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MAY 2025

VERSION 2.0

Government Services and Information Technology

Asset Management Plan

Introduction

1.1 BACKGROUND

Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure (Sections 5 and 6) requires all municipalities to prepare asset management plans for all their assets. The purpose of this legislation is to have municipalities demonstrate they can maintain their assets, balancing affordability, risk, and service levels over the next ten years.

To meet the provincial requirements, the City has created this latest version of its Government Services and Information Technology Asset Management Plan. It reports the current state of the assets, target and expected levels of service, strategies and activities applied by the City, historical and forecasted financial details, risks and non-financial strategies, and potential improvement actions. It is a strategic document that provides a snapshot of current conditions and establishes a basis for future asset management planning and decision making.

1.2 SUPPORT FOR CITY GOALS

This Asset Management Plan supports the City's 2023-2026 City Strategic Plan and the strategic priority of *a city that is green and resilient* by providing the infrastructure of the business systems (especially computers and telecommunications) and the online access to government services intended to serve all members of the community. Specifically, it aligns with the strategic objectives to:

- Reduce emissions associated with the City's operations and facilities.
- Increase resiliency to extreme weather and changing climate conditions.
- Improve key infrastructure through asset management.

1.3 ASSET CLASSES AND TYPES

The regulation requires that for each asset category a summary of the assets is provided. The Government Services and IT Asset Management Plan includes assets that support the provision of administrative and corporate services and technology solutions that support service delivery.

Government Services and IT Asset Classes and Types

Government Services Facilities
• Facilities

Government Services Fleet
• Fleet

Information Technology[1]	
• Appliances	• Mobile Devices
• Audio Visual	• Network Infrastructure
• Data Centres	• Servers
• Desktop Devices	• Software (applications)
• IT Storage	• Telecom Equipment
• Laptop Devices	

1: The inventory reported does not capture all IT assets owned by the City because comprehensive reliable asset data was not available.

State of Local Infrastructure

The regulation requires that for each asset category a summary of the replacement costs, average age of the assets, information available on the condition and a description of the municipality's approach to assessing condition is provided. The values in this section are based on asset data from January 2023.

2.1 ASSET INVENTORY AND VALUATION

The total replacement cost of Government Services and IT assets is approximately $424 million as summarized in the table below.

Government Services and IT Asset Inventory and Replacement Cost

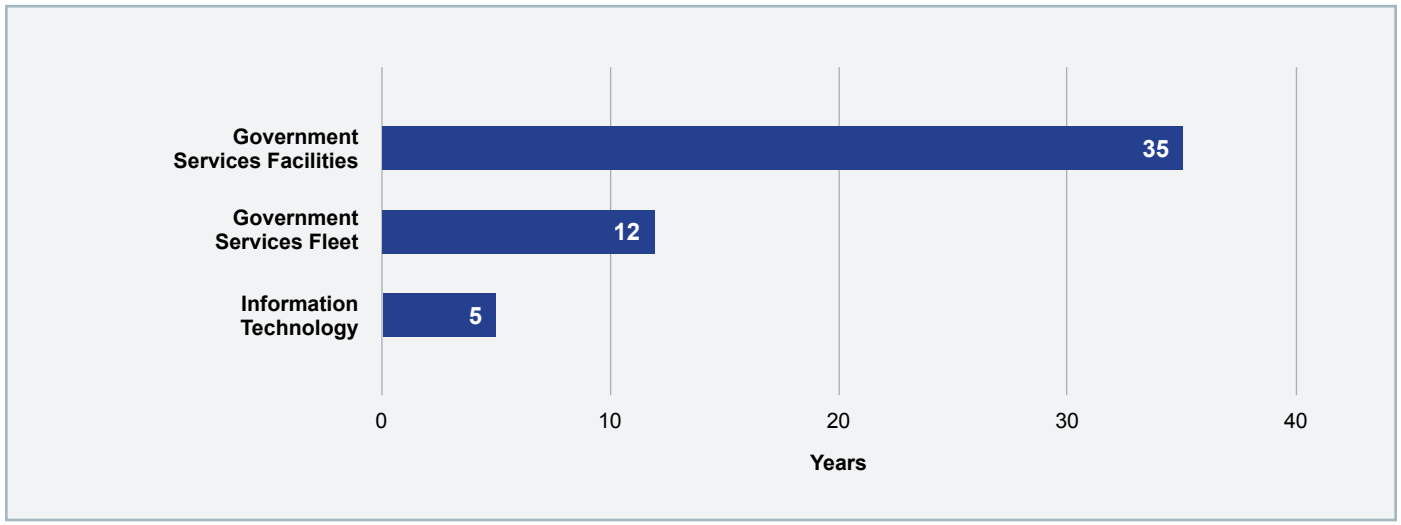
Asset Class	Inventory	Replacement Cost (Millions; 2023$)
Government Services Facilities	6	$293
Government Services Fleet	243	$28
Information Technology[2]	36,836	$103

2: Information Technology asset data is a "snapshot"; inventories and asset attributes change rapidly due to the nature of the industry.

2.2 ASSET AGE AND CONDITION

The age of an asset gives a sense of how close it is to the end of its service life and what renewal interventions may be appropriate. The average age of the City's Government Services and IT assets is shown in the figure below.

Average Age of Government Services and IT Assets



The City uses a range of techniques and solutions to collect and assess condition data, and at various frequencies, which is summarized in the following table.

Condition Data Collection Methods for Government Services and IT Assets

Asset Class	Condition Data Collection Technique	Frequency
Government Services Facilities	Building Condition Audit	10 years
Government Services Fleet	Inspection and maintenance	6 months and original equipment manufacturer maintenance schedule
Information Technology	Age-based	Annually

Based on condition data, supplemented by subject matter expert knowledge and professional judgment, the condition of assets is rated on a scale from "Very Good" to "Very Poor" as shown in the table below.

