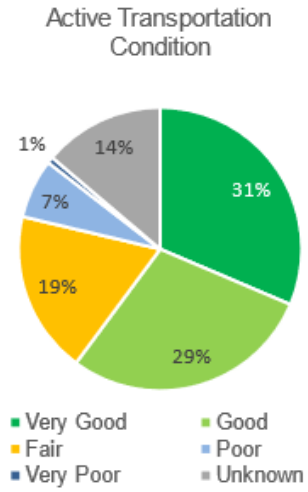
688 km of sidewalk
129 km of trails
51 pedestrian bridges
10 km of walkways

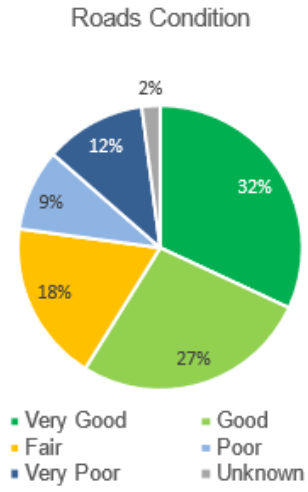
Roads

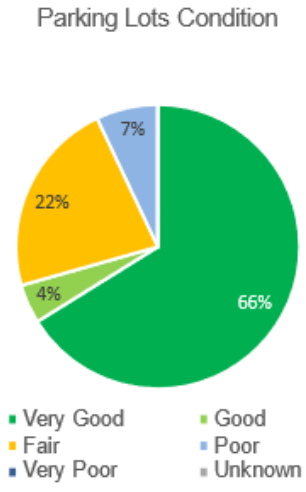
1,032 lane-km of pavement
30 bridges (includes 1 rail culvert)
11,570 streetlights
656 retaining walls
4.6 km of guiderails

Parking

25 parking lots







*Condition based on replacement value

Active Transportation

Replacement Value ('000s):

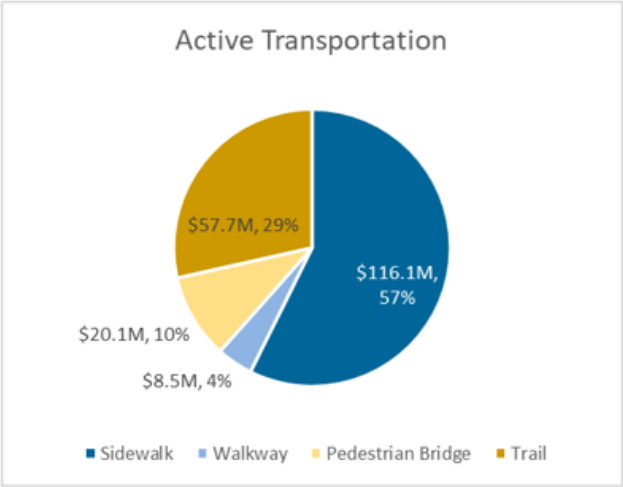
$202,346

Weighted Avg. Condition Rating:

Good

Average Age:

30 years



Roads

Replacement Value ('000s):

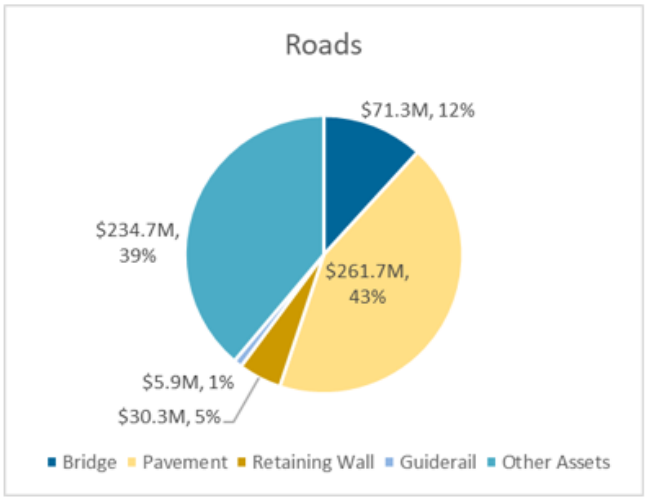
$603,970

Weighted Avg. Condition Rating:

Good

Average Age:

36 years



Parking

Replacement Value ('000s):

$3,960

Weighted Avg. Condition Rating

Good

Average Age:

16 years

Levels of Service

Current 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 roads, bridges and culverts, as well as additional City-established metrics within our LoS framework. These levels of service are outlined below in Table 5 and Table 6.

Table 5: Prescribed Technical Levels of Service - Transportation

Asset	Service Attribute	Technical Measures of Service	2022	2023
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)	2.47	2.47
Roads	Scope	Number of lane-kilometres of collector roads as a proportion of square kilometres of land area of the municipality	4.84	4.84
Roads	Scope	Number of lane-kilometres of local roads as a proportion of square kilometres of land area of the municipality	5.14	5.14
Roads	Quality	Average pavement condition index Paved Roads (Note: equivalent to PQI measured by Cambridge)	7.64	7.7
Roads	Quality	Average surface condition (e.g., excellent, good, fair or poor) index Unpaved Roads	N/A – there are no unpaved	N/A – there are no unpaved

Asset	Service Attribute	Technical Measures of Service	2022	2023
			roads in the municipality	roads in the municipality
Bridges & Culverts	Quality	Percentage of bridges in the municipality with loading or dimensional restrictions (Note: road bridges)	3.4%	3.4%
Bridges & Culverts	Quality	Average bridge condition index value for Bridges (Note: 2022 and 2023 are equivalent since inspection performed on bi-annual basis, includes road and pedestrian bridges)	79.7	79.7
Bridges & Culverts	Quality	Average bridge condition index value for culverts (Note: 2022 and 2023 are equivalent since inspection performed on bi-annual basis, includes road and pedestrian bridges)	79.8	79.8

Table 6: City Established Technical Levels of Service - Transportation

Asset	Service Attribute	Technical Measures of Service	2022	2023
Multi-Use Trails & Paths	Scope/ Connectivity	Km of bicycle paths, multi-use trails and seasonal trails per 100,000 population	90.5 km	93.3 km
Sidewalks	Accessibility	Percentage of City owned roads with sidewalks	79%	79%
Trails	Safety/ Accessibility	Kilometres of trails open during winter season	73.3 km	73.9 km
Roads	Safety	Number of service public requests	3,154	4,036

Asset	Service Attribute	Technical Measures of Service	2022	2023
Streetlights	Reliability	Average age of streetlight poles (Years)	35	36
Parking Lots	Environmentally Sustainable	Number of public electrical vehicle charging stations per 1000 residents (City owned)	0.06	0.06
Roads	Reliability	Kilometres of roads renewal	6.4	8.6

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 in Table 7 until Table 10.

Table 7: Lifecycle Activities – Transportation

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Master Transportation Plan and other strategic plans	All	As required
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As required
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As required
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Rehabilitation and Renewal	Rehabilitation/Renewal needs of regional land city roads	Roads	In collaboration with the Region of Waterloo
Rehabilitation and Renewal	Road resurfacing and laneway reconstruction	Roads	Required based on pavement condition
Growth & Service Enhancement	Construction of new pedestrian bridges, roads, and sidewalk network	All	As required
Growth & Service Enhancement	Acquisition of new transportation assets	All	As required
Disposal	Disposal activities related to replacement	All	As required

Activity	Description	Asset	Frequency
Disposal	Decommissioning	All	As required

Table 8: Condition Assessment and Inspection Procedures - Transportation

Asset	Condition Assessment and Inspection Procedure
Roads	Undergo a robust condition assessment program every three years consisting of photographic inspections that inform calculation of the Pavement Quality Index. This is performed by the asset management service function to target renewal planning. Routine road patrol is also performed on an ongoing basis, by Road Operations. This information is captured in our systems for direct application in analysis.
Bridges and Culverts	Bridges and large culverts with a span of more than three metres undergo a formal inspection every two years as per Provincial requirements. Data is used as input for capital planning process.
Sidewalks and Walkways	An annual safety inspection program is performed for our sidewalks and walkways between May and September. The inspection is performed via City staff biking along all sidewalks in the City and recording defects. Defects are recorded according to provincial requirements and are categorized according to various defect types and severity levels.
Retaining Walls	Regular high level condition assessment of retaining walls by summer staff, and detailed condition assessment on ‘as need’ basis by engineering consultant.
Bike Lanes	Inspection of bike lanes programs are performed as part of the road patrol program.

Table 9 shows the planned operation and maintenance activities for transportation. Throughout this table, an x within the City Roads or Regional Roads columns denotes that City of Cambridge staff perform this activity.

Table 9: Planned Operations and Maintenance Activities - Transportation

Activity	City Roads	Regional Roads
Crack sealing	x	x
Spring Clean-up	x	x
Tree trimming/ brush control	x	x
Shouldering	x	x
Maintenance Hole Maintenance	x	x
Sign Maintenance and replacement	x	x
New sign installation in new developments	City contracts this out	-
Grass cutting - boulevard	x	Region
Bridge - deck washing	x	x
Winter Maintenance Road	x	x
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
Bike Lane Maintenance	x	x
Road Patrol and Inspections	x	x
Road Condition Assessments	City contracts this out	Region
Trench Inspections	x	x

Activity	City Roads	Regional Roads
Pedestrian Bridge maintenance	City contracts this out	-
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	City contracts this out	Region
Traffic related services (permits, crossing guard, traffic investigations)	x	Region

Table 10 shows the unplanned operations and maintenance activities for transportation. Throughout this table, an x within the City Roads or Regional Roads columns denotes that City of Cambridge staff perform this activity.

Table 10: Unplanned Operations and Maintenance Activities - Transportation

Activity	City Roads	Regional 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	-
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	City contracts this out

Activity	City Roads	Regional Roads
Emergency Response - Accident clean up, spills debris etc.)	x	x

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

Financial Strategy

Asset Investment Needs

The following sections describes our capital and operational investment needs to maintain existing infrastructure and associated service delivery along with the requirements for additional infrastructure to meet the growing needs and demands of our communities. We also highlight the Capital Investment Plan that was approved by the City for 2024-2033.

Operating Budget

In 2024, the City is expecting to spend $0.8M, $0.2M, and $11.6M on active transportation, parking, and roads needs, respectively, as shown in Figure 7.

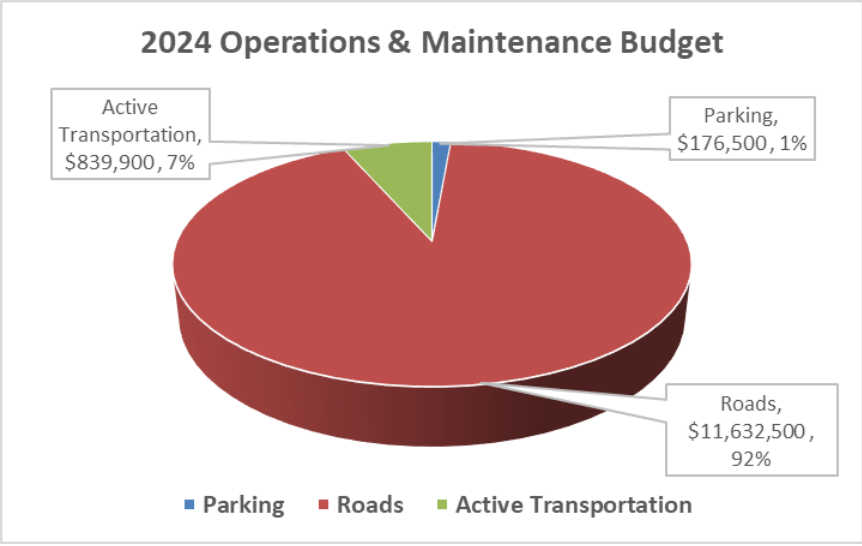


Figure 7: 2024 Operations and Maintenance Budget - Transportation

Capital Budget

Figure 8 presents the approved capital investment plan proposed to sustain our current services for the next 10 years along with projects designed to meet our projected growth requirements for Transportation assets.

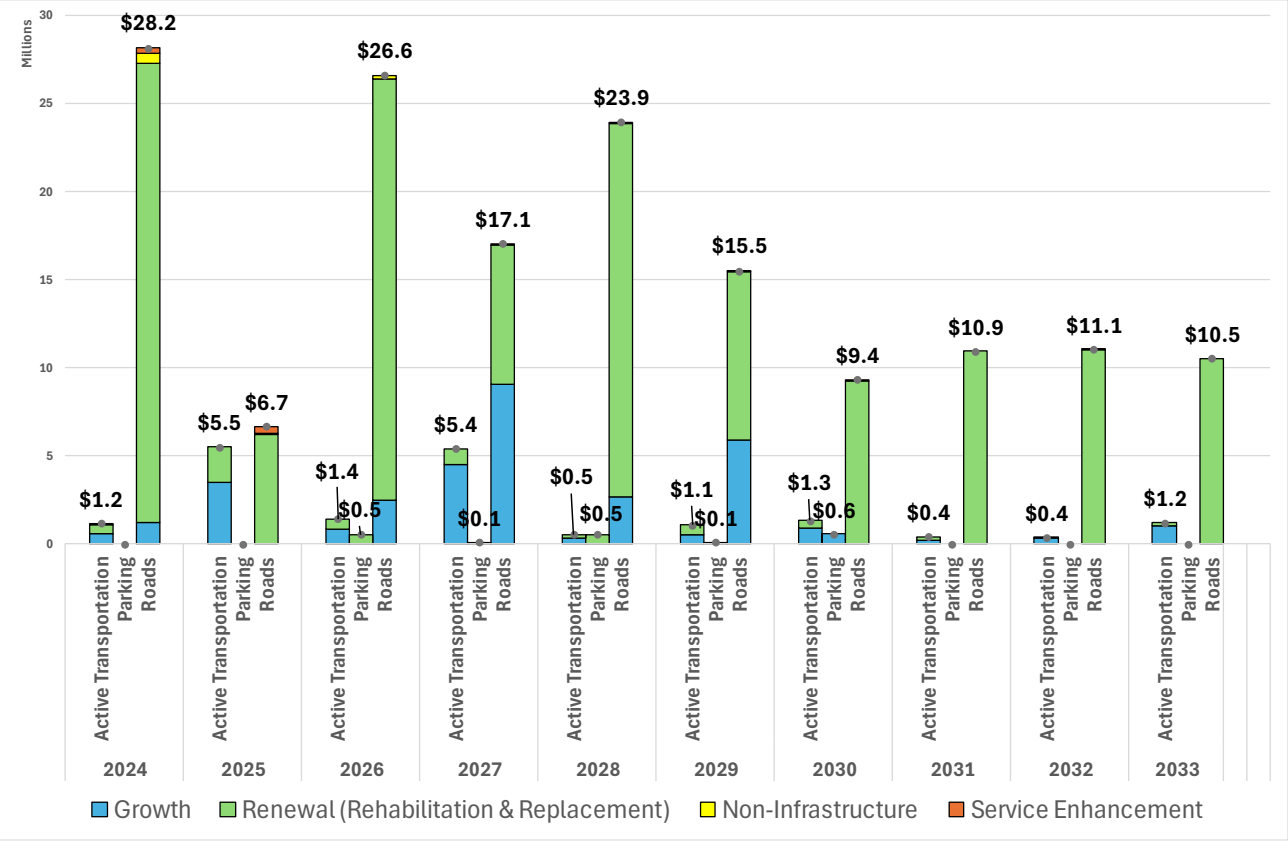


Figure 8: 2024-2033 Capital Investment Plan – Transportation

The capital budget forecast consists of the required funding over the next 10 years, which is $182.3M. Expenditures are categorized as non-infrastructure solutions (such as master plans, studies, improvement plans, etc.), renewal activities (such as rehabilitation and replacement), and growth and service enhancement activities (such as upgrades to existing infrastructure like road reconstruction, and construction of new assets to service a new development).

