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MAY 2025

VERSION 2.0

Solid Waste Services
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 Solid Waste Services 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*. Specifically, it aligns with the strategic objectives to:

- Increase waste reduction and diversion.
- 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 Solid Waste Services Asset Management Plan includes assets that support the development, management, and environmentally sound operation of the residential solid waste management system.

Solid Waste Services Asset Classes and Types

Solid Waste Landfill Systems	
• Cover Systems	• Landfill Gas System
• GPS Equipment	• Leachate Systems
• Groundwater Monitoring Wells	• Stormwater Facilities

Solid Waste Landfill
• Landfill Airspace

Solid Waste Facilities	
• Administration Building	• Small Loads Facility
• Scale House and Front Entrance	

Solid Waste Fleet	
• Landfill Vehicles	• Waste Collection Vehicles
• Operational Support Vehicles	

Solid Waste Public Spaces Assets
• On-Street Garbage and Recycling Bins

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 Solid Waste Services assets is approximately $519 million as summarized in the table below.

Solid Waste Services Asset Inventory and Replacement Cost

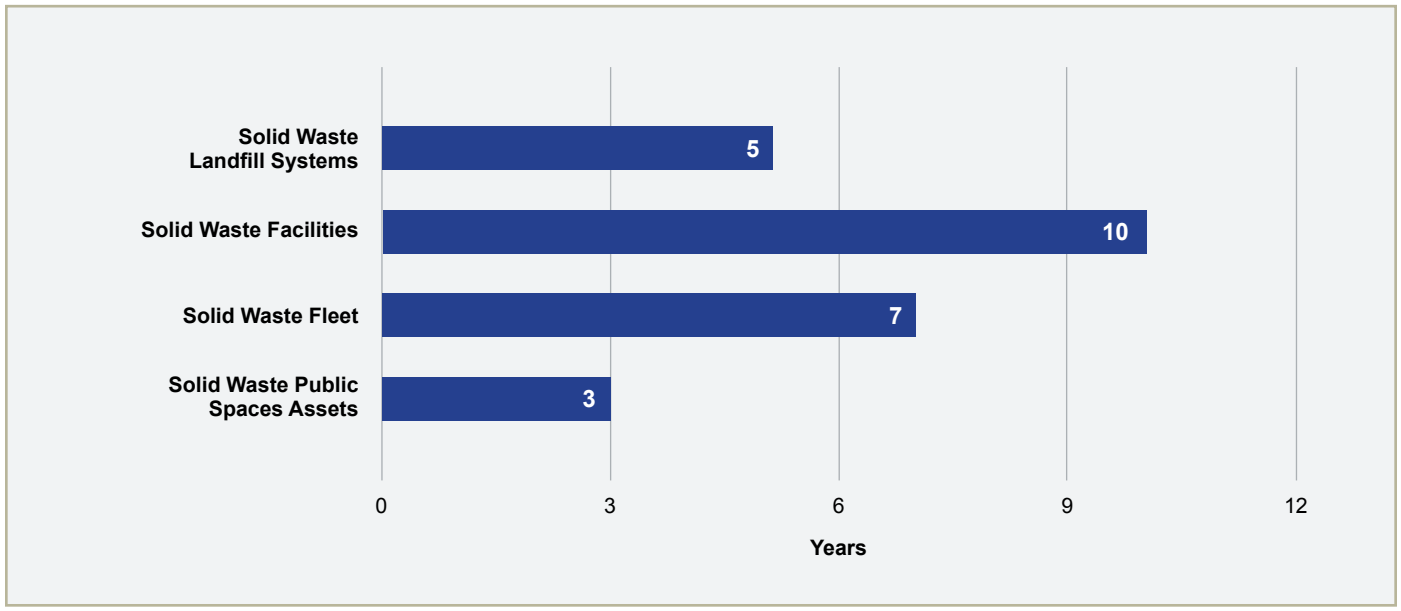
Asset Class	Inventory	Replacement Cost (millions; 2023$)
Solid Waste Landfill Systems	61 ha 234	$95
Solid Waste Landfill[1]	Used: 13,511,917 m^3 of total Available: 16,998,442 m^3	$368[2]
Solid Waste Facilities	5	$15
Solid Waste Fleet	118	$38
Solid Waste Public Spaces Assets	584	$2

1: Based on Trail Waste Facility Landfill 2022 Annual Monitoring Report.
2: Based on Trail Waste Facility – Deferred Closure Evaluation Assumption (December 23, 2022).