Five-point Scale for Government Services and IT Asset Condition

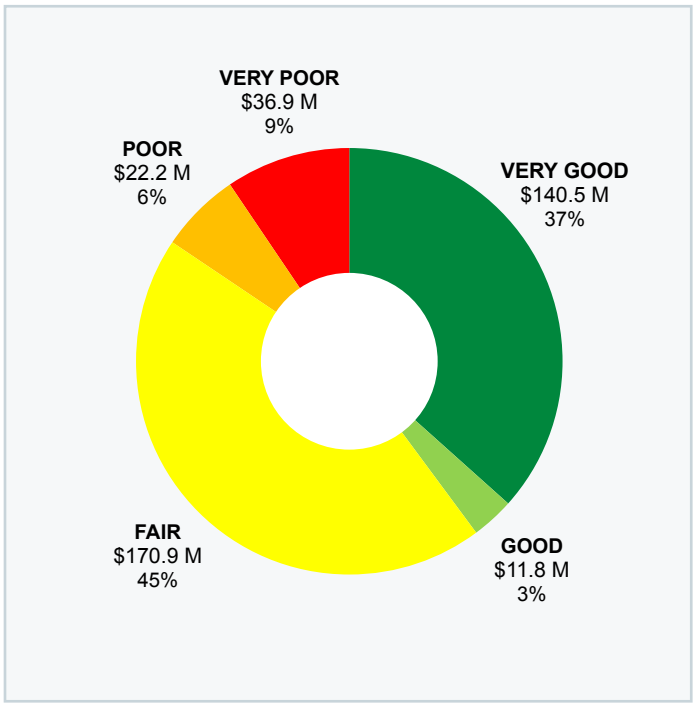
Rating	Rating Description	Facility Condition Index (FCI)[3]	Life Remaining	Subject Matter Expert Opinion (based on Life Consumed)
		(Government Services Facilities)	(Government Services Fleet)	(Information Technology)
Very Good	**Sound Physical Condition** No short-term failure risk and no work required	< 0.02	> 75%	Subject Matter Expert Opinion (based on life consumed)
Good	**Adequate for Now** Acceptable, generally in mid stage of expected service life	0.02 – 0.05	51% – 75%	
Fair	**Requires Attention** Signs of deterioration, requires attention, some elements exhibit deficiencies	0.05 – 0.15	26% – 50%	
Poor	**Increasing Potential of Affecting Service** Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	0.15 – 0.30	0% – 25%	
Very Poor	**Unfit for Sustained Service (built infrastructure) / Nearing End of Life (fleet)** Near or beyond expected service life, widespread signs of advanced deterioration, some built assets may be unusable	> 0.30	<0% (outside of lifecycle)	

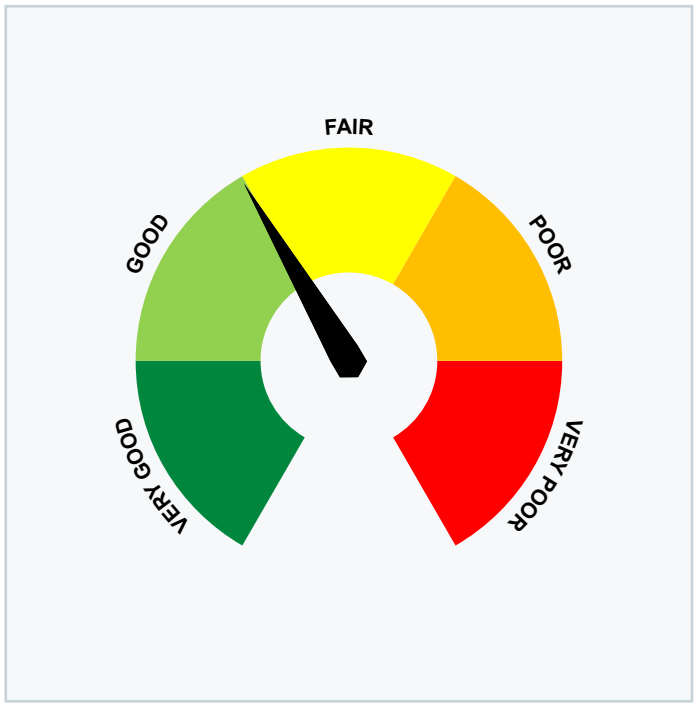
3: Where FCI = 0, or no deferred maintenance is reported, or required maintenance is reported but has not yet been deferred, condition is reported based on typical useful life consumed as follows:

Condition	Very Good	Good	Fair	Poor	Very Poor
Typical Useful Life Consumed	< 40%	40% – 70%	70% – 90%	90% – 100%	≥ 100%

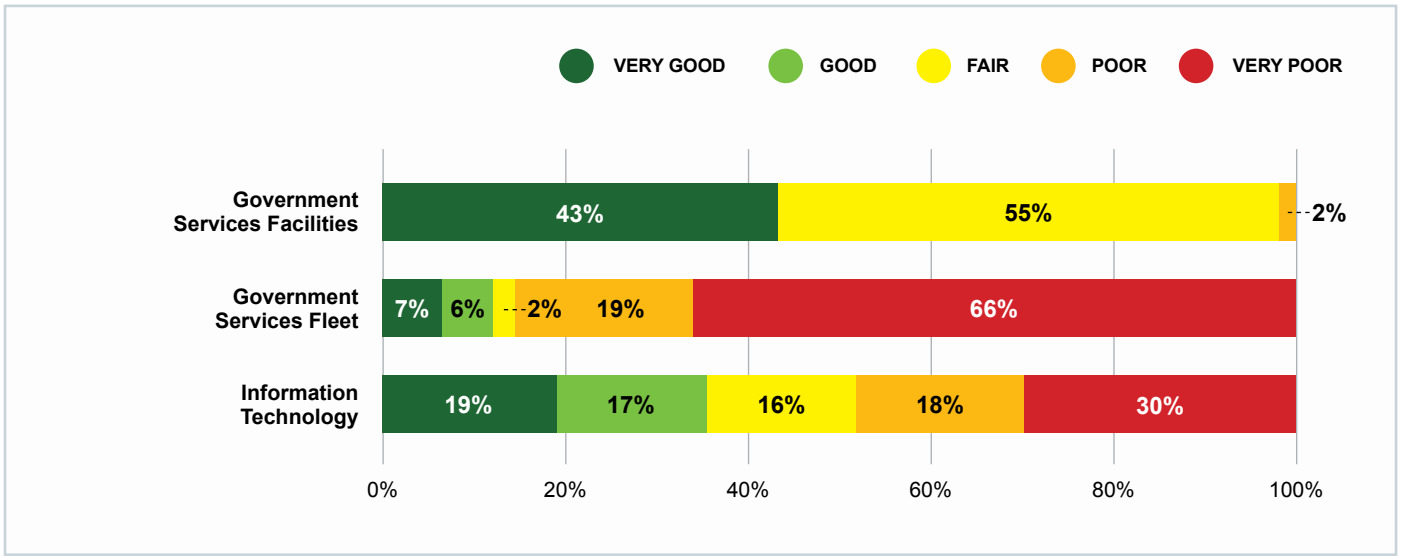
The overall condition rating for Government Services and IT assets is Good to Fair and a breakdown for the various asset classes is shown in the figures below. Condition distribution percentages are weighted based on replacement cost.

Overall Condition Profile of Government Services and IT Assets





Condition Profile of Government Services and IT Assets



Approximately two-thirds of fleet assets are shown to be in "Very Poor" condition because of the inclusion of "motor pool" vehicles, which are deemed acceptable for continued service despite being aged beyond their expected useful life (which results in them being assessed as "Very Poor" condition). Once "motor pool" vehicles are deemed no longer fit for service, they are disposed by the City and no renewal or replacement is required.

Nearly one-third of Information Technology asset are shown to be in "Very Poor" condition because condition is approximated based on age and expected useful life, rather than directly observed condition assessment, so confidence in this finding is therefore low. The results presented are based on an industry standard TIME (Tolerate, Invest, Migrate and Eliminate) model which evaluates infrastructure, application, and assets on criteria such as age, replacement cost, support and warranty, business criticality and risk.