Table 11 below provides a summary of the anticipated funding over the next 10 years.

Note that a 2% increase has been applied to the 2024 operations & maintenance budget and to each year after to forecast operating expenditures.

Table 11: Funding Summary - Transportation

Year	Non-Infrastructure Solutions	2024 Operations & Maintenance Budget	Renewal (Rehabilitation & Replacement)	Growth	Service Enhancement	Total
2024	$581,800	$12,648,900	$26,562,811	$1,829,523	$362,500	**$41,985,534**
2025	$199,083	$12,901,878	$8,677,350	$3,532,450	$386,900	**$25,697,661**
2026	$199,233	$13,159,916	$25,100,120	$3,278,697	-	**$41,737,966**
2027	$60,750	$13,423,114	$8,903,606	$13,539,030	-	**$35,926,500**
2028	$99,033	$13,691,576	$21,931,664	$3,003,400	-	**$38,725,673**
2029	$37,500	$13,965,408	$10,231,400	$6,429,600	-	**$30,663,908**
2030	$63,883	$14,244,716	$9,724,700	$1,445,400	-	**$25,478,699**
2031	-	$14,529,610	$12,682,910	$201,790	-	**$27,414,310**
2032	$28,500	$14,820,202	$11,089,370	$319,430	-	**$26,257,502**
2033	-	$15,116,606	$10,728,750	$1,020,000	-	**$26,865,356**

APPENDIX B: ENVIRONMENTAL SERVICES

Total Replacement Value

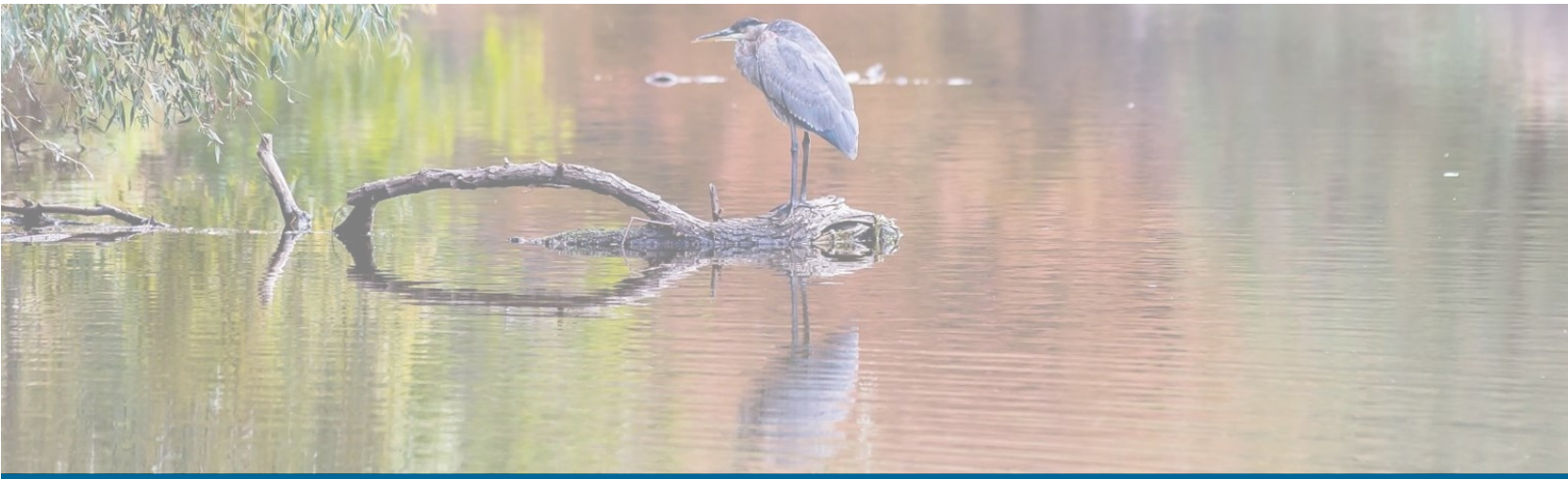
$2,487.8 Million

Overall Average Asset Condition

Good

Asset Quick Facts

- The city owns 533km of watermains and maintains additional 80km of watermains for Region of Waterloo for supplying safe drinking water to residents
- 21 Pumping Stations and 559km of wastewater pipes
- Over 1,200 minor culverts, 397 km of city owned storm pipes and 120 storm facilities (includes infiltration galleries)



APPENDIX B: Environmental Services

Introduction

This 2024 Interim Asset Management Plan includes the environmental services assets shown in Table 12. Environmental services include stormwater management, drinking water system, and wastewater assets. From the 2019 Asset Management Plan, the scope of assets remains the same as there have been no new types of stormwater, drinking water, or wastewater assets implemented.

Table 12: Environmental Assets

Service Function:	**Environmental Services**		
Asset Class:	**Stormwater**	**Drinking Water System**	**Wastewater**
Asset Type:	Storm System Stormwater Management Facilities Culverts Dams	Water System	Sanitary System Sanitary Pumping Stations

State of the Infrastructure

Environmental service assets are those that enable us to live in a clean and safe environment. Our environmental services assets are our most utilized and important assets, as our community would not thrive without them. It includes everything from water pipes that service our homes and businesses throughout the City to some of our stormwater management facilities.

For our environmental assets, based on replacement value, **27%** of our drinking water assets are in poor or very poor condition, and **51%** are in good or very good condition; **6%** of our wastewater assets are in poor or very poor condition, and **87%** are in good or very good condition; and **7%** of our stormwater assets are in poor or very poor condition, and **80%** are in good or very good condition.

Environmental Services Overview

Replacement Value

$2,487.8M

Total replacement value of all assets within the environmental service asset class

Condition

Good

Weighted average condition rating of Environment service assets across all subclasses

Asset Class

Three

Distinct asset classes that we manage as part of our municipal environment service portfolio

Asset Class

Stormwater

94 ponds / 26 infiltration galleries

1,241 culverts

397 km of stormwater pipes

3 Dams

Drinking Water

40,346 Water Meters

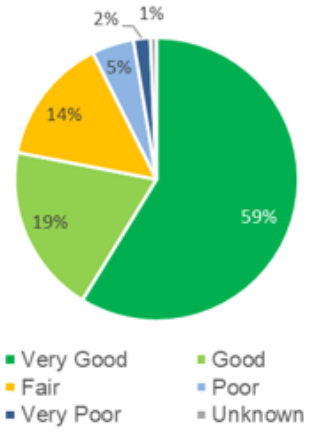
553 km of water pipes

Wastewater

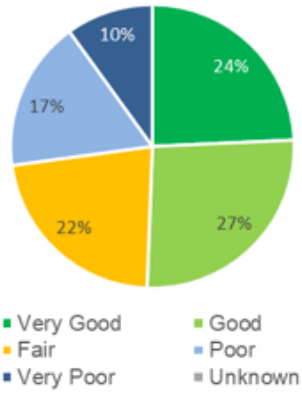
21 Pumping Stations

559 km of wastewater pipes

Stormwater Condition



Drinking Water Condition



Wastewater Condition

*Condition based on replacement value

Stormwater

Replacement Value ('000s):

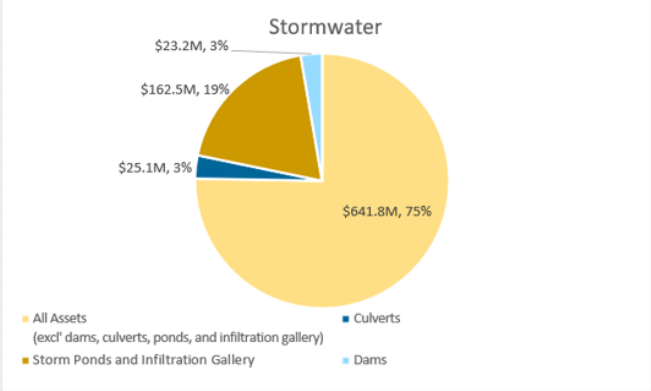
$852,571

Weighted Avg. Condition Rating

Good

Average Age:

31 years



Drinking Water

Replacement Value ('000s):

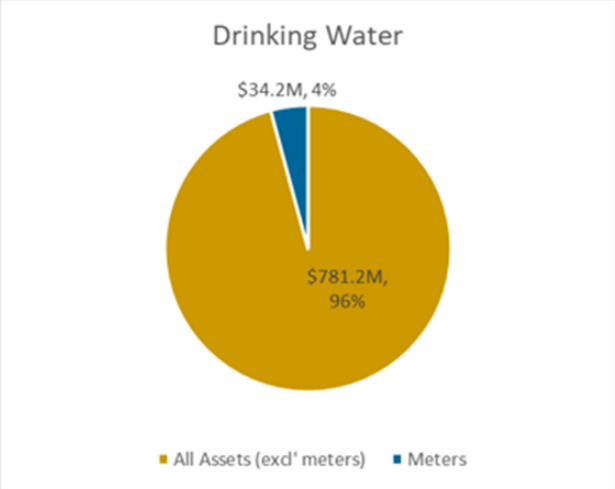
$815,472

Weighted Avg. Condition Rating:

Fair

Average Age:

35 years



Wastewater

Replacement Value ('000s):

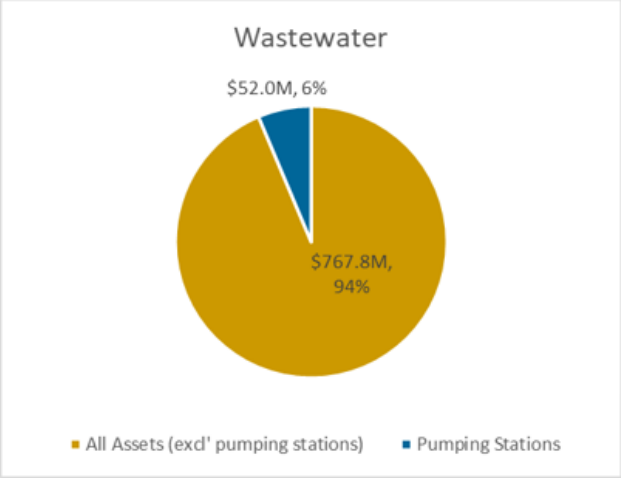
$819,738

Weighted Avg. Condition Rating:

Very Good

Average Age:

34 years



Levels of Service

Current 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, wastewater and stormwater assets, as well as additional City-established metrics within our LoS framework. These levels of service are outlined below in Table 13, Table 14, Table 15 and Table 16.

Table 13: Prescribed Technical Levels of Service – Environmental Services

Subservice	Service Attribute	Technical Measures of Service	2022	2023
Stormwater	Scope	Percentage of properties in the municipality resilient to a 100-year storm	95%	95%
Stormwater	Scope	Percentage of the municipal stormwater management system resilient to a five-year storm	98%	98%
Drinking Water	Scope	Percentage of properties connected to the municipal water system (Note: average value for 2022/2023)	99%	99%
Drinking Water	Scope	Percentage of properties where fire flow is available (Note: average value for 2022/2023)	99%	99%

Subservice	Service Attribute	Technical Measures of Service	2022	2023
Drinking Water	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	0
Drinking Water	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	8.6	0
Wastewater	Scope	Percentage of properties connected to the municipal wastewater system (Note: average value for 2022/2023)	94%	94%
Wastewater	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[4]	N/A[4]
Wastewater	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	12.3 to 38,132 properties	13.2 to 40,763 properties

[4] City of Cambridge eliminated all combined sewer systems in the 1970s

Subservice	Service Attribute	Technical Measures of Service	2022	2023
Wastewater	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	1 to 38,132 properties	3 to 40,763 properties

Table 14: City Established Technical Levels of Service – Stormwater Services

Asset	Service Attribute	Technical Measures of Service	2022	2023
-	Reliability	Number of public service requests	146	183
Stormwater Pipes	Reliability	Average age of stormwater pipe (or average remaining life) years	31	33
Stormwater Pipes	Reliability	Average PACP structural condition	1 (Very Good)	1 (Very Good)

Table 15: City Established Technical Levels of Service - Drinking Water Services

Asset	Service Attribute	Technical Measures of Service	2022	2023
-	Environmental Sustainability	Overall water consumption per account (Non Residential) per day (m3)	17.43	16.99
-	Environmental Sustainability	Overall water consumption per account (Residential Single Family) per day (m3)	0.57	0.46

Asset	Service Attribute	Technical Measures of Service	2022	2023
-	Environmental Sustainability	Overall water consumption per account (Residential Multiple Family) per day (m3)	2.42	TBD
All	Reliability	Number of service public requests	5,485	5,727
Services	Reliability	Average age service connection (years)	29	30
Hydrants	Reliability	Average age Hydrant (years)	15	16
Watermains	Reliability	Average age of water main (or average remaining life) Years	35	35
Watermains	Reliability	Number of water main breaks per year	21	17
-	Reliability	Percentage of nonrevenue water (Volume of Non-Revenue water in % of water purchased) (%)	22	TBD

Table 16: City Established Technical Levels of Service – Wastewater Services

Asset	Service Attribute	Technical Measures of Service	2022	2023
-	Reliability	Number of public service requests	553	556
Pump Stations	Reliability	Average pump station major failures per year	0	11
Services	Reliability	Number of blocked service connections (/1000 service connections)	3.6	3.6

Asset	Service Attribute	Technical Measures of Service	2022	2023
Wastewater Pipes	Reliability	Average age wastewater pipe (or average remaining life) Years	35	36
Wastewater Pipes	Reliability	Average PACP structural condition	1 (very good)	1 (very good)
All	Reliability	Percentage of infiltration and inflow of storm- or groundwater into sewage network (%)	15%	TBD
Wastewater Pipes	Reliability	Annual number of wastewater main backups / 100 km length of wastewater main	1.99	3.25

Asset Lifecycle Management Strategy

The City performs the following to lifecycle activities on its environmental services assets to maintain assets in a state of good repair and provide the appropriate levels of service. The lifecycle activities are shown below in Table 17, Table 18, and Table 19.