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 Solid Waste Services assets is shown in the figure below.

Average Age of Solid Waste Services Assets[3]



3: Age is not reported for the Solid Waste Landfill because volume used versus volume available (as reported in the previous table) provides a better illustration of remaining useful life.

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 Solid Waste Services Assets

Asset Class/Type	Condition Data Collection Technique	Frequency
Cover Systems	Inspection	Monthly
GPS Equipment	Inspection	Annually
Groundwater Monitoring Wells	Third-party assessment	Quarterly
Landfill Gas System	Third-party assessment	Annually
Leachate Systems	Third-party assessment	Annually
Stormwater Facilities	Inspection	Monthly
Solid Waste Landfill	N/A	N/A
Administration Building	Building Condition Audit	10 years
Scale House and Front Entrance	Age-based	Annually
Small Loads Facility	Inspections	Annually
Solid Waste Fleet	Inspection and maintenance	6 months and original equipment manufacturer maintenance schedule
Solid Waste Public Spaces Assets	Visual inspection	Varies

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 Solid Waste Services Asset Condition

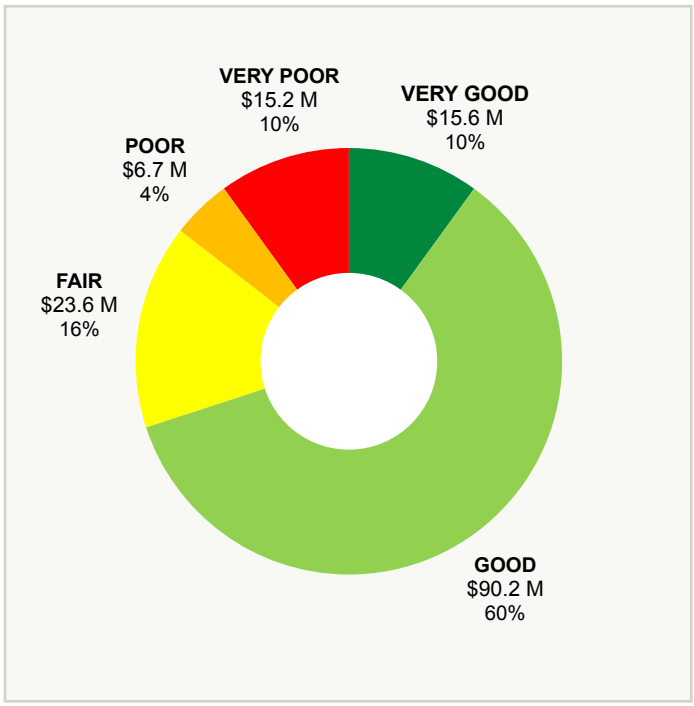
Rating	Rating Description	Subject Matter Expert Opinion	Life Consumed	Facility Condition Index (FCI)[4]	Life Remaining
		(Cover Systems, Groundwater Monitoring Wells, Landfill Gas System, Leachate Systems, Stormwater Facilities, Small Loads Facility, On-Street Garbage and Recycling Bins)	(GPS Equipment, Scale House and Front Entrance)	(Administration Building)	(Solid Waste Fleet)
Very Good	**Sound Physical Condition** No short-term failure risk and no work required	Subject Matter Expert Opinion	< 25%	< 0.02	> 75%
Good	**Adequate for Now** Acceptable, generally in mid stage of expected service life		26% – 50%	0.02 – 0.05	51% – 75%
Fair	**Requires Attention** Signs of deterioration, requires attention, some elements exhibit deficiencies		51% – 75%	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		76% – 100%	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		> 100%	> 0.30	<0% (outside of lifecycle)