Levels of Service

3.1 LEVEL OF SERVICE CONTEXT

The City's assets exist to deliver service to customers. Levels of service measure the actual service delivered so that decisions can be made about the assets based on the service that they provide rather than simply on their condition. The regulation requires that the Asset Management Plan includes 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 the plan is published.

The Government Services and IT Asset Management Plan establishes level of service measures and reports the current levels of service being provided. The measures align with City goals and recognize that Government Services and IT assets should be managed in a way that:

- Reduces emissions associated with the City's operations and facilities.
- Increases resiliency to extreme weather and changing climate conditions.
- Provides accessible facilities.
- Maintains assets in a state of good repair.
- Provides sustainable and affordable services over the long-term.

3.2 HISTORICAL AND CURRENT LEVELS OF SERVICE

The levels of service measures for Government Services and IT are shown in the table below. The performance reported includes:

- Historical performance, showing the service levels reported in the previous version of the Asset Management Plan.
- Current performance, showing the service levels being provided by the City based on the latest available information.

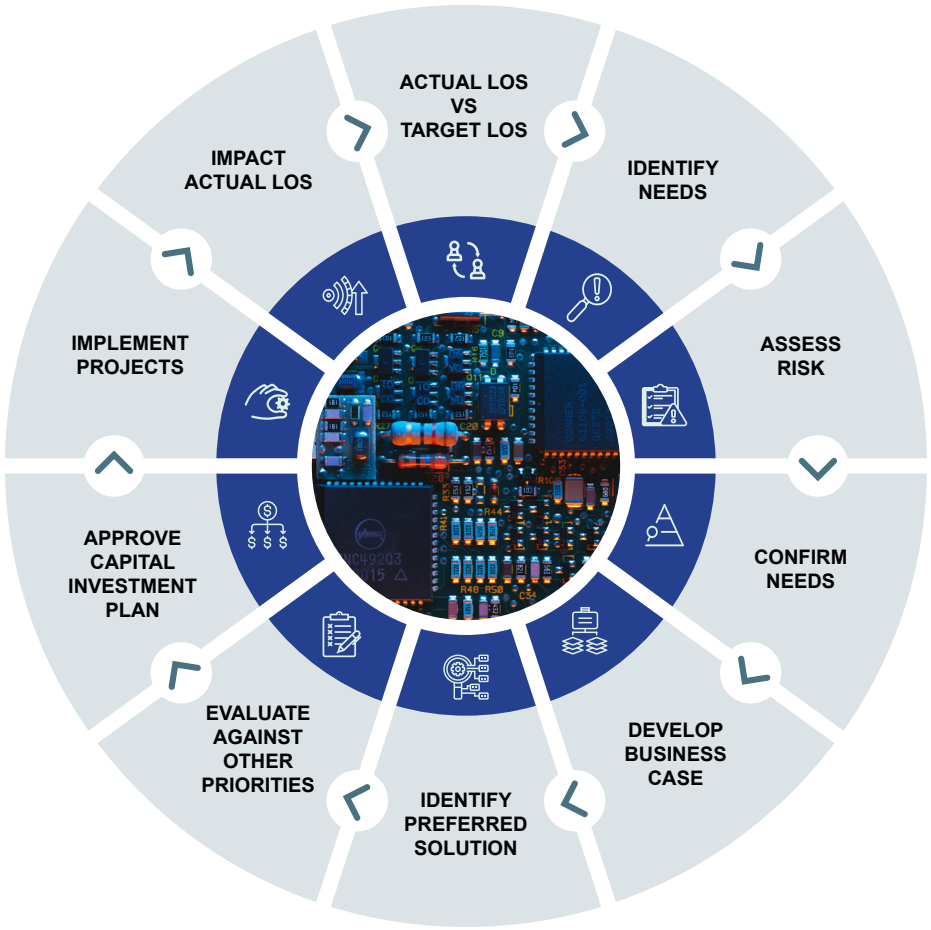
Levels of Service for Government Services and IT

Service Attribute	Community Level of Service	Technical Level of Service	Historical Performance (2022)	Current Performance (2023)
Function	Reduce emissions associated with the City's operations and facilities	Annual GHG emissions from Government Services buildings per thousand square feet (tonnes CO_2e)	2.5 t/1,000 sq. ft.	2.5 t/1,000 sq. ft.
		Annual GHG emissions from Government Services fleet (tonnes CO_2e)	2,046 t	895 t
	Increase resiliency to extreme weather and changing climate conditions	Percent of facilities with backup power for critical building systems	31%	33%
		Percent of critical facilities with a completed climate risk assessment	Not reported	0%
	Provide accessible facilities	Percent of facilities with accessibility audit completed	0%	0%
Reliability	Maintain assets in a state of good repair	Number of computer incident responses to hardware events	1	0
		Number of major internet outages	1	1
		Percent of IT equipment assets in fair or better condition	52%	52%
		Percent of fleet assets in fair or better condition	15%	15%
		Facility Condition Index	0.086	0.072
Affordability	Provide sustainable and affordable services over the long-term	Asset Renewal Funding Ratio for IT equipment	Not reported	18.8%
		Asset Renewal Funding Ratio for Government Services Facilities	Not reported	0.6%
		Asset Renewal Funding Ratio for Government Services Fleet	Not reported	2.2%

Asset Management Strategy

4.1 PRACTICES, PROCEDURES AND TOOLS

The regulation requires that the Asset Management Plan defines a lifecycle management strategy with respect to the assets in each asset category for the 10-year period. One of the key objectives of asset management is to recognize the objectives of the City and align them with the City's long term financial plans. This will allow Council to make informed decisions and provide clear direction on how the City will balance service levels, risks, and costs.



The City has well-established practices to assess the risk of not meeting community and technical level of service standards and to determine the lowest lifecycle cost activities to reduce the risks to acceptable levels and the associated costs of undertaking them. The Asset Management Plan provides the needs forecast associated with achieving target levels of service and compares it to the planned budget to determine service area gaps or surpluses.

The various lifecycle activities are delivered by different parts of the organization. The asset management process is an opportunity to take a holistic view of the asset lifecycle and identify any assets that would benefit from coordinated implementation of lifecycle strategies. It is important that each type of asset has an appropriate blend of activities across its lifecycle and that staff interacting with the asset understand the interrelations between the various activities and their impact on cost, risk and service level.

4.2 GROWTH, ENHANCEMENT AND RENEWAL

In developing the Government Services and IT Asset Management Plan, a preliminary estimate was prepared of the cost of achieving the target levels of service. The estimate is based on 2024 data and includes forecasts of:

- Growth needs, based on IT Services' forecast of growth needs for IT assets (there are no growth needs identified for government services assets).
- Enhancement needs based on accessibility audits and building condition assessments, and input from subject matter experts, required to improve services, meet new or updated standards, or address accessibility.
- Renewal needs identified for facilities based on building condition audits and lifecycle forecasting for fleet and information technology, required to maintain assets in a state of good repair. These activities include major repairs, rehabilitation and replacement.
- Other renewal needs for IT assets outside the scope of this AMP (estimated to be equal to 50% of the planned budget), which are categorized as "Renewal – Other" to distinguish them in the funding analysis.