Table 17: Lifecycle Activities - Drinking Water Services

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Servicing Plans and other strategic plans	All	As needed
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As needed
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As needed
Operations and Maintenance	Unplanned maintenance activities	All	As needed
Operations and Maintenance	Planned maintenance activities	All	As per maintenance schedule
Operations and Maintenance	Watermain break monitoring (acoustic leak-detection), analysis, and investigations	Watermains	Ongoing
Operations and Maintenance	Hydrant Painting	Hydrants	Every 5 years or as needed
Operations and Maintenance	Hydrant Inspections	Hydrants	Annually
Operations and Maintenance	Curb Stop Assessment /Locate	Water Services	Every 3 to 5 years

Activity	Description	Asset	Frequency
Operations and Maintenance	Water Meter Chamber Inspection	Water Meters	Ongoing
Operations and Maintenance	Proactive Water Meter Replacement (converting to smart meters)	Water Meters	Every 15 years
Operations and Maintenance	Valve turning	Watermains	Every 3 to 5 years
Operations and Maintenance	Water quality/Residual maintenance/Dead-end flushing	Watermains	Daily or as needed
Operations and Maintenance	Proactive swabbing and flushing of selected areas to remove build up (tuberculation) on pipe walls	Watermains	Every 5 years or as needed
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Rehabilitation and Renewal	Replacement of 4-inch (100mm) watermains and thin-wall cast iron watermains with multiple breaks	Watermains	Ongoing
Rehabilitation and Renewal	Looping dead-end watermains	Watermains	As needed
Growth & Service Enhancement	Construction of new assets and/or upsizing to existing pipes	All	As needed
Disposal	Disposal activities related to replacement	All	As needed
Disposal	Decommissioning	All	As needed

Table 18: Lifecycle Activities – Wastewater Services

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Master Plans (Sanitary Sewer Servicing MP) and other strategic plans	All	As needed
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As needed
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As needed
Operations and Maintenance	Unplanned maintenance activities	All	As needed
Operations and Maintenance	Planned maintenance activities	All	As per maintenance schedule
Operations and Maintenance	Building condition assessments	Pump Stations	As per program
Operations and Maintenance	Safety Inspection	Pump Stations	Annually
Operations and Maintenance	Inspect and record	Pump Stations	Weekly
Operations and Maintenance	Bi-Annual Wetwell Cleaning	Pump Stations	Bi-Annual
Operations and Maintenance	Annual Generator inspection	Pump Stations	Annual
Operations and Maintenance	Sonar or Flow Monitoring	Wastewater Pipes, Forcemains	As per program
Operations and Maintenance	CCTV inspections	Wastewater Pipes, Laterals	As per CCTV program, Ongoing

Activity	Description	Asset	Frequency
Operations and Maintenance	Inspection of access issue mainlines	Wastewater Pipes	Annual
Operations and Maintenance	Combined maintenance hole investigation	Maintenance Holes	As needed
Operations and Maintenance	Maintenance hole inspections	Maintenance Holes	Weekly
Operations and Maintenance	Swabbing	Forcemains	Every 5 years
Operations and Maintenance	Zoom inspections	Maintenance Holes	As needed
Operations and Maintenance	H2S Monitoring	Maintenance Holes	Ongoing
Operations and Maintenance	Maintenance hole component replacement and repairs	Maintenance Holes	As needed
Operations and Maintenance	Lateral Blockage Clearing	Laterals	Emergency based / Daily
Operations and Maintenance	Lateral Relining	Laterals	Annual
Operations and Maintenance	Inspections	Siphons	Monthly
Operations and Maintenance	Valve Turning	Siphons	Bi-Annually (Spring & Fall)
Operations and Maintenance	Flushing	Siphons	Bi-Annually
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Rehabilitation and Renewal	Replacement of clay pipes	Wastewater Pipes	Ongoing
Rehabilitation and Renewal	Replacement of high I&I pipes	Wastewater Pipes	As needed

Activity	Description	Asset	Frequency
Growth & Service Enhancement	Construction of new pump stations or upgrades to existing pump stations	Pump Stations	As needed
Growth & Service Enhancement	Acquisition of new pump station equipment	Pump Stations	As needed
Growth & Service Enhancement	Construction of new pipes or upsizing to existing pipes	Wastewater Pipes	As needed
Disposal	Disposal activities related to replacement	All	As needed

Table 19: Lifecycle Activities - Stormwater Services

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Master Plans (Stormwater Management MP) and other strategic plans	All	As needed
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As needed
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As needed
Operations and Maintenance	Unplanned maintenance activities	All	As needed
Operations and Maintenance	Temporary Flood Wall Maintenance	Regional roads	
Operations and Maintenance	Planned maintenance activities	All	As per maintenance schedule

Activity	Description	Asset	Frequency
Operations and Maintenance	Grate inspections	Grates	Bi-Annually (Fall and Spring)
Operations and Maintenance	CCTV inspections	Stormwater Pipes	As per CCTV program
Operations and Maintenance	Inspections	Maintenance Holes, Catch basins, OGS	As per inspection program
Operations and Maintenance	Flood Wall Testing	Flood Walls	Annually
Operations and Maintenance	Visual Inspections	Minor Culverts	As needed
Operations and Maintenance	Inspections	Stormwater Management Facilities	As needed/complaint-based
Operations and Maintenance	OGS cleanout	Oil/Grit Separators	Annually or as needed
Operations and Maintenance	OGS inspection	Oil/Grit Separators	Annually
Operations and Maintenance	Dual use Maintenance hole Inspection and Valve Operation	Maintenance Holes	Annually
Operations and Maintenance	Catch basin cleaning	Catch basins	Annually (approximately 1/3 of network per year)
Operations and Maintenance	Storm Flap Gate inspections	Storm Flap Gates	Annually
Operations and Maintenance	Ditch maintenance	Ditches	As needed

Activity	Description	Asset	Frequency
Operations and Maintenance	Street sweeping	Roads	Annually
Operations and Maintenance	Leaf pick up and disposal	Roads	Annually
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Rehabilitation and Renewal	Dredging/Sediment Removal	Stormwater Management Facilities	As needed
Growth & Service Enhancement	Construction of new pipes or upsizing to existing pipes	Stormwater Pipes	As needed
Growth & Service Enhancement	Upgrades to urban drainage systems that are subject to frequent but isolated flooding issues	Stormwater Network	As needed
Disposal	Disposal activities related to replacement	All	As needed

Financial Strategy

Asset Investment Needs

The following sections describes our capital and operational investment needs to maintain existing infrastructure and associated service delivery along with the requirements for additional infrastructure to meet the growing needs and demands of our communities. We also highlight the Capital Investment Plan that was approved by the City for 2024-2033.

Operating Budget

In 2024, the City is expecting to spend $11.0M, $11.3M, and $3.3M on Drinking Water, Sanitary and Stormwater (not including City contribution payments to the Region for water supply and sanitary treatment), respectively as shown in Figure 9.

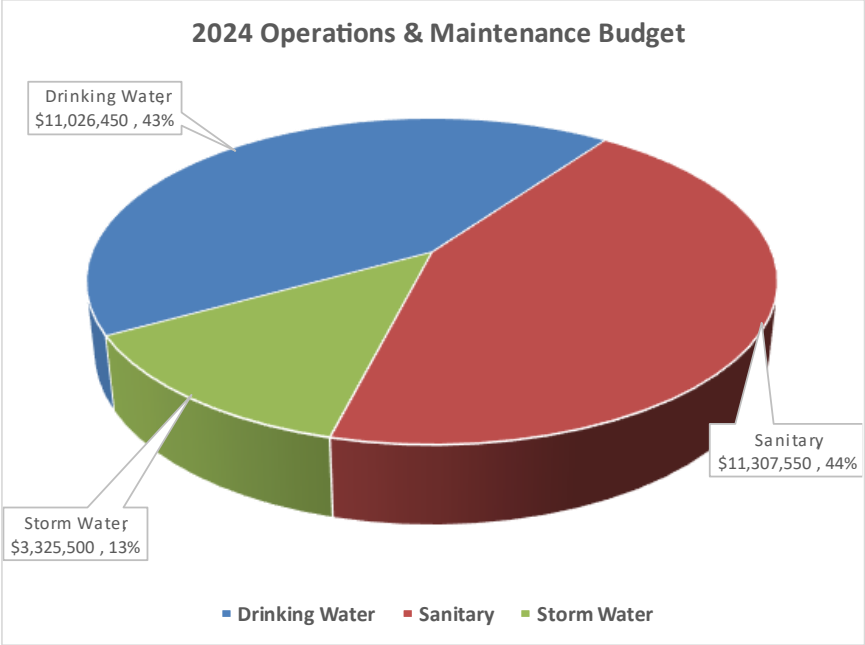


Figure 9: 2024 Operations & Maintenance Budget – Environmental Services

Capital Budget

Figure 10 presents the approved capital investment plan proposed to sustain our current services for the next 10 years along with projects designed to meet our projected growth requirements for Drinking Water, Sanitary, and Stormwater.

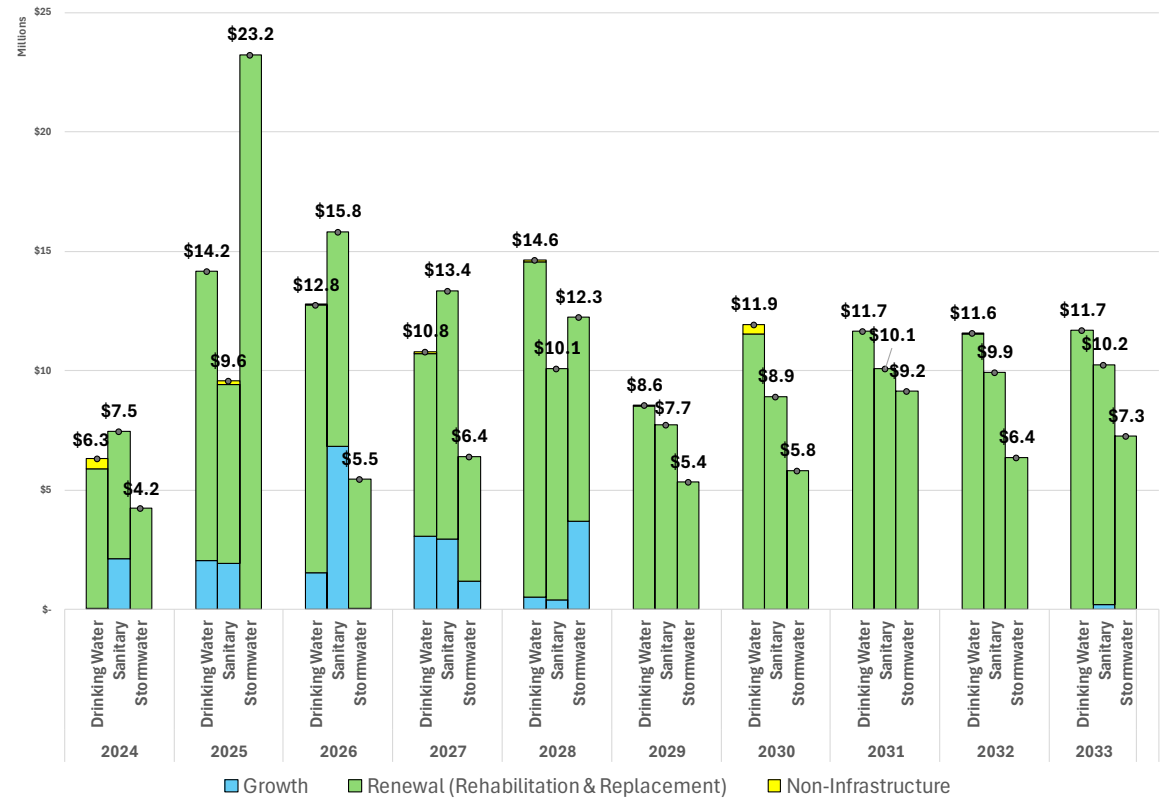


Figure 10: 2024-2033 Capital Investment Plan – Environmental Services

The capital budget forecast consists of the required funding over the next 10 years which is $302.8M. Expenditures are categorized as non-infrastructure solutions (such as master plans, studies, improvement plans, etc.), renewal activities (such as rehabilitation and replacement), and growth and service enhancement activities (such as upgrades to existing infrastructure like pipe upsizing, and construction of new assets to service a new area).

Table 20 below provides a summary of the anticipated funding over the next 10 years.

Note that a 2% increase has been applied to the 2024 operations & maintenance budget and to each year after to forecast operating expenditures.