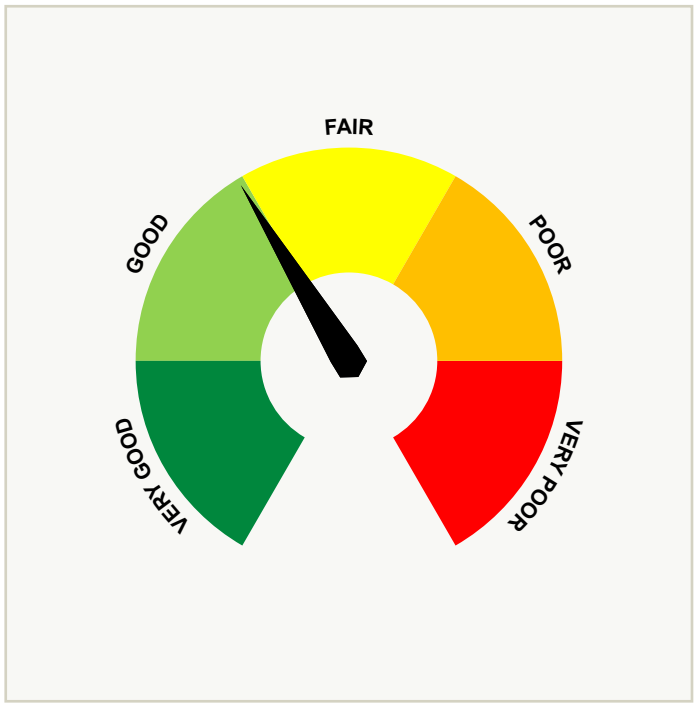
4: Where FCI = 0, or no deferred maintenance is reported, or required maintenance is reported but has not yet been deferred, condition is reported based on typical useful life consumed as follows:

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 Solid Waste Services 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.

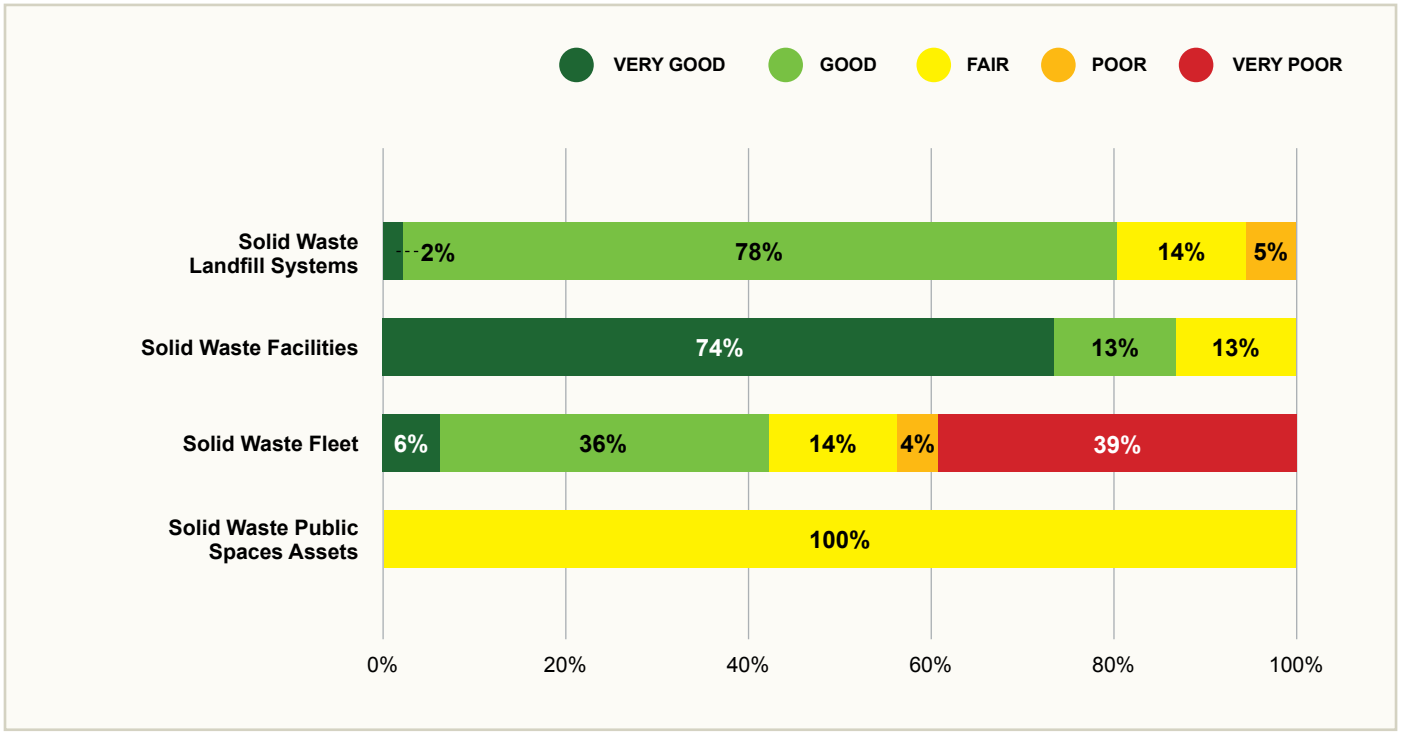
Overall Condition Profile of Solid Waste Services Assets[