Ottawa's population is expected to increase to 1.4 million people by 2046, a significant increase of 40% since 2018, as summarized in the table below. This growth will put pressure on existing assets and services and may require new or expanded assets to meet growing needs.

City of Ottawa Population Projections for 2046

	2046 Projection	Growth since 2018
Population	1,409,650	402,150
Private Households	590,600	194,800
Jobs	827,000	189,500

Source: New Official Plan report to Council (ACS2021-PIE-EDP-0036), October 2021

The table below summarizes the future growth, enhancement and renewal needs forecast for Government Services and IT assets.

Growth, Enhancement and Renewal Needs Forecast for Government Services and IT

	10 Year Needs (millions; 2024$)				
Asset Class	**Growth**	**Enhancement**	**Renewal**	**Renewal - Other**	**Total**
Government Services Facilities	$0	$6.9	$132.6	$0	$139.5
Government Services Fleet	$0	Not applicable	$7.0	$0	$7.0
Information Technology[4]	$45.9	Indeterminate[5]	$107.5[6]	$49.9	Indeterminate
Total	**$45.9**	**Indeterminate**	**$247.1**	**$49.9**	**Indeterminate**

Totals may not sum exactly due to rounding.

4: Some IT assets are not captured in the Asset Management Plan; the values shown include only needs for assets captured in the Asset Management Plan.
5: Enhancement needs for IT assets are indeterminate due to the inability to predict shifts in corporate priority, term of Council priorities, audit response, and other strategy priorities or disruptions.
6: Information Technology renewal needs are reported in 2023 dollars.

As per the regulation, asset management planning also needs to consider the City's Climate Change Master Plan goals for both mitigation strategies to slow climate change impacts, such as reducing greenhouse gas emissions, and adaptation strategies to reduce negative impacts associated with existing and future climate change. The Asset Management Plan estimates the additional future costs due to climate change shown in the table below. These are preliminary estimates based on the latest information available, which will be refined over time.

Estimated Additional Future Costs Due to Climate Change for Government Services and IT

Additional Costs Due to Climate Change	Estimated 10 year Total Additional Cost (millions; 2024$)
Increased operations and maintenance costs due to gradual, long-term impacts of climate change[7]	$2.9
Increased capital renewal costs due to gradual, long-term impacts of climate change[8]	$2.6
Increased operations and maintenance costs due to extreme weather events[9]	$1.7
Increased capital costs to implement climate change mitigation actions including municipal fleet electrification and building retrofits[10]	$26.1
Total	**$33.3**

The estimates do not capture damage to capital infrastructure due to catastrophic/extreme weather events (e.g., tornadoes); increased capital renewal needs due to accelerated asset deterioration; increased growth costs to meet climate change requirements; increased capital renewal costs for assets other than buildings (such as fleet and equipment); and gradual, long-term impacts due to climate hazards other than extreme heat, extreme rainfall, and freeze-thaw cycles.

7: Estimated costs due to gradual, long-term impacts of climate change are based on the Financial Accountability Office of Ontario's "Costing Climate Impacts to Public Infrastructure" study.
8: Ibid.
9: Estimated operations and maintenance costs due to extreme weather events are based on historical City financial data and Task Force on Climate-Related Financial Disclosures (TCFD) reporting for recent significant weather events.
10: Estimated capital costs to implement climate change mitigation actions are based on the Energy Evolution study (2020) and subsequent detailed studies such as the Green Fleet Strategy.

4.3 OPERATIONS AND MAINTENANCE

Operations strategies are developed to deliver the services and involve consumption of resources such as human resources, energy, chemicals and materials. Maintenance strategies are the regular ongoing activities necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

New assets acquired or constructed by the City due to growth will incur additional future operations and maintenance costs beyond current expenditures. It is crucial for the City to evaluate these prospective costs and their affordability when making decisions regarding new asset acquisition or construction.

Financing Strategy

The regulation requires that the Asset Management Plan defines a financial strategy with respect to the assets in each asset category for the 10-year period. The City continues to invest responsibly in maintaining infrastructure and has been increasing its capital investments to align with long-range financial plans. Funding targets recommended in the 2017 Comprehensive Asset Management Program were focused on maintaining critical infrastructure in a state of good repair. There will be a need to update the long range financial plans once new service levels are defined to ensure financial sustainability.

5.1 EXPENDITURE HISTORY

For information on historical operating and capital expenditures, refer to the City's historical annual budget documents. Note that historical budget values function as estimates for expenditures, and actual spending may differ from the budgeted amounts shown.

5.2 EXPENDITURE FORECAST

Over the next 10 years, the City will continue investing in infrastructure to support operational expenses, respond to renewal needs, serve growth, and provide enhancements. The planned operating budget is based on Financial Service's 2024 operating budget forecast for Service Ottawa and Information Technology Services, and the planned capital budget is based on the City's 2024 10-year capital budget forecast.

Budget Forecast for Government Services and IT

Component	Budget Forecast (millions; 2024$)										
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Operating Budget[11]	$95.7	$98.1	$100.5	$103.1	$105.8	$108.7	$111.7	$114.8	$118.1	$121.6	**$1,078.1**
Capital Budget – Growth	$3.0	$3.4	$4.2	$4.8	$3.1	$3.3	$3.5	$3.7	$3.8	$3.8	**$36.6**
Capital Budget – Enhancement	$4.7	$5.3	$6.5	$7.4	$4.9	$5.2	$5.5	$5.8	$5.9	$5.9	**$57.1**
Capital Budget – Renewal	$6.3	$6.6	$5.4	$6.0	$6.9	$7.7	$8.4	$8.0	$8.3	$9.1	**$72.7**
Capital Budget – Renewal-Other	$3.3	$3.7	$4.1	$4.5	$4.9	$5.3	$5.7	$6.1	$6.2	$6.3	**$50.1**

Totals may not sum exactly due to rounding.

11: Values shown are net operating budget requirement after expenditure recoveries and revenues.

Funding Analysis

The regulation requires that an identification of the annual funding projected to be available to undertake lifecycle activities is summarized in the Asset Management Plan. If, based on the funding projected to be available, the municipality identifies a service area shortfall for the lifecycle activities identified, the regulation requires an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities needed.

The future capital funding needs are compared to planned budgets in order to identify potential service area shortfalls (or "gaps"), the risks to service that could result, and possible strategies to mitigate them.