Table 20: Funding Summary – Environmental Services

Year	Non-Infrastructure Solutions	Operations & Maintenance	Renewal (Rehabilitation & Replacement)	Growth	Total
2024	$431,800	$25,659,500	$15,389,873	$2,190,193	**$43,671,366**
2025	$161,083	$26,172,690	$42,797,124	$3,975,176	**$73,106,073**
2026	$26,533	$26,696,144	$25,596,698	$8,431,185	**$60,750,560**
2027	$60,750	$27,230,067	$23,219,907	$7,249,157	**$57,759,881**
2028	$99,033	$27,774,668	$32,273,050	$4,611,186	**$64,757,937**
2029	$37,500	$28,330,161	$21,603,500	-	**$49,971,161**
2030	$363,883	$28,896,765	$26,269,500	-	**$55,530,148**
2031	-	$29,474,700	$30,897,500	-	**$60,372,200**
2032	$28,500	$30,064,194	$27,832,000	-	**$57,924,694**
2033	-	$30,665,478	$29,006,250	$205,700	**$59,877,428**

APPENDIX C: EMERGENCY SERVICES

Total Replacement Value

$63.1 Million

Overall Average Asset Condition

Good

Asset Quick Facts

- The city has 6 fire halls providing emergency services to residents
- The city has 1 fire training tower and surrounding fire training area
- 39 fleet vehicles and boats

APPENDIX C: Emergency Services

Introduction

This 2024 Interim Asset Management Plan includes the emergency services assets shown in Table 21. From the 2019 Asset Management Plan, the scope of assets remains the same as there have been no new/additional Emergency Services asset types implemented.

Table 21: Emergency Services Assets

Service Function:	**Emergency Services**
Asset Class:	**Fire Protection**
Asset Type:	• Fire Halls • Fleet (Fire)

State of the Infrastructure

Emergency service assets are those that enable a rapid and effective response to medical and fire emergencies. Our emergency service assets are essential services to our community 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.

For our emergency services assets, based on replacement value, **14%** of our assets are in poor or very poor condition, and **84%** in good or very good condition. The fire building condition shown below is based on 2017 data.

Emergency Services Overview

Replacement Value

Condition

Asset Class

$63.1M

Total replacement value of all assets within the emergency service asset class

Good

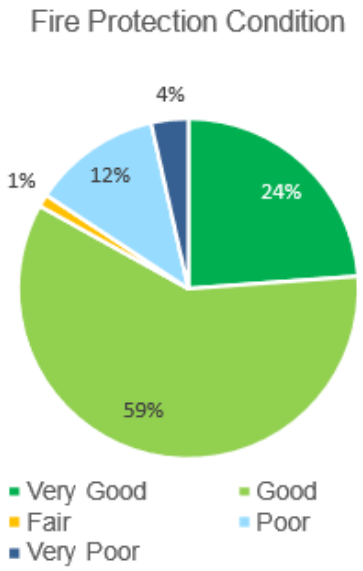
Weighted average condition rating of emergency service asset across all subclasses

One

Distinct asset class that we manage as part of our emergency service portfolio

Fire Protection

6 fire halls
5 parking lots
39 fleet vehicles/boats



*Condition based on replacement value

Fire Protection

Replacement Value ('000s):

$63,135

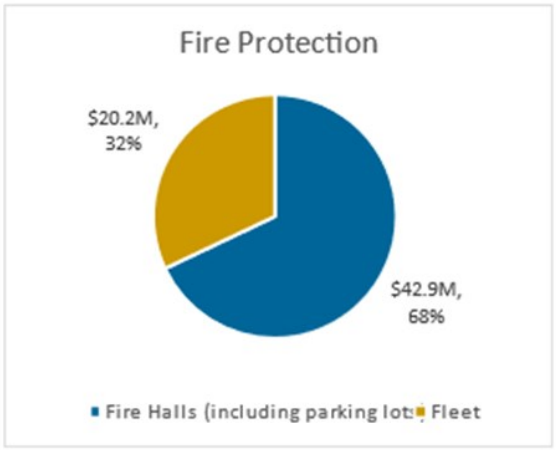
Weighted Avg. Condition Rating

Good

Average Age:

40 years (Fire Halls)

7 years (Fire Fleet)



Levels of Service

Current Levels of Service

Since emergency service assets are classified as non-core assets under O.Reg. 588/17, there are 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. The levels of service are listed in Table 22.

Table 22: City Established Technical Levels of Service – Emergency Services

Service Function	Service Attribute	Technical Measures of Service	2022	2023	Target
Fire Services	Reliable	Total response time in seconds, measured to 90th percentile		692	480
Fire Services	Scope	Incidents per crew responded annually		1611	NA
Fire Services	Safety	% of Vulnerable Occupancies Inspected - Fire Drill (Annual)		100	100

Service Function	Service Attribute	Technical Measures of Service	2022	2023	Target
Fire Services	Scope	Population Served Per Firefighter (Annual)		1102	1000
Fire Services	Safety	Smoke Alarm Verifications/Highrise (Home Fire Safety Program)		Future	6000
Fire Services	Reliable	% of OFM Incident Reporting Compliance		100	100
Fire Services	Reliable	Fire Prevention Complaint Response - Time between File Started and First Site Visit		Future	Future
Fire Services	Safety	Skills Maintenance/Annual Training per Firefighter (hrs)		Future	250
Fire Services	Safety	Annual Proficiency Training per Firefighter (hrs)		Future	60

Asset Lifecycle Management Strategy

The City performs the following to 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 23.

Table 23: Lifecycle Activities – Emergency Services

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Master Fire and Emergency Services Plan and other strategic plans	All	As required
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As required

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As required
Operations and Maintenance	Unplanned maintenance activities	All	As required
Operations and Maintenance	Planned maintenance activities	All	As per maintenance schedule
Operations and Maintenance	Building condition assessments	Fire Stations	As required
Operations and Maintenance	Seasonal condition inspections	Equipment and Apparatus	Per season
Operations and Maintenance	Daily inspections	Fire Fleet	Daily
Operations and Maintenance	Annual commercial vehicle safety inspections	Fleet	Semi-annual or Annual
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Growth & Service Enhancement	Construction of new fire stations or upgrades to existing fire stations	Fire stations	As required
Growth & Service Enhancement	Acquisition of new fire equipment and apparatus	Fire Equipment and Apparatus	As required
Disposal	Disposal activities related to replacement	All	As required
Disposal	Decommissioning	All	As required

Financial Strategy

Asset Investment Needs

The following sections describes our capital and operational investment needs to maintain existing infrastructure and associated service delivery along with the requirements for additional infrastructure to meet the growing needs and demands of our communities. We also highlight the Capital Investment Plan that was approved by the City for 2024-2033.

Operating Budget

In 2024, the City is expecting to spend $30.2M on Emergency Services operating needs, as shown in Figure 11.

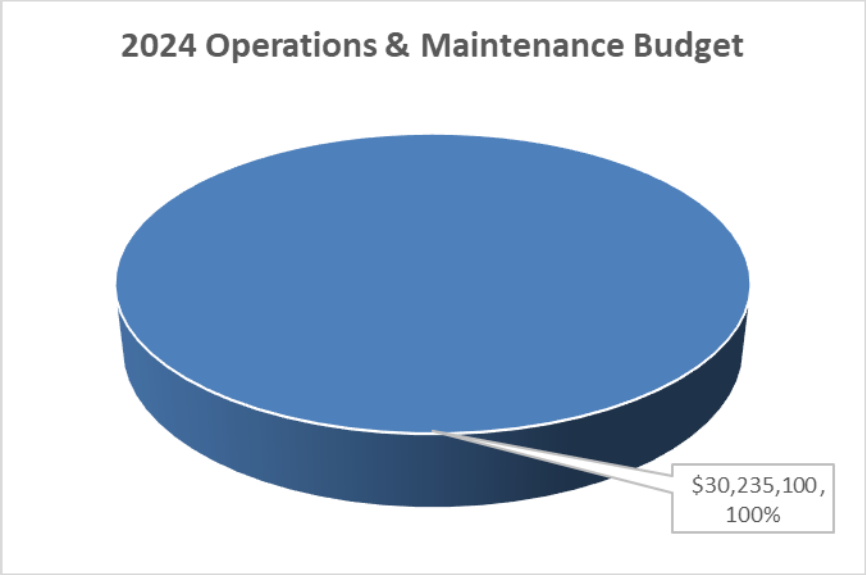


Figure 11: 2024 Operations & Maintenance Budget – Emergency Services

Capital Budget

Figure 12 presents the approved capital investment plan proposed to sustain our current services for the next 10 years along with projects designed to meet our projected growth requirements for Emergency Services.

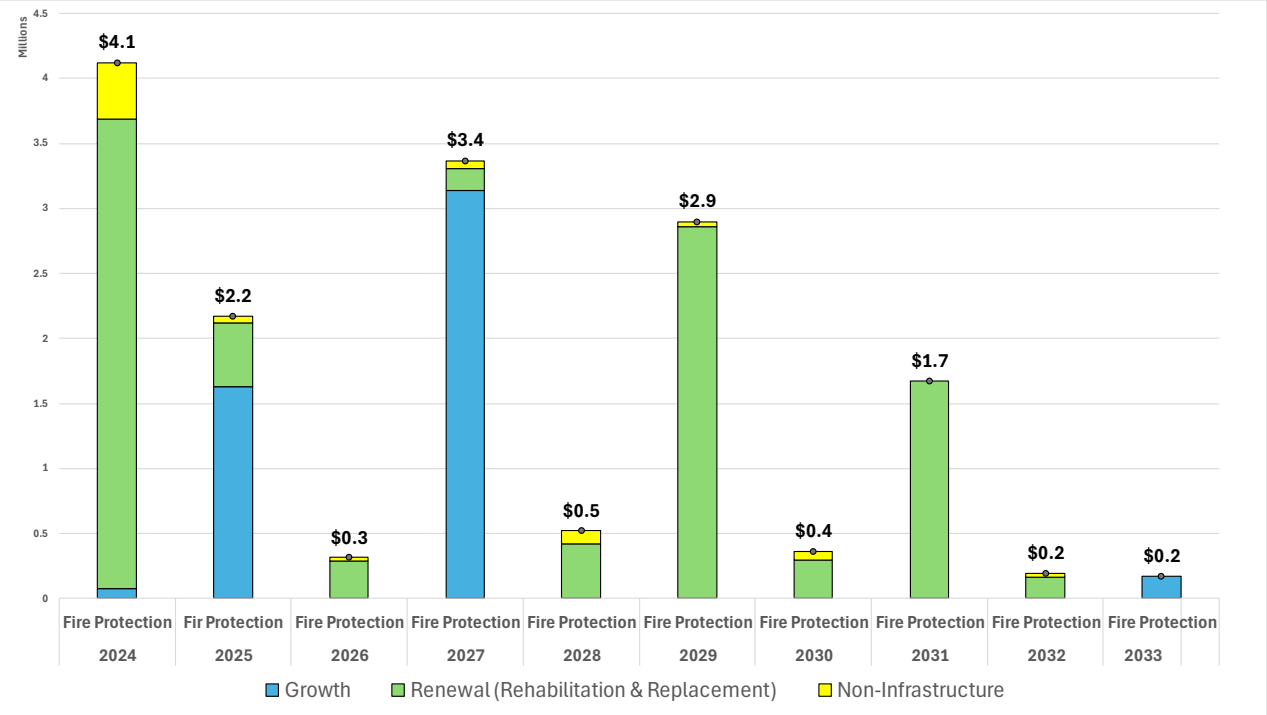


Figure 12: 2024-2033 Capital Investment Plan – Emergency Services

The capital budget forecast consists of the required funding over the next 10 years which is $15.8M. Expenditures are categorized as non-infrastructure solutions (such as master plans, studies, improvement plans, etc.), renewal activities (such as rehabilitation and replacement), and growth and service enhancement activities (such as upgrades to existing infrastructure like fire station expansion, and construction of new assets to service a new area).

Table 24 below provides a summary of the anticipated funding over the next 10 years.

Note that a 2% increase has been applied to the 2024 operations & maintenance budget and to each year after to forecast operating expenditures.

Table 24: Funding Summary – Emergency Services

Year	Non-Infrastructure Solutions	Operations & Maintenance	Renewal (Rehabilitation & Replacement)	Growth	Total
2024	$431,800	$30,235,100	$3,616,700	$75,000	**$34,358,600**
2025	$49,083	$30,839,802	$491,300	$1,628,800	**$33,008,985**
2026	$26,533	$31,456,598	$288,600	-	**$31,771,731**
2027	$60,750	$32,085,730	$169,700	$3,138,500	**$35,454,680**
2028	$99,033	$32,727,445	$421,100	-	**$33,247,578**
2029	$37,500	$33,381,993	$2,862,400	-	**$36,281,893**
2030	$63,883	$34,049,633	$300,000	-	**$34,413,516**
2031	-	$34,730,626	$1,675,000	-	**$36,405,626**
2032	$28,500	$35,425,239	$168,000	-	**$35,621,739**
2033	-	$36,133,743	-	$170,000	**$36,303,743**

APPENDIX D: PARKS

Total Replacement Value

$262.0 Million

Overall Average Asset Condition

Good

Asset Quick Facts

- The city has almost 900 ha parklands, including 650 ha natural lands with various recreation amenities including sport fields, skateboard parks, splash pads, and playgrounds
- Over 61,000 trees with a 27% canopy cover
- 7 cemeteries with 17 columbaria

APPENDIX D: Parks

Introduction

This 2024 Interim Asset Management Plan includes the parks assets shown in Table 25. From the 2019 Asset Management Plan, the scope of assets remains the same as there have been no new/additional parks asset types implemented.

Table 25: Parks Assets

Service Function:	Parks			
Asset Class:	**Cemeteries**	**Parks**	**Outdoor Recreation**	**Forestry & Horticulture**
Asset Type[5]:	• Cemeteries • Columbaria • Mausoleums, Chapels • Facilities • Cemetery Roads • Parking (cemeteries)	• Parks • Park Amenities (facilities) • Parks and outdoor lighting • Monuments • Park Furniture (garbage bins, benches, gates, etc.) • Parking (Parks and outdoor recreational parking)	• Sports Fields • Splash Pads • Playgrounds • Bike and Skateboard Parks	• Trees • Horticulture Beds • Horticulture Planters • Tree Grates & Cells

[5] Land value associated with all asset types is not included in analysis and plan.

State of the Infrastructure

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. The City completed construction of new Soccer complex to meet needs of the growing community and attract sports tournaments to Cambridge.

For our parks assets, based on replacement value, **5%** of our assets are in poor or very poor condition, and **69%** in good or very good condition.

Parks Overview

Replacement Value

$262.0M

Total replacement value of all assets within the parks asset class

Condition

Good

Weighted average condition rating of parks assets across all subclasses

Asset Class

Four

Distinct asset classes that we manage as part of our municipal environment service portfolio

Asset Class

Cemeteries

7 cemeteries
17,700 sq. ft. buildings
17 columbaria
9 km of roads

Parks

1 city park, 18 community parks, 57 neighbourhood parks, 26 trailheads, 26 urban greens / urban squares

892 ha of park land area; including 650 ha of natural lands (wetlands, woodlands, natural corridors), 181 ha developed land, and 61 ha recreational land

1 leash free dog park

20 park facilities (e.g. washrooms)

32 shade structures

63 parking lots, 654 garbage cans

Forestry & Horticulture

3 greenhouses

61,536 Trees

27% tree canopy

Outdoor Recreation

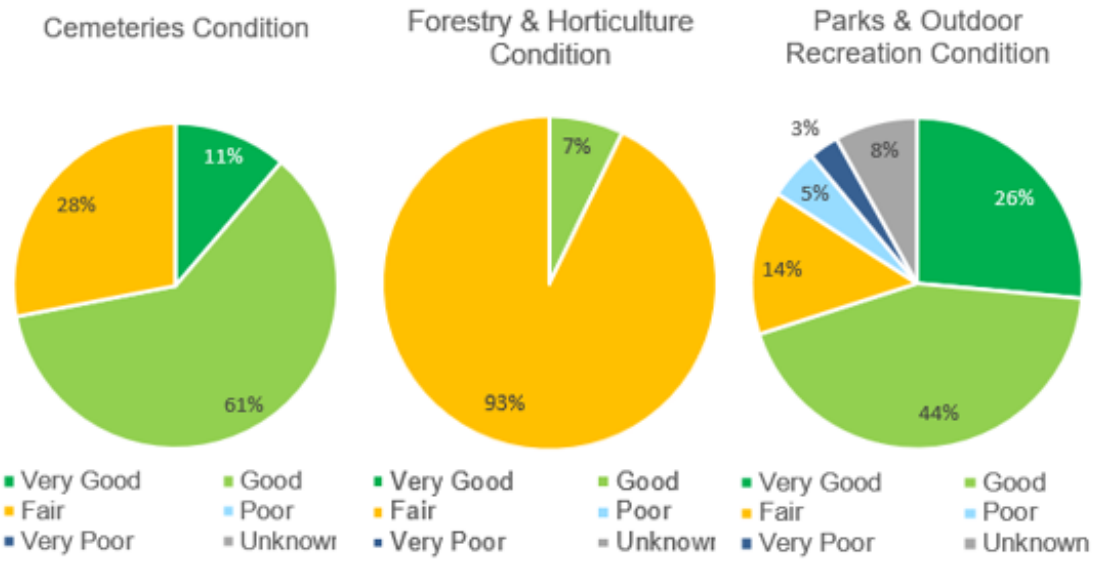
73 playgrounds

101 sports fields/courts

11 splash pads

1 bike park

3 skateboard parks



*Condition based on replacement value

Cemeteries

Replacement Value ('000s):

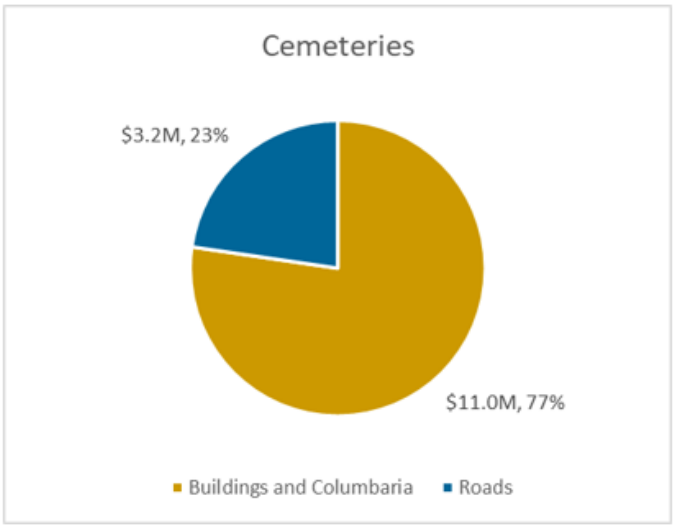
$14,234

Weighted Avg. Condition Rating

Good

Average Age:

N/A



Parks and Outdoor Recreation

Replacement Value ('000s):

$87,047

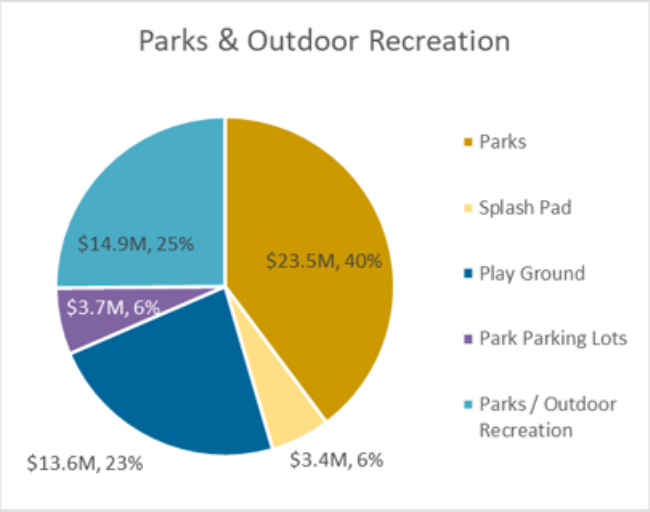
Weighted Avg. Condition Rating:

Very Good

Average Age:

34 years (Parks)

21 years (Outdoor recreation)



Forestry and Horticulture

Replacement Value ('000s):

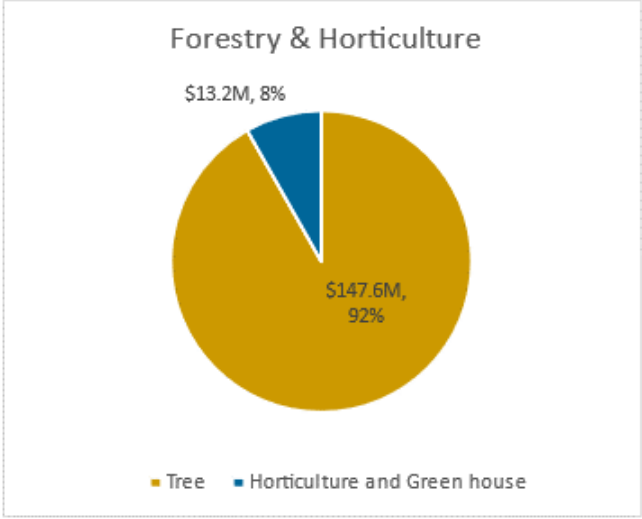
$160,736

Weighted Avg. Condition Rating:

Very Good

Average Age:

20 years



Levels of Service

Current Levels of Service

Since parks assets are classified as non-core assets under O.Reg. 588/17, there are 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. These levels of service are separated into four tables for Cemeteries, Parks, Forestry and Horticulture and Outdoor Recreation, shown respectively in Table 26, Table 27, Table 28, and Table 29.

Table 26: City Established Technical Levels of Service - Cemeteries

Service Attribute	Technical Measures of Service	2023
Reliability	Number of completed customer requests per year	TBD
Accessible	Cemetery Provision – Total Area	0.34 ha per 1000 residents

Table 27: City Established Technical Levels of Service - Parks

Service Attribute	Technical Measures of Service	2023
Accessible	Percentage of residential properties within 800m (10 min walk) distance to parks (City, Community, Neighbourhood, POPS, Urban Square)	90%
Accessible	Park Provision- Total (all classification of parks including natural areas)	5.87 ha per 1000 residents
Accessible	Parks Provision – Actively maintained (excludes natural areas)	1.19 ha per 1000 residents
Accessible	Parks Provision – Natural Areas	4.28 ha per 1000 residents
Accessible	Leash free dog parks	0.01 per 1000 residents

Service Attribute	Technical Measures of Service	2023
Accessible	Park Paths	540 m per 1000 residents
Accessible	Washrooms	0.07 per 1000 residents
Accessible	Shade structures	0.21 per 1000 residents
Accessible	River lookouts	0.03 per 1000 residents
Accessible	River access points	0.03 per 1000 residents
Accessible	Garbage Cans	4.30 per 1000 residents

The City has a sufficient quantity and variety of park types to meet the diverse needs of the community, measured by the number of park typology types meeting targets in the City's Parks Plan.

Table 28: City Established Technical Levels of Service - Forestry & Horticulture

Service Attribute	Technical Measures of Service	2023
Environmental Stewardship	% of total canopy coverage	27%
Accessible	# of street trees per 1000 residents	342
Accessible	Area of planted flower beds per 1000 residents (m2)	74
Environmental Stewardship	# of plants grown annually in City green houses to support horticulture program	38,500

Table 29: City Established Technical Levels of Service - Outdoor Recreation

Service Attribute	Technical Measures of Service	2023 (Per 1000 residents)
Accessible	Outdoor tennis courts	0.13

Service Attribute	Technical Measures of Service	2023 (Per 1000 residents)
Accessible	Outdoor pickleball courts (full / short)[6]	0.04
Accessible	Outdoor basketball courts (full and half courts)	0.07
Accessible	Outdoor volleyball courts (standard)	0.03
Accessible	Cricket pitches	0.013
Accessible	Soccer fields	0.14
Accessible	Baseball or Softball fields	0.22
Accessible	Bike / BMX parks	0.01
Accessible	Skateboard parks	0.02
Accessible	Outdoor ice rinks	0.05
Accessible	Playgrounds	0.48
Accessible	Splashpads	0.07

Asset Lifecycle Management Strategy

The City performs the following to lifecycle activities on its parks assets to maintain assets in a state of good repair and provide the appropriate levels of service. The lifecycle activities for Parks assets are shown in Table 30.

[6] Full size pickleball courts are shared with tennis

Table 30: Lifecycle Activities - Parks

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Master Parks Plan and Parkland Strategic plan	All	As required
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As required
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As required
Operations and Maintenance	Unplanned maintenance activities	All	As required
Operations and Maintenance	Planned maintenance activities	All	As per maintenance schedule
Operations and Maintenance	Regular condition assessments	Playgrounds, Splashpads, Sports fields, Bike and skate parks	Daily
Operations and Maintenance	Condition assessments-Inspections	Parking, Cemeteries, Forestry and Horticulture	As required
Operations and Maintenance	Formalized building condition assessments	Facilities	As required
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Growth & Service Enhancement	Construction of new parks facilities or upgrades to existing facilities	Parks Facilities	As required

Activity	Description	Asset	Frequency
Disposal	Disposal activities related to replacement	All	As required
Disposal	Decommissioning	All	As required

Financial Strategy

Asset Investment Needs

The following sections describes our capital and operational investment needs to maintain existing infrastructure and associated service delivery along with the requirements for additional infrastructure to meet the growing needs and demands of our communities. We also highlight the Capital Investment Plan that was approved by the City for 2024-2033.

Operating Budget

In 2024, the City is expecting to spend $6.0M, $3.2M, $1.9M, $1.0M on Parks, Forestry & Horticulture, Cemeteries and Outdoor Recreation operating needs, respectively as shown in Figure 13.

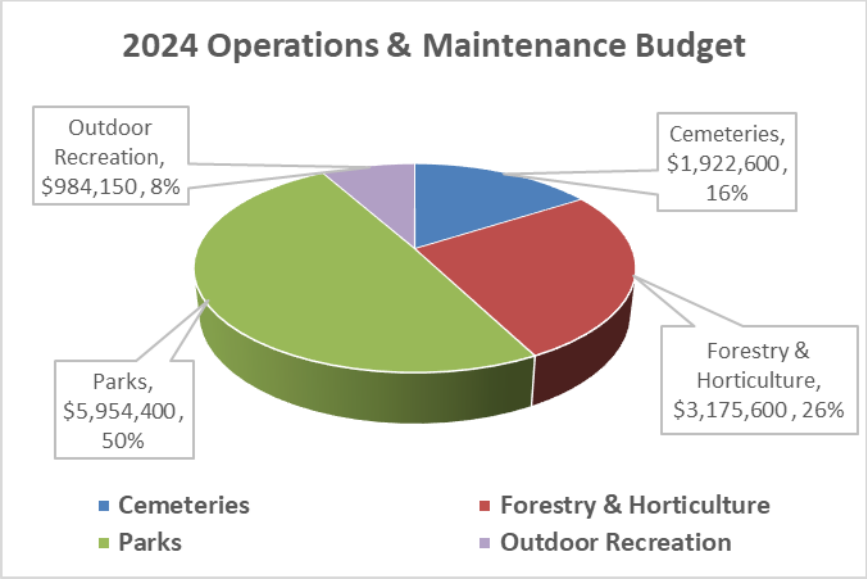


Figure 13: 2024 Operations & Maintenance Budget - Park

Capital Budget

Figure 14 presents the approved capital investment plan proposed to sustain our current services for the next 10 years along with projects designed to meet our projected growth requirements for Emergency Services.