6.1 SERVICE AREA GAP

An Asset Management Plan provides a forecast of where the City will be in 10 years with respect to some service level targets based on historic decisions on how the City invests in and manages assets. The service area gap is the difference between the forecasted capital investment needs and the investment that the City has budgeted. As a result, service area gaps can and will change as a result of future changes to policy, masterplans, population, service delivery, asset inventory, or investment by the City and other orders of government. Over the next 10 years, the total needs for Government Services and IT assets exceeds the planned budget, leading to a service area gap. The forecasted investment needs, planned budgets and service area gaps are summarized in the table and figure below.

Capital Service Area Gap for Government Services

Asset Class	10 Year Need (millions; 2024$)	10 Year Funding (millions; 2024$)	10 Year Gap (millions; 2024$)
Growth			
Government Services Facilities	$0	$0	$0
Government Services Fleet	$0	$0	$0
Growth Total	**$0**	**$0**	**$0**
Enhancement			
Government Services Facilities	$6.9	$1.9	($5.0)
Government Services Fleet	Not Applicable	$0	$0
Enhancement Total	**$6.9**	**$1.9**	**($5.0)**
Renewal			
Government Services Facilities	$132.6	$16.5	($116.1)
Government Services Fleet	$7.0	$6.1	($0.9)
Renewal Total	**$139.6**	**$22.6**	**($117.0)**
Grand Total	**$146.4**	**$24.5**	**($122.0)**

Totals may not sum exactly due to rounding.

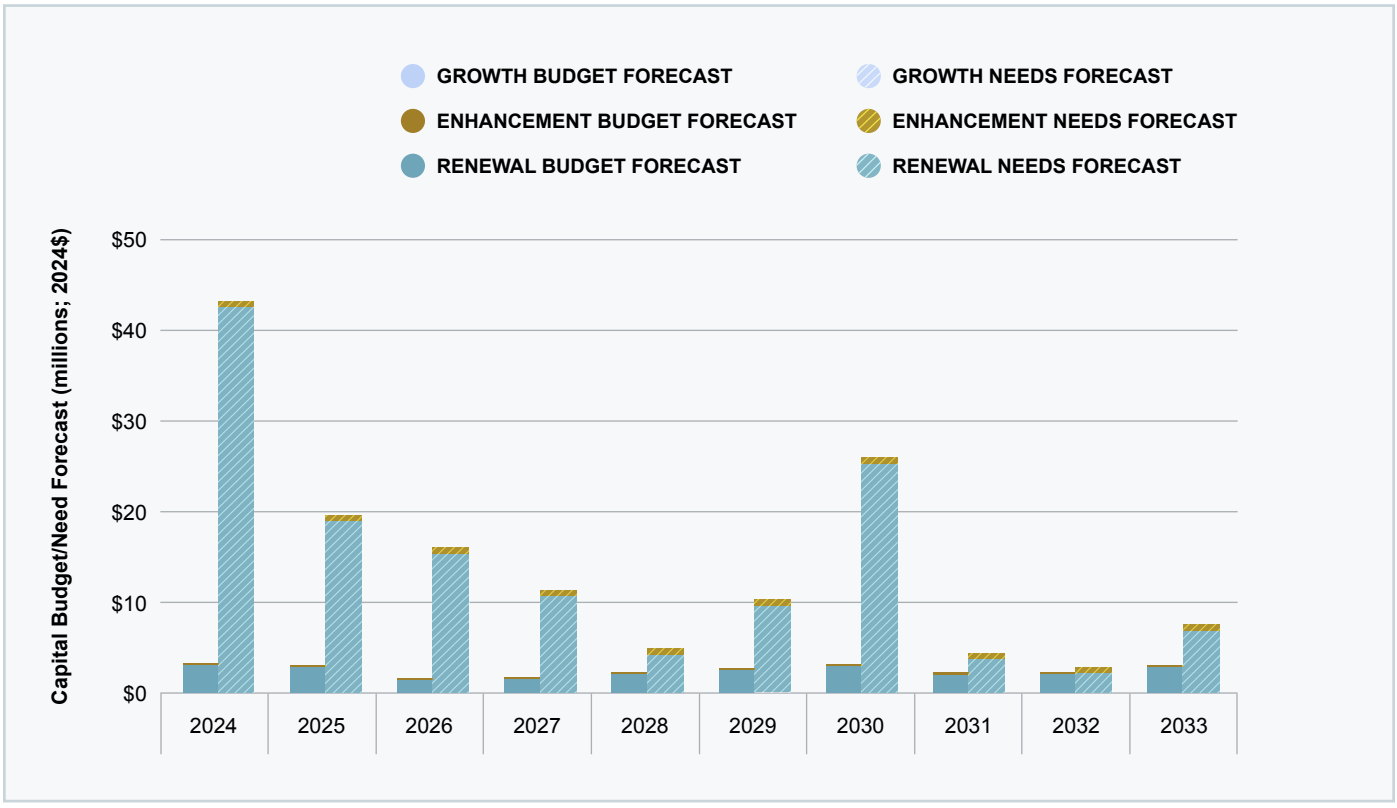
Capital Service Area Gap for Information Technology[12]

Asset Class	10 Year Need (millions; 2024$)	10 Year Funding (millions; 2024$)	10 Year Gap (millions; 2024$)
Growth			
Information Technology Assets	$45.9	$36.7	($9.2)
Growth Total	**$45.9**	**$36.7**	**($9.2)**
Enhancement			
Information Technology Assets	Indeterminate[13]	$55.0	Indeterminate
Enhancement Total	**Indeterminate**	**$55.0**	**Indeterminate**
Renewal			
Information Technology Assets	$107.5[14]	$49.9	($57.6)
Renewal Total	**$107.5**	**$49.9**	**($57.6)**
Renewal - Other			
Information Technology Assets	$49.9	$49.9	$0
Renewal - Other Total	**$49.9**	**$49.9**	**$0**
Grand Total	**Indeterminate**	**$191.6**	**Indeterminate**

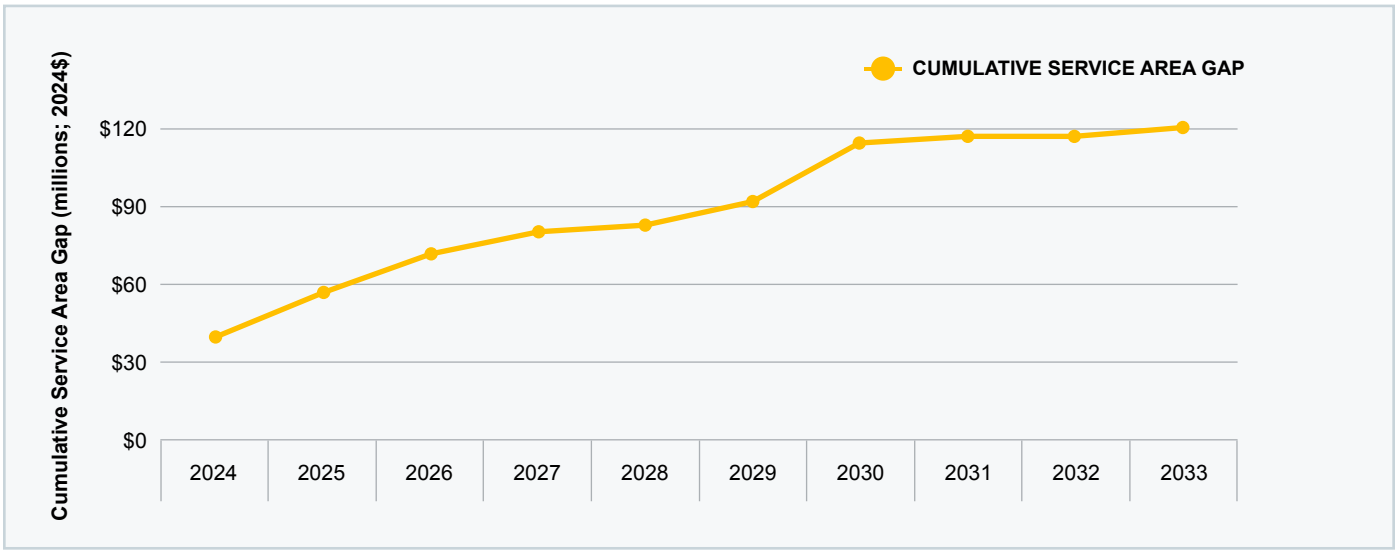
Totals may not sum exactly due to rounding.

12: Some IT assets are not captured in the Asset Management Plan; the values shown include only needs and funding for assets captured in the Asset Management Plan.
13: Enhancement needs for IT assets are indeterminate due to the inability to predict shifts in corporate priority, term of council priorities, audit response, and other strategy priorities or disruptions.
14: Information Technology renewal needs are reported in 2023 dollars.

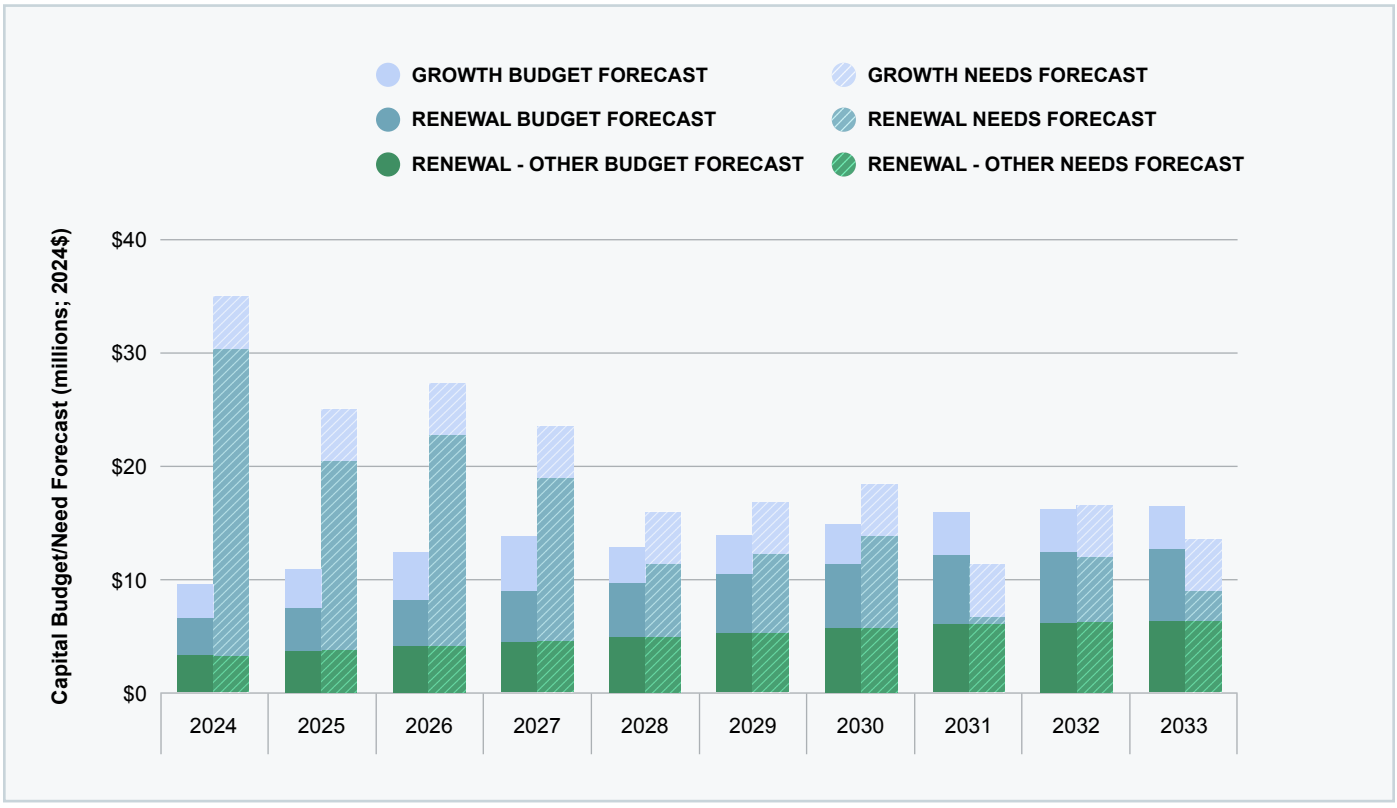
Capital Budget and Capital Needs Forecast for Government Services



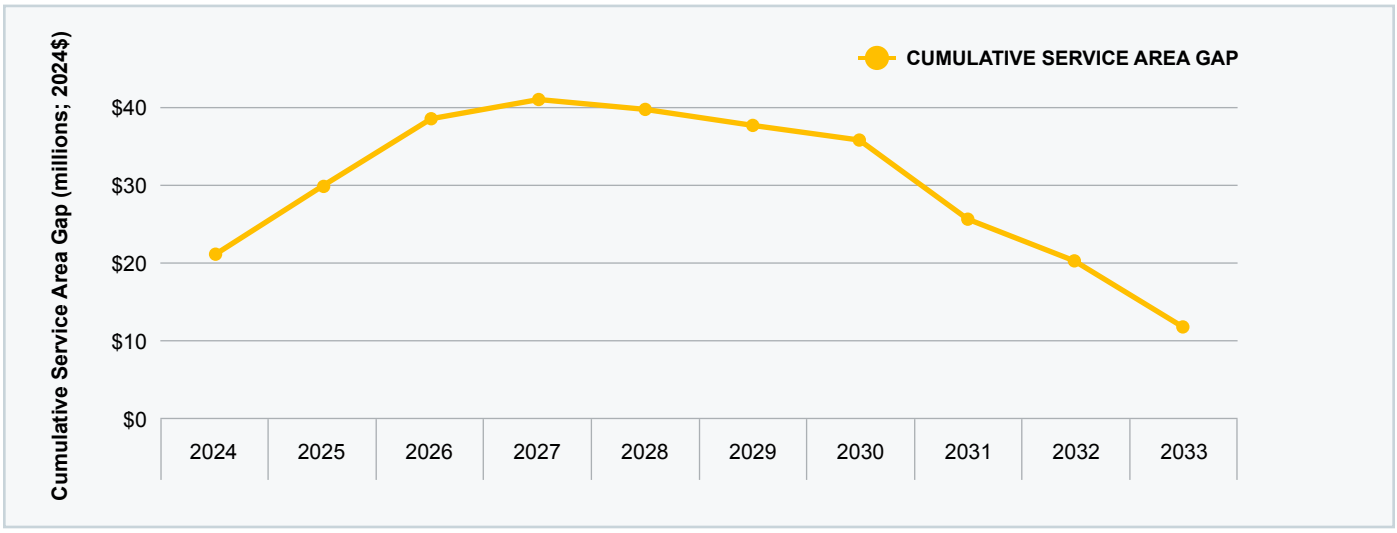
Cumulative Capital Service Area Gap for Government Services