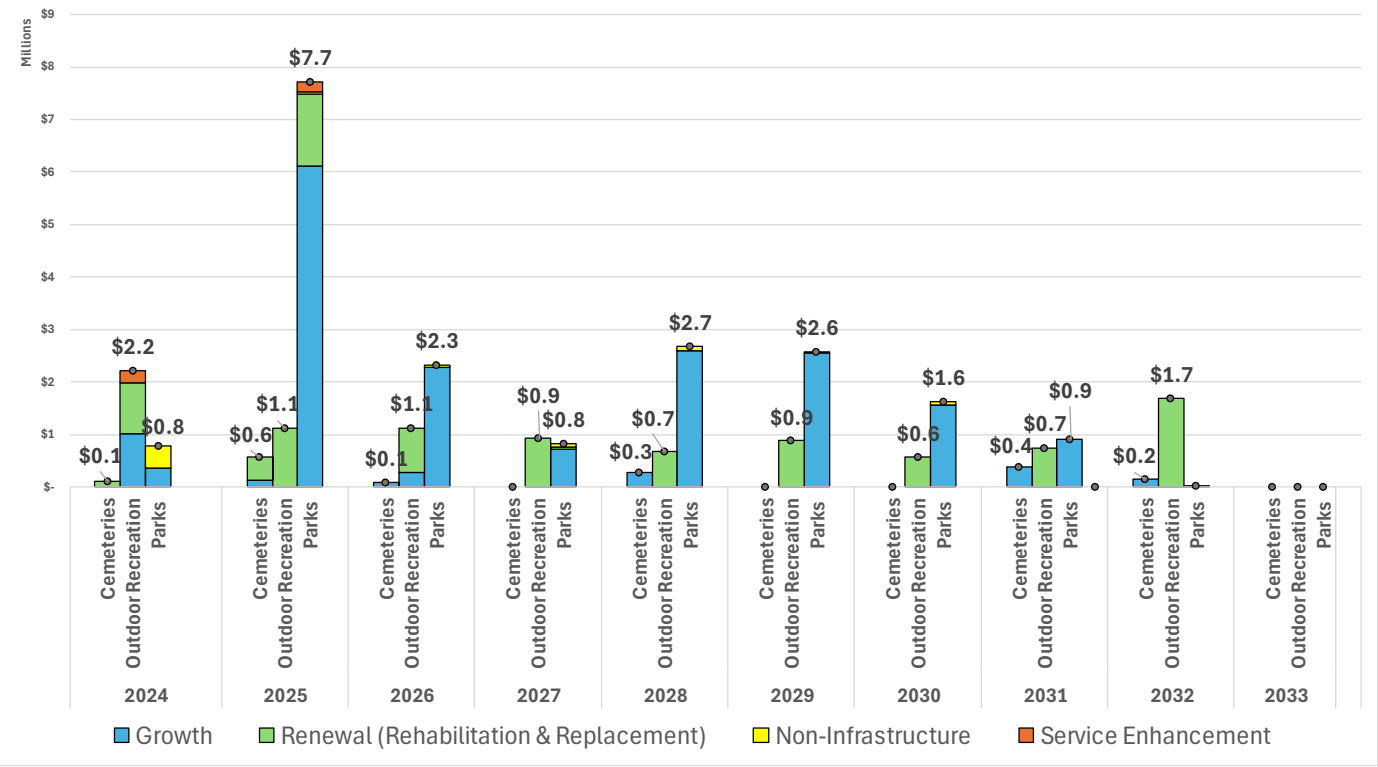


Figure 14: 2024-2033 Capital Investment Plan - Parks

The capital budget forecast consists of the required funding over the next 10 years which is $31.0M. Expenditures are categorized as non-infrastructure solutions (such as master plans, studies, improvement plans, etc.), renewal activities (such as rehabilitation and replacement), and growth and service enhancement activities (such as upgrades to existing infrastructure like parks redevelopment or parking lot upsizing, and construction of new assets to service a new area).

Table 31 below provides a summary of the anticipated funding over the next 10 years.

Note that a 2% increase has been applied to the 2024 operations and maintenance budget and to each year after to forecast operating expenditures.

Table 31: Funding Summary - Parks

Year	Non-Infrastructure Solutions	Operations & Maintenance	Renewal (Rehabilitation & Replacement)	Growth	Service Enhancement	Total
2024	$431,800	$12,036,750	$1,085,900	$1,372,700	$217,800	**$15,144,950**
2025	$49,083	$12,277,485	$2,915,700	$6,246,800	$197,000	**$21,686,068**
2026	$26,533	$12,523,035	$849,400	$2,654,000	-	**$16,052,968**
2027	$60,750	$12,773,495	$984,300	$721,400	-	**$14,539,945**
2028	$99,033	$13,028,965	$685,700	$2,855,800	-	**$16,669,498**
2029	$37,500	$13,289,545	$879,900	$2,543,100	-	**$16,750,045**
2030	$63,883	$13,555,336	$563,600	$1,571,500	-	**$15,754,319**
2031	-	$13,826,442	$740,400	$1,272,400	-	**$15,839,242**
2032	$28,500	$14,102,971	$1,686,600	$155,000	-	**$15,973,071**
2033	-	$14,385,030	-	-	-	**$14,385,030**

APPENDIX E: RECREATION & CULTURE

Total Replacement Value

$390.27 Million

Overall Average Asset Condition

Good

Asset Quick Facts

- The city has 2 museums, 6 community centres and 5 libraries for residents and visitors to enjoy
- 6 arenas, 4 pools and 1 soccer dome
- 2 arts theatres and 1 market

APPENDIX E: Recreation & Culture

Introduction

This 2024 Interim Asset Management Plan includes the recreation assets shown in Table 32. Compared to the 2019 Asset Management Plan a new asset class Libraries is included.

Table 32: Recreation & Culture Assets

Service Function:	**Recreation & Culture**	
Asset Class:	**Indoor Recreation & Culture**	**Libraries**
Asset Type:	• Arenas • Pools • Community Centres/ Older Adult Centres • Market • Arts/ Theatres • Museums • Soccer Dome • Recreational Parking	• Library Collections • Furniture, Fixtures, and Equipment • Libraries

State of the Infrastructure

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 City has signed and operationalized an agreement to rent additional ice time at newly expanded four pad arena at Cambridge sports park.

The City has also commenced construction for improvement and expansion of Preston Memorial Arena to twin pad facility to improve service levels.

Based on replacement value, **23%** of our indoor recreation assets are in poor or very poor condition, and **74%** are in good or very good condition; and **39%** of our library assets are in fair condition, and **61%** are in good or very good condition.

Recreation & Culture Overview

Replacement Value

$390.3M

Total replacement value of all assets within the transportation asset class

Condition

Good

Weighted average condition rating of transportation asset across all subclasses

Asset Class

Two

Distinct asset classes that we manage as part of our municipal transportation portfolio

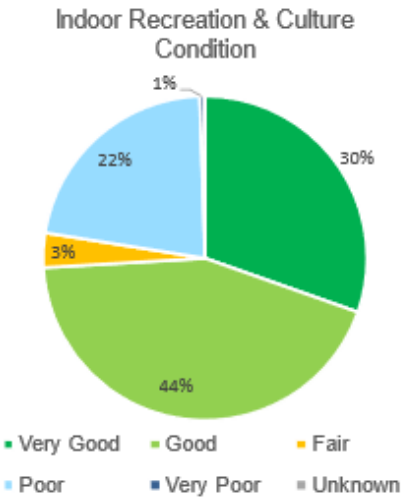
Asset Class

Indoor Recreation & Culture

- 6 arenas (7 pads)
- 4 pools
- 1 soccer dome
- 6 older adult/community centres
- 1 fitness/gymnastic facilities
- 2 museums
- 2 arts-theatres
- 1 market
- 17 recreational parking lots (incl 2 shared with libraries)

Libraries

- 5 library facilities
- library collections
- furniture, fixtures, equipment



*Condition based on replacement value

Indoor Recreation & Culture

Replacement Value ('000s):

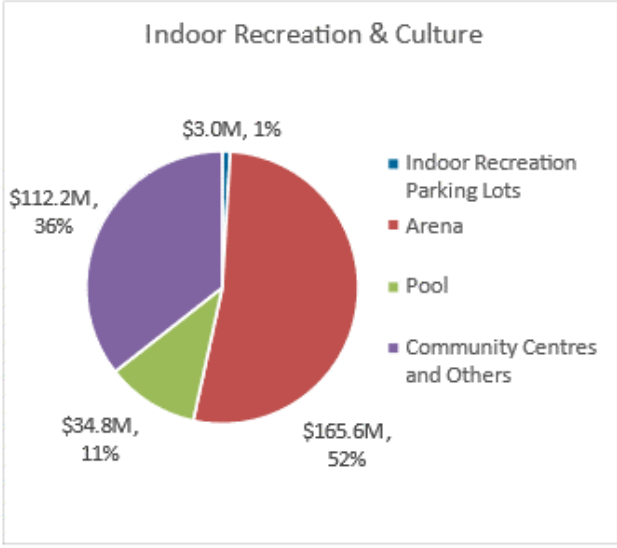
$315,607

Weighted Avg. Condition Rating:

Good

Average Age:

52 years



Libraries

Replacement Value ('000s):

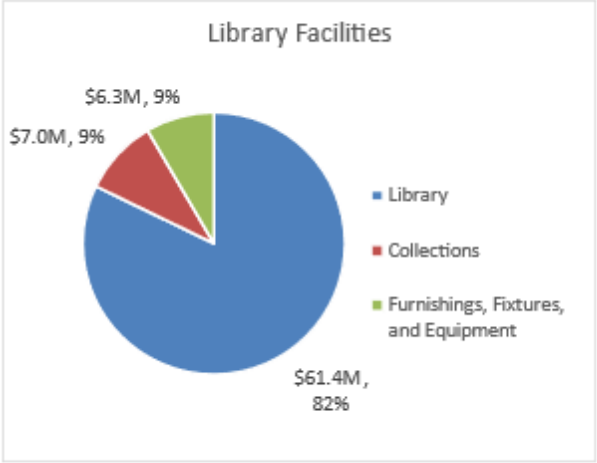
$74,660

Weighted Avg. Condition Rating:

Good

Average Age:

36 years (Library facilities)



Levels of Service

Current Levels of Service

Since recreation assets are classified as non-core assets under O.Reg. 588/17, there are 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. These levels of service are shown in Table 33 and Table 34.

Table 33: City Established Technical Levels of Service – Indoor Recreation & Culture

Service Function	Service Attribute	Technical Measures of Service	2023	2024	Target
Community Development	Accessible	Community use hours of recreation facilities and sports fields	56,428	62,070	62,070
Community Development	Accessible	Number of program hours offered by neighborhood associations	27,082	29,000	29,000
Community Development	Accessible	Youth drop in program participation	1,100	1,800	1,800
Recreation Programming	Accessible	Number of unique individuals served for friendly visiting	900	950	950

Service Function	Service Attribute	Technical Measures of Service	2023	2024	Target
		program and adult day program			
Recreation Programming	Accessible	Summer camp fill rate	94%	92%	92%
Recreation Programming	Accessible	Total number of registered programs/services	3,025	3,325	3,325

Table 34: City Established Technical Levels of Service – Libraries

Service Function	Service Attribute	Technical Measures of Service	2023	2024	Target
Library Services	Accessible	Library electronic visits	636,000	750,000	750,000
Library Services	Accessible	Library in person visits	550,000	575,000	575,000
Library Services	Accessible	Library program attendance	60,000	65,000	65,000
Library Services	Accessible	Library space per capita	0.6		
Library Services	Accessible	# of lendable items per capita	1.7		
Library Services	Accessible	# of hrs weekly of service maintained across 5 facilities	311		

Asset Lifecycle Management Strategy

The City performs the following to lifecycle activities on its indoor recreation & culture assets, as well as library assets to maintain assets in a state of good repair and provide the appropriate levels of service. The library's lifecycle activities align to the City's practices and other governing bodies. The lifecycle activities are shown below in Table 35.

Table 35: Lifecycle Activities – Indoor Recreation & Culture and Libraries

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

Activity	Description	Asset	Frequency
		Protection Equipment	
Operations and Maintenance	Winter maintenance	All	As needed, seasonally
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Growth & Service Enhancement	Construction of new facilities or upgrades to existing facilities	Facilities	As needed
Growth & Service Enhancement	Acquisition of equipment	Equipment	As needed
Disposal	Disposal activities related to replacement	All	As needed
Disposal	Decommissioning	All	As needed

Financial Strategy

Asset Investment Needs

The following sections describe our capital and operational investment needs to maintain existing infrastructure and associated service delivery along with the requirements for additional infrastructure to meet the growing needs and demands of our communities. We also highlight the Capital Investment Plan that was approved by the City for 2024-2033.

Operating Budget

In 2024, the City is expecting to spend $13.9M and $9.3M on Indoor Recreation & Culture and Libraries operating needs, respectively, as shown in Figure 15.

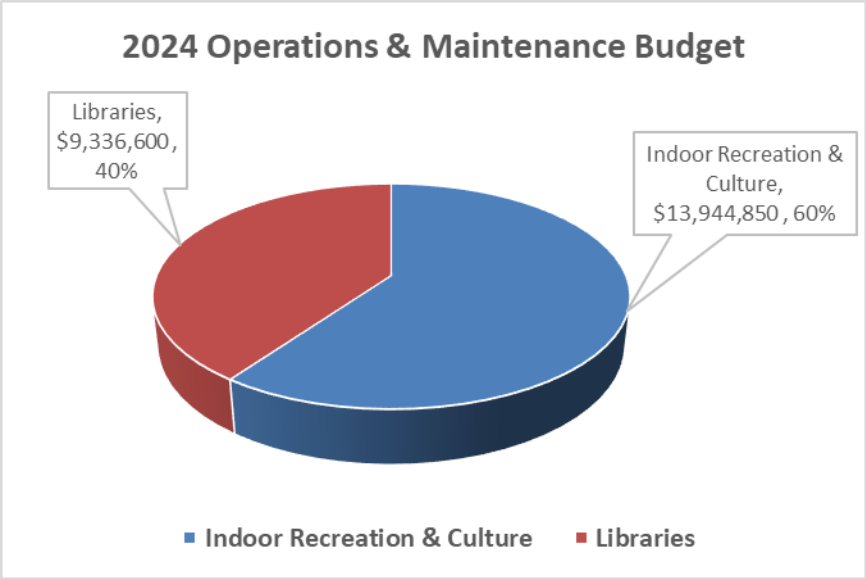


Figure 15: 2024 Operations & Maintenance Budget – Recreation & Culture

Capital Budget

Figure 16 presents the approved capital investment plan proposed to sustain our current services for the next 10 years along with projects designed to meet our projected growth requirements for Indoor Recreation Services.

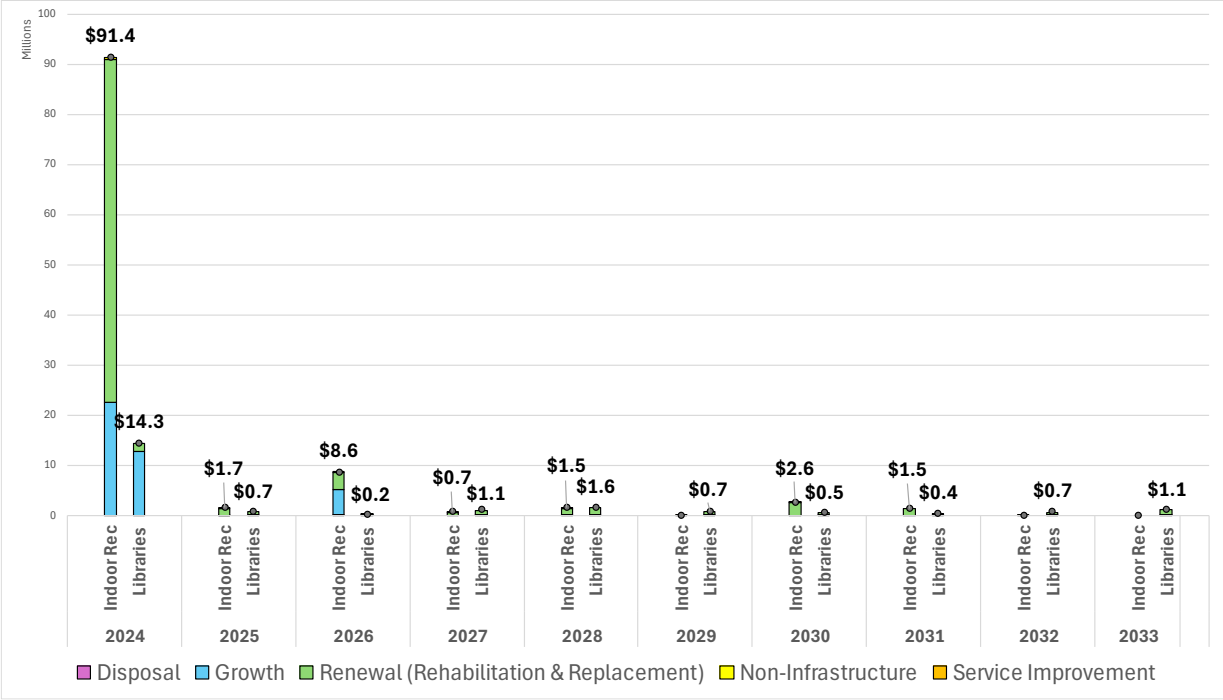


Figure 16: 2024-2033 Capital Investment Plan – Recreation & Culture

The capital budget forecast consists of the required funding over the next 10 years which is $129.2M. Expenditures are categorized as non-infrastructure solutions (such as master plans, studies, improvement plans, etc.), renewal activities (such as rehabilitation and replacement), and growth and service enhancement activities (such as upgrades to existing infrastructure like Auditorium/Library expansion, and construction of new assets to service a new area).

Table 36 below provides a summary of the anticipated funding over the next 10 years.

Note that a 2% increase has been applied to the 2024 operations & maintenance budget and to each year after to forecast operating expenditures.

Table 36: Funding Summary – Recreation & Culture

Year	Non-Infrastructure Solutions	Disposal	Operations & Maintenance	Renewal (Rehabilitation & Replacement)	Growth	Service Improvement	Total
2024	$506,800	-	$23,281,450	$69,866,380	$35,342,020		**$128,996,650**
2025	$224,083	$50,000	$23,747,079	$1,939,100	$109,000		**$26,069,262**
2026	$26,533	$100,000	$24,222,021	$3,551,000	$5,148,000		**$33,047,554**
2027	$175,750	-	$24,706,461	$1,379,400	$109,000	$100,000	**$26,470,611**
2028	$99,033	$250,000	$25,200,590	$2,718,600	$109,000		**$28,377,223**
2029	$37,500	-	$25,704,602	$578,000	$109,000		**$26,429,102**
2030	$63,883	-	$26,218,694	$2,878,800	$109,000		**$29,270,377**
2031	-	-	$26,743,068	$1,746,500	$109,000		**$28,598,568**
2032	$28,500	-	$27,277,929	$478,000	$109,000	$130,000	**$28,023,429**
2033	-	-	$27,823,488	$961,600	$109,000		**$28,894,088**

APPENDIX F: RESOURCE MANAGEMENT

Total Replacement Value

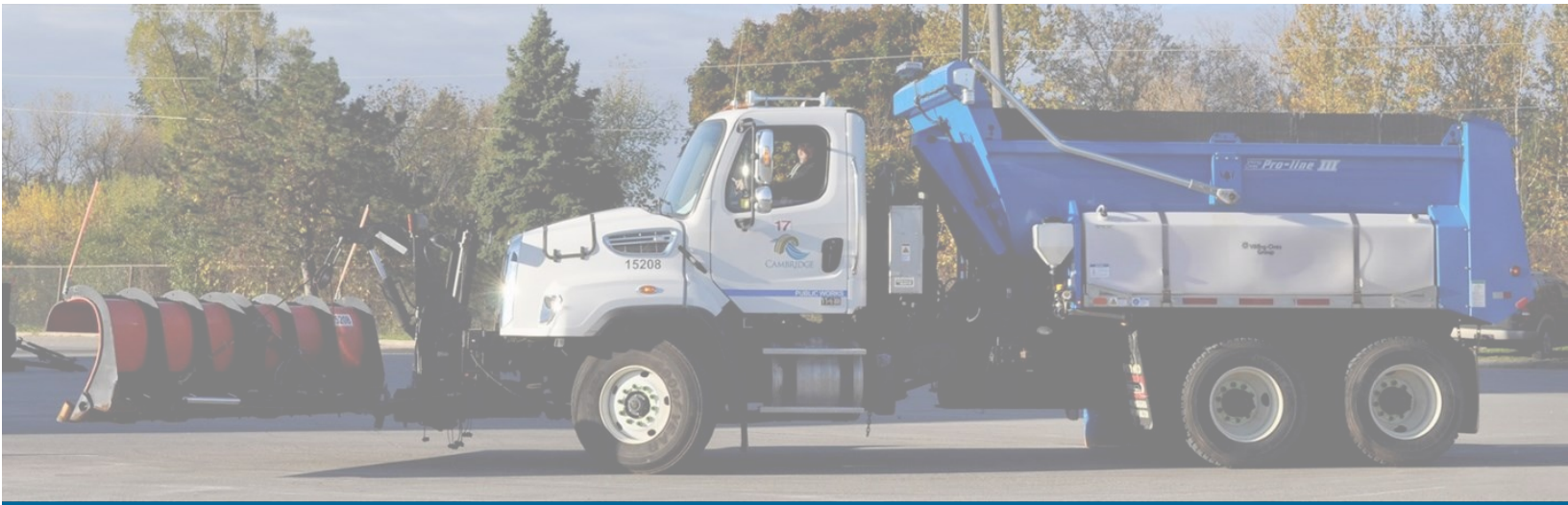
$222.9 Million

Overall Average Asset Condition

Good

Asset Quick Facts

- Resource Management assets help provide municipal services
- Corporate and Operations buildings, fleet and equipment, information technology infrastructure



APPENDIX F: Resource Management

Introduction

This 2024 Interim Asset Management Plan includes the resource management assets shown in Table 37. From the 2019 Asset Management Plan, the scope of assets remains the same as there have been no new/additional resource management asset types implemented.

Table 37: Resource Management Assets

Service Function:	**Resource Management**		
Asset Class:	**Corporate Facilities**	**Fleet and Equipment**	**Information and Communication Technology Infrastructure**
Asset Type:	• Corporate Facilities • Leased Buildings	• Fleet and Equipment	• Information and Communication Technology Infrastructure

State of Infrastructure

Our resource management 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 resource management assets extends into all other portfolios, which is what makes them particularly important.

For our resource management assets, based on replacement value, **2%** of our corporate facility assets are in poor or very poor condition, and **81%** are in good or very good condition; **57%** of our fleet and equipment assets are in poor or very poor condition, and **26%** are in good or very good condition; and **7%** of our IT assets are in poor or very poor condition, and **83%** are in good or very good condition.

Resource Management Overview

Replacement Value

$222.9

Total replacement value of all assets within the resource management asset class

Condition

Good

Weighted average condition rating of resource management asset across all subclasses

Asset Types

Three

Distinct asset types that we manage as part of our resource management portfolio

Asset Types

Corporate Facilities

3 corporate facilities

9 operations facilities

10 parking lots

35 maintenance and storage facilities

6 corporate leased facilities

Fleet and Equipment

263 fleet vehicles

296 equipment assets

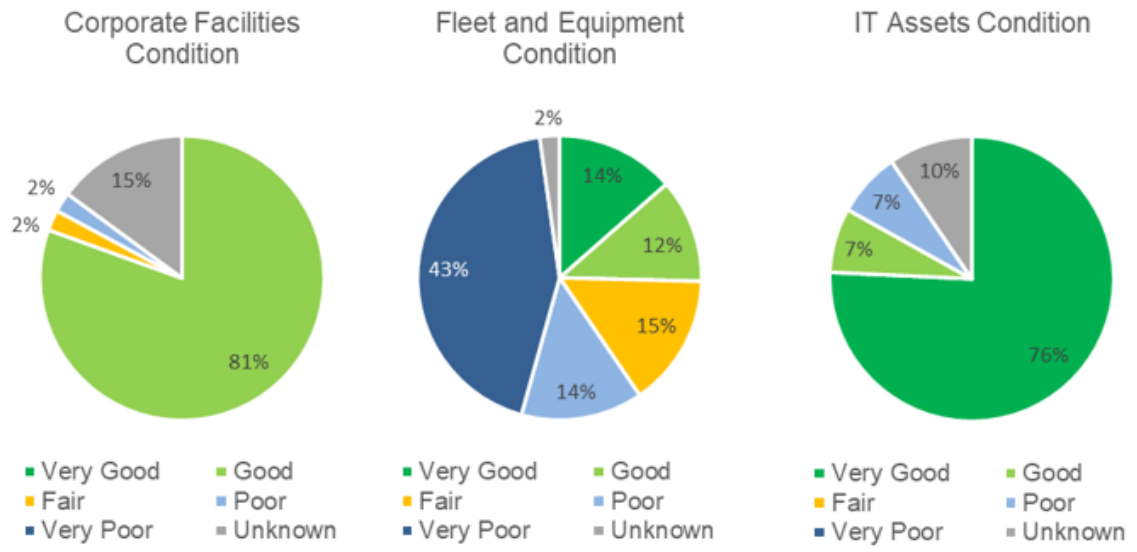
Information and Communication Technology Infrastructure

572 computers

585 cell phones/ tablets

45 TVs

Diverse software applications



* Condition based on replacement value

Corporate Facilities

Replacement Value ('000s):

$151,134

Weighted Avg. Condition Rating:

Good

Average Age:

N/A

Fleet and Equipment

Replacement Value ('000s):

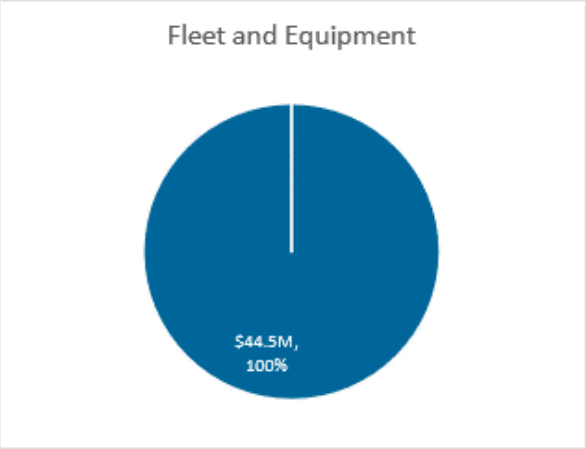
$44,521

Weighted Avg. Condition Rating:

Poor[7]

Average Age:

N/A



Fleet assets note[7]

IT Assets

Replacement Value ('000s):

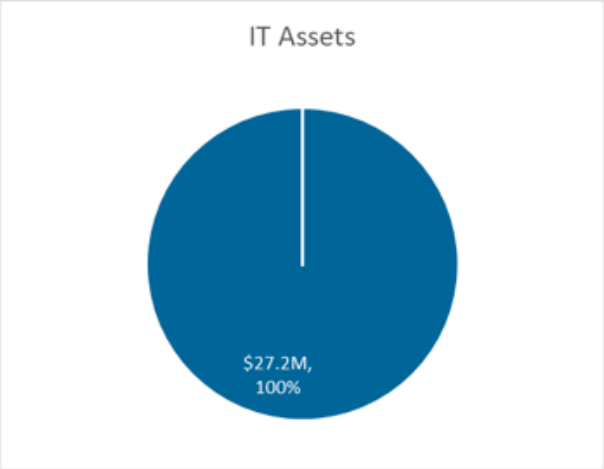
$27,200

Weighted Avg. Condition Rating:

Very Good

Average Age:

N/A



[7] Fleet assets worth $8.7M are approved for replacements and currently on-order waiting for delivery. Once these assets are in operations the overall fleet asset condition will change to Fair.

Levels of Service

Current Levels of Service

Since resource management assets are classified as non-core assets under O.Reg. 588/17, there are 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. The levels of service for Facilities, Fleet and Information Technology are shown in tables Table 38, Table 39, and Table 40 respectively.