Capital Budget and Capital Needs Forecast for Information Technology[15,16]



Cumulative Capital Service Area Gap for Information Technology[15]



15: Some IT assets are not captured in the Asset Management Plan; the values shown include only needs and funding for assets captured in the Asset Management Plan.
16: The forecast budget for enhancements is excluded from the graph because the associated enhancement needs are indeterminate.

The above capital service area gap does not include the estimated additional future costs due to climate change outlined in Section 4.2. The City has planned dedicated funding over the next 10 years to support climate change needs through the Climate Change Master Plan and annual GHG and Emissions program. The funding supports not only government services and IT, but all other services provided by the City. The climate change capital funding needs identified for the various City services and the total planned capital funding for climate change initiatives are summarized in the table below. These are preliminary estimates that are being refined and prioritized through various initiatives, but they give a sense of the order-of-magnitude of future planned budget and potential needs. These estimates do not include infrastructure repair or replacement costs for extreme weather events such as tornadoes, riverine flooding or ice storms. The analysis does not capture funding from external sources such as other levels of government. Capital funding will need to be integrated across departmental budgets.

The analysis is based on the City's 2024 ten-year capital budget forecast. It is important to note that the 2024 funding forecast shown is $155 million higher than the final approved 2025 budget forecast, which allocates $91.2 million over 10 years (versus $246.4 million as shown in the table).

Estimated Future Climate Change Capital Budgets and Capital Needs for All City Services[17]

	10 Year Need (millions; 2024$)	10 Year Funding (millions; 2024$)	10 Year Gap (millions; 2024$)
Climate Change	$1,700	$246.4	($1,453.6)

6.2 EXPECTED AND TARGET LEVELS OF SERVICE

For levels of service, the City has established performance targets as well as anticipated performance. These metrics can be compared to assess the alignment between expected and target performance. The table below includes:

- Current performance, showing the service levels being provided by the City based on the latest available information.
- Arrows to show whether the measure is expected to trend upward, downward, or remain relatively stable, with colours to show whether that trend is positive (green) or negative (red) relative to the target level of service.
- Expected performance, showing the service levels expected to be achieved based on the City's planned budget.
- Target performance, showing the City's target level of service based on Council direction, City policy, strategy or master plan, or other reference.

17: The estimates exclude Solid Waste and Transit services because all financial analysis for these services is captured in the respective Long Range Financial Plan.

Expected and Target Levels of Service for Government Services and IT

Service Attribute	Community Level of Service	Technical Level of Service	Current Performance (2023)	Trend (2024 2033)	Expected Performance (2033)	Target Performance (2033)	Source for Target
Function	Reduce emissions associated with the City's operations and facilities	Annual GHG emissions from Government Services buildings per thousand square feet (tonnes CO_2e)	2.5 t/1,000 sq. ft.	↓ Negative downward trend[18]	Decrease[18]	1.6 t/1,000 sq. ft.	Climate Change Master Plan
		Annual GHG emissions from Government Services fleet (tonnes CO_2e)	895 t	Refer to Green Fleet Strategy		Refer to Green Fleet Strategy	
	Increase resiliency to extreme weather and changing climate conditions	Percent of facilities with backup power for critical building systems	33%	↑ Positive upward trend	Increase	No set target	
		Percent of critical facilities with a completed climate risk assessment	0%	Expected performance not available		No set target	
	Provide accessible facilities	Percent of facilities with accessibility audit completed	0%	↑ Positive upward trend	Approximately 20 accessibility audits per year across all services	No set target	
Reliability	Maintain assets in a state of good repair	Number of computer incident responses to hardware events	0	↑ Negative upward trend	Increase	As few as possible	IT Services staff
		Number of major internet outages	1	↑ Negative upward trend	Increase	As few as possible	IT Services staff
		Percent of IT equipment assets in fair or better condition	52%	↑ Positive upward trend	10-year average 79%	83%	Lifecycle modelling
		Percent of fleet assets in fair or better condition	15%	↑ Positive upward trend	64%	69%	Lifecycle modelling
		Facility Condition Index	0.072	↑ Negative upward trend	0.24	0.012	Lifecycle modelling
Affordability	Provide sustainable and affordable services over the long-term	Asset Renewal Funding Ratio for IT equipment	18.8%	Not applicable		21.7%	Lifecycle modelling
		Asset Renewal Funding Ratio for Government Services Facilities	0.6%	Not applicable		4.5%	Lifecycle modelling
		Asset Renewal Funding Ratio for Government Services Fleet	2.2%	Not applicable		2.5%	Lifecycle modelling

↑ Positive upward trend	↑ Negative upward trend	↓ Positive downward trend	↓ Negative downward trend	→ Positive stable trend	→ Negative stable trend

18: Emissions are expected to trend downward, however planned funding levels are not expected to be sufficient to reach 2030 and 2040 GHG emissions reduction targets.

6.3 RISK MANAGEMENT

The City applies a risk-based approach to prioritizing asset renewals. The risk assessment frameworks and methods vary across the different types of assets but are generally based on the importance of each asset in terms of service delivery/continuity and the number of users who could be impacted.

Ontario Regulation 588/17 requires an analysis of the risks associated with the proposed levels of service and implementation of the Asset Management Plan. These key risks and how the City mitigates the most critical risks are summarized in the tables below.

Key Risks and Risk Mitigation for Levels of Service

Risk Area[19]	Potential Impacts	City Response
Funding for Growth	Underfunding may reduce ability to build new infrastructure to support growth in a timely fashion. This could put increased demand on existing infrastructure, reduced redundancy, higher reactive repair costs, and delayed development.	The City regularly updates the master plans and Development Charges By-law that address growth funding needs. Increased growth needs can be incorporated into these updates, and into future updates of the Asset Management Plan.
Lifecycle Renewal Funding	Delays in renewal activities could impact service reliability and increase long-term costs (including operations and maintenance costs).	The City prioritizes capital projects by assessing the condition of infrastructure assets, using a risk-based approach to evaluate the potential impact on service levels, and coordinating with other projects to minimize disruptions. This structured approach prioritizes critical assets and within affordability constraints.
Operations & Maintenance Funding	Underfunding may reduce service reliability and increase emergency repairs.	Operating budget allocations are optimized such that funds are directed towards essential operations, emphasize preventive measures to maintain service levels, and consider public feedback to align with community needs and within affordability constraints.

19: As per section 6 of Ontario Regulation 588/17: the Asset Management Plan shall identify the risks associated with the options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service as well as the risks associated with those options to the long term sustainability of the municipality.

Risk Area	Potential Impacts	City Response
Climate Change Mitigation & Resilience	Deferral of climate-related initiatives may hinder adaptation, result in service disruptions, increase long-term costs, and put pressure on existing budgets, and risk missing emission reduction targets.	The Climate Change Master Plan (CCMP) and its supporting strategies provide direction for prioritizing climate investments in both mitigation and adaptation. The CCMP also identifies the need to apply a climate lens to asset management and capital projects, including through departmental capital planning and prioritization processes. Implementation of the CCMP and its supporting plans is a shared responsibility across all departments. The response to the 2024 CCMP audit will provide further direction on priorities.
Rising Asset Replacement Costs	Higher costs may lead to project delays and increased financial pressure. Less projects could be completed with the same amount of money.	The City uses comprehensive asset management, emphasizing preventive maintenance, and prioritizes investments based on risk and within affordability constraints. It also conducts long-term financial planning and explores innovative solutions to reduce costs and enhance service delivery.
Fleet Maintenance & Electrification	Higher maintenance costs or insufficient electrical infrastructure could affect fleet reliability and emergency response.	The Green Fleet Strategy recommends an approach that ensures the City has adequate infrastructure in place as it moves forward with vehicle electrification. The strategy recommends proactively developing energy supply and refueling infrastructure ahead of electrification as well as initiating building-level upgrades and civil infrastructure upgrades prior to the purchase of electric vehicles.

Risk Area	Potential Impacts	City Response
Extreme Weather Impacts	More frequent events may damage assets, disrupt services, and increase maintenance needs.	Climate Ready Ottawa – the City's draft climate resiliency strategy – is a long-term strategy and implementation plan that will guide City-wide action and investment to prepare for a much warmer, wetter and unpredictable climate. It includes conducting climate risk assessments for critical infrastructure to prioritize investments and actions. Insurance and City reserves are also available for unplanned costs due to extreme weather.
Operational Pressures from Climate Change	Increased demands on staff and resources may affect other service delivery or increase costs.	Climate Ready Ottawa considers future increased operating budget needs due to climate change by guiding long-term action and investment to ensure the city's resilience by 2050. Implementation of priority Energy Evolution projects may result in increases or decreases to operating budgets. Changes to operating budget pressures are considered annually as part of the budget process for specific projects and programs.
Non-Urgent Regulatory & Equity Needs	Delays may impact inclusivity, accessibility, and workplace suitability. Workforce pressures may impact staff retention and morale, which can affect continuity and capacity for emergency response.	The City strives to ensure that critical needs are met and within affordability constraints by prioritizing essential needs and services, seeking grants and partnerships, improving efficiency, engaging with the community, and conducting long-term financial planning. Accessibility and equity upgrades will be prioritized based on identified needs and risks.

Key Risks and Risk Mitigation for Asset Management Plan Implementation

Key Risks to Asset Management Plan Implementation	Response
Population forecasts may change.	Changes to population forecasts will impact the growth needs forecasts, which will be reviewed and updated at least every 5 years as part of the Asset Management Plan update. Key issues can be identified as part of the annual review of the City's progress in implementing the asset management plan and in the "Asset Management Implications" section of individual reports to Council.
Future approved budgets may vary from the planned budgets assumed in the Asset Management Plan financial analysis.	The Asset Management Plan will be updated at least every 5 years, including an updated budget analysis. This will allow for a reassessment of future needs, expected levels of service, and risk. Key impacts due to budget changes can be addressed in the annual review of the City's progress in implementing the asset management plan and in the "Asset Management Implications" section of individual reports to Council.
Council may take on more assets than planned in the Asset Management Plan.	Additional assets will most impact the operations and renewal forecast. Key impacts can be addressed annually as part of the review of the City's progress in implementing the Asset Management Plan and in the "Asset Management Implications" section of individual reports to Council.
Council or changes in legislation/regulation may mandate higher/different target service levels.	Higher or different proposed service levels will impact spending needs which could result in a need to consider alternative approaches to service delivery, increases in revenue to support increased service levels, or a shifting of funding that re-prioritizes service levels and possibly increases risk in other areas. This will be reviewed and updated at least every 5 years as part of the Asset Management Plan update. As indicated above, key impacts can be addressed annually as part of the review of the City's progress in implementing the Asset Management Plan and in the "Asset Management Implications" section of individual reports to Council.

Key Risks to Asset Management Plan Implementation	Response
Changes in asset or financial data, which may affect the findings presented in the Asset Management Plan.	Changes in the data used to produce the Asset Management Plan will be reflected in the Asset Management Plan update at least every 5 years. As indicated above, key impacts can be addressed annually as part of the review of the City's progress in implementing the asset management plan and in the "Asset Management Implications" section of individual reports to Council.

6.4 NON-FINANCIAL STRATEGIES

Given that planned budgets are not expected to be sufficient to fully fund all forecasted asset lifecycle needs, alternative methods must be employed to mitigate the risks associated with underfunding. A variety of non-financial strategies exist or can be implemented to address this issue, including:

- Mitigating risks of security breaches and delays in essential services by reducing hardware vendor reliance, moving from hardware procurement to renting/leasing models and training existing staff to reduce reliance on third party consultants.
- Monitoring facility condition through continued building inspection and implementing the facility retirement rationalization policy.
- Improving building standards to reduce future GHG emissions.
- Generate additional sources of revenue, such as pursuing energy service and partnership agreements.
- Initiatives from the Fleet Service Review.

Any new strategies may have impacts on residents and services and should be subject to further study prior to being pursued.

Improvement Plan

The regulation requires that the Asset Management Plan demonstrate the municipality's approach to continuous improvement and adoption of appropriate practices regarding asset management planning. Based on the snapshot of current conditions and existing plans presented in this Asset Management Plan, areas of potential improvement include:

- Continue to address data gaps, data management, and record keeping
- Update cost estimates
- Review, track and report levels of service
- Improve and expand needs forecasts, financial forecasts and funding analysis
- Continue populating expected level of service projections
- Further integrate climate change mitigation and adaptation
- Expand the application of an equity and inclusion lens

The Asset Management Plan will be reviewed and updated on a regular basis and over time these improvements will be reflected in future versions of the Plan.

MORE INFORMATION

For more information about the Asset Management Plan, and the background information and reports upon which it is based, please visit ottawa.ca or contact the City of Ottawa Asset Management Service.