Table 38: City Established Technical Levels of Service - Facilities

Service Attribute	Technical Measures of Service	2023
Quality	% of Building and Facility Assets in 'Very Good' or 'Good' Condition	73
Reliable	% of planned maintenance activities completed as per schedule	100
Reliable	# of major incidents (service disruptive) in facilities	2
Environmental Stewardship	Facilities with LEED certification	3
Environmental Stewardship	Annual natural gas consumption per square foot	Future AMP
Environmental Stewardship	Annual water consumption per square foot (L/sq.ft.)	Future AMP
Environmental Stewardship	Annual hydro consumption per square foot (kWh/sq.ft.)	Future AMP

Table 39: City Established Technical Levels of Service - Fleet

Service Attribute	Technical Measures of Service	2023
Environmental Stewardship	Percentage of Fleet Vehicles Electric or Hybrid	10
Quality	Average Age of Fleet Vehicles (years)	8

Service Attribute	Technical Measures of Service	2023
Quality	Percentage of Fleet Vehicles with extended service life	10
Quality	Annual number of vehicles being replaced early due to rust/corrosion, excessive mileage, mechanical condition.	3
Quality	Percentage of fleet in fair or better condition	41

Table 40: City Established Technical Levels of Service - Information Technology

Service Attribute	Technical Measures of Service	2023	2024	Target
Reliable	Percentage of corporation satisfaction with the reliability and functionality of applications and business systems	85%	85%	85%
Quality	Percentage of end-user devices within determined lifecycles	90%	90%	90%
Accessible	Percentage of internal network availability	99%	99%	99%
Scope	Number of service/support requests (excluding enhancements and projects)	8,500	9,000	9,000
Reliable	Percentage of service desk calls resolved within 24 hours	45%	40%	40%
Reliable	Percentage of total resolved incidents/service request versus new created per year	95%	90%	90%
Reliable	Reduction in number of help desk requests	11	10	10

Asset Lifecycle Management Strategy

The City performs the following to lifecycle activities on its resource management assets to maintain assets in a state of good repair and provide the appropriate levels of service. The lifecycle activities are listed in Table 41.

Table 41: Lifecycle Activities – Resource Management

Activity	Description	Asset	Frequency
Non-Infrastructure Solutions	Developing Master Facilities Plan and Corporate Technology Strategic plan	All	As required
Non-Infrastructure Solutions	Stakeholder engagement to understand community needs	All	As required
Non-Infrastructure Solutions	Development Charges Study Report to determine needs	All	As required
Operations and Maintenance	Unplanned maintenance activities	All	As required
Operations and Maintenance	Planned maintenance activities-based on number of kms driven and seasonal conversion of vehicles and/or attachments	Fleet & Equipment	As per maintenance schedule
Operations and Maintenance	Planned minor repair, renovation and other maintenance activities	Corporate Facilities	As planned
Operations and Maintenance	Regular building condition assessments	Corporate Facilities	As required
Operations and Maintenance	Daily inspections & annual commercial vehicle safety inspections	Fleet	Daily
Rehabilitation and Renewal	Annual needs assessment	All	Annually
Growth & Service Enhancement	Construction of new facilities or upgrades to existing facilities	Corporate Facilities	As required

Activity	Description	Asset	Frequency
Growth & Service Enhancement	EV Charging infrastructure	Fleet	As required
Disposal	Disposal activities related to replacement	All	As required
Disposal	Decommissioning	All	As required

Financial Strategy

Asset Investment Needs

The following sections describes our capital and operational investment needs to maintain existing infrastructure and associated service delivery along with the requirements for additional infrastructure to meet the growing needs and demands of our communities. We also highlight the Capital Investment Plan that was approved by the City for 2024-2033.

Operating Budget

In 2024, the City is expecting to spend $9.5M, $4.5M and $3.8M on Information & Communication – Technology Infrastructure, Fleet and Corporate Facilities operating needs, respectively. The expected 2024 operating budget is shown in Figure 17.

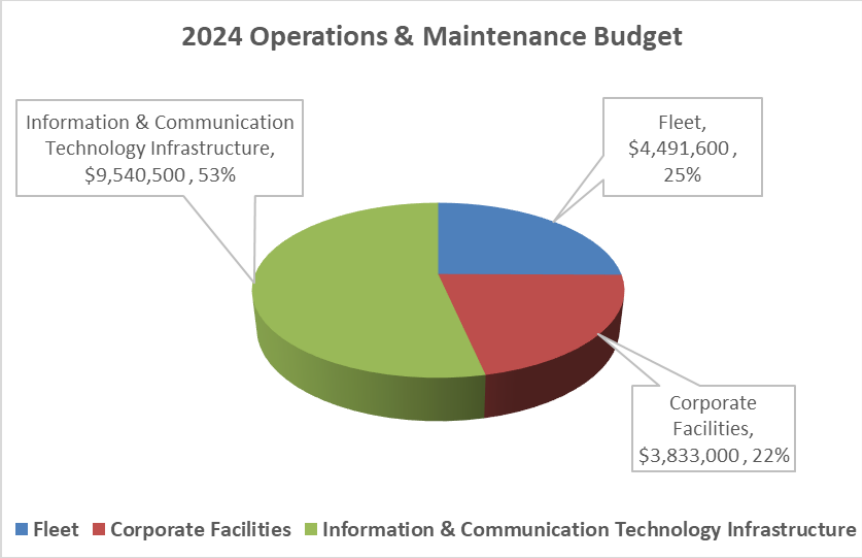


Figure 17: 2024 Operations & Maintenance Budget – Resource Management

Capital Budget

Figure 18 presents the approved capital investment plan proposed to sustain our current services for the next 10 years along with projects designed to meet our projected growth requirements for Resource Management assets.

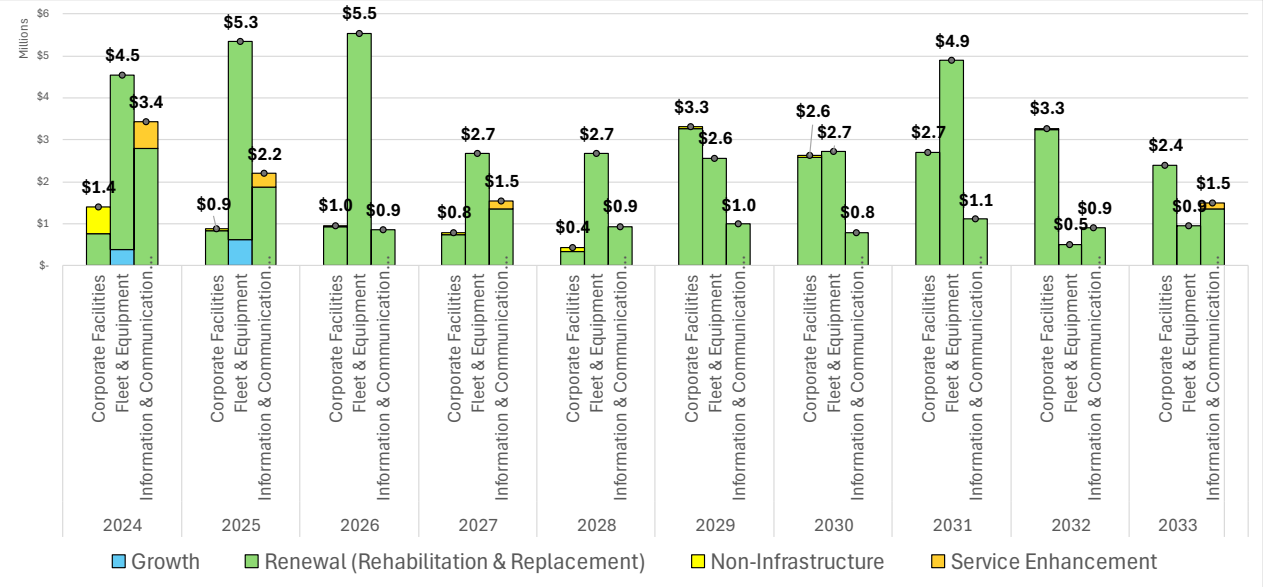


Figure 18: 2024-2033 Capital Investment Plan – Resource Management

The capital budget forecast consists of the required funding over the next 10 years which is $65.4M. Expenditures are categorized as non-infrastructure solutions (such as master plans, studies, improvement plans, etc.), renewal activities (such as rehabilitation and replacement), and growth and service enhancement activities (such as upgrades to existing infrastructure, and installation of new assets like electric vehicle charging infrastructure throughout the City).

Table 42 below provides a summary of the anticipated funding over the next 10 years.

Note that a 2% increase has been applied to the 2024 operations and maintenance budget and to each year after to forecast operating expenditures.

Table 42: Funding Summary – Resource Management

Year	Non-Infrastructure Solutions	Operations & Maintenance	Renewal (Rehabilitation & Replacement)	Growth	Service Enhancement	Total
2024	$631,800	$17,865,100	$7,742,000	$376,600	$625,000	**$27,240,500**
2025	$49,083	$18,222,402	$7,420,000	$614,300	$325,000	**$26,630,785**
2026	$26,533	$18,586,850	$7,316,900	-	-	**$25,930,283**
2027	$60,750	$18,958,587	$4,745,100	-	$200,000	**$23,964,437**
2028	$99,033	$19,337,759	$3,946,600	-	-	**$23,383,392**
2029	$37,500	$19,724,514	$6,831,800	-	-	**$26,593,814**
2030	$63,883	$20,119,004	$6,088,000	-	-	**$26,270,887**
2031	-	$20,521,384	$8,708,800	-	-	**$29,230,184**
2032	$28,500	$20,931,812	$4,655,600	-	-	**$25,615,912**
2033	-	$21,350,448	$4,694,800	-	$150,000	**$26,195,248**

APPENDIX G: O. Reg. 588/17 Compliance

An overview of the City's compliance for asset management plans based on O. Reg. 588/17 can be found in Table 43. Upon endorsement from Council this document, along with the 2019 Asset Management Plan, will be fully compliant to meet the 2024 regulation requirements.

Table 43. O. Reg. 588/17 Asset Management Plan Compliance

Section	Regulation Requirement	Compliant Check
4.	**Every municipality shall prepare its first strategic asset management policy by July 1, 2019 and shall review and, if necessary, update it at least every five years.**	Review and update due by 2024
5.(1)	**Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2022, and in respect of all of its other municipal infrastructure assets by July 1, 2024.**	Yes
5. (2)	**A municipality's asset management plan must include the following:**	
5. (2) 1.	For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan	Yes
5. (2) 1. i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	Yes
5. (2) 1. ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	Yes
5. (2) 2.	The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan	Yes
5.(2) 3.	For each asset category,	Yes

Section	Regulation Requirement	Compliant Check
5.(2) 3. i.	A summary of the assets in the category,	Yes
5.(2) 3. ii.	The replacement cost of the assets in the category,	Yes
5.(2) 3. iii.	The average age of the assets in the category, determined by assessing the average age of the components of the assets,	Yes
5.(2) 3. iv.	The information available on the condition of the assets in the category, and	Yes
5.(2) 3. v.	A description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.	Yes
5.(2) 4.	For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service as described in paragraph 1 for each of the 10 years following the year for which the current levels of service under paragraph 1 are determined and the costs of providing those activities based on an assessment of the following:	Yes
5.(2) 4. i.	The full lifecycle of the assets	Yes
5.(2) 4. ii.	The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.	Yes
5.(2) 4. iii.	The risks associated with the options referred to in subparagraph ii.	Yes
5.(2) 4. iv.	The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.	Yes
5.(2) 5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:	N/A
5.(2) 5. i.	A description of assumptions regarding future changes in population or economic activity.	N/A
5.(2) 5. ii.	How the assumptions referred to in subparagraph i relate to the information required by paragraph 4.	N/A
5.(2) 6.	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following:	Yes
5.(2) 6. i.	With respect to municipalities in the Greater Golden Horseshoe growth plan area, if the population and	N/A

Section	Regulation Requirement	Compliant Check
	employment forecasts for the municipality are set out in Schedule 3 or 7 to the 2017 Growth Plan, those forecasts.	
5.(2) 6. ii.	With respect to lower-tier municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are not set out in Schedule 7 to the 2017 Growth Plan, the portion of the forecasts allocated to the lower-tier municipality in the official plan of the upper-tier municipality of which it is a part.	Yes
5.(2) 6. iii.	With respect to upper-tier municipalities or single-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the municipality that are set out in its official plan.	N/A
5.(2) 6. iv.	With respect to lower-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the lower-tier municipality that are set out in the official plan of the upper-tier municipality of which it is a part.	N/A
5.(2) 6. v.	If, with respect to any municipality referred to in subparagraph iii or iv, the population and employment forecasts for the municipality cannot be determined as set out in those subparagraphs, a description of assumptions regarding future changes in population or economic activity.	N/A
5.(2) 6. vi.	For each of the 10 years following the year for which the current levels of service under paragraph 1 are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets.	Yes
5. (3)	**Every asset management plan must indicate how all background information and reports upon which the information required by paragraph 3 of subsection (2) is based will be made available to the public.**	Yes

Section	Regulation Requirement	Compliant Check
5. (4)	**In this section,** **"2017 Growth Plan" means the Growth Plan for the Greater Golden Horseshoe, 2017 that was approved under subsection 7 (6) of the Places to Grow Act, 2005 on May 16, 2017 and came into effect on July 1, 2017; ("Plan de croissance de 2017")** **"Greater Golden Horseshoe growth plan area" means the area designated by section 2 of Ontario Regulation 416/05 (Growth Plan Areas) made under the Places to Grow Act, 2005**	
6. (1)	**Asset management plans, proposed levels of service** **Subject to subsection (2), by July 1, 2024 (2025), every asset management plan prepared under section 5 must include the following additional information:**	2025 AMP
6. (1) 1.	For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following the year in which all information required under section 5 and this section is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics:	2025 AMP
6. (1) 1. i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	2025 AMP
6. (1) 1. ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	2025 AMP
6. (1) 2.	An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality, based on an assessment of the following:	2025 AMP
6. (1) 2. i.	The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality.	2025 AMP
6. (1) 2. ii.	How the proposed levels of service differ from the current levels of service set out under paragraph 1 of subsection 5 (2).	2025 AMP
6. (1) 2. iii.	Whether the proposed levels of service are achievable.	2025 AMP
6. (1) 2. iv.	The municipality's ability to afford the proposed levels of service.	2025 AMP

Section	Regulation Requirement	Compliant Check
6. (1) 3.	The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.	2025 AMP
6. (1) 4.	A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period referred to in paragraph 1:	2025 AMP
6. (1) 4. i.	An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:	2025 AMP
6. (1) 4. i. A.	The full lifecycle of the assets.	2025 AMP
6. (1) 4. i. B.	The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.	2025 AMP
6. (1) 4. i. C.	The risks associated with the options referred to in sub-subparagraph B.	2025 AMP
6. (1) 4. i. D.	The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.	2025 AMP
6. (1) 4. ii.	An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.	2025 AMP
6. (1) 4. iii.	An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.	2025 AMP
6. (1) 4. iv.	If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,	2025 AMP
6. (1) 4. iv. A.	An identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and	2025 AMP

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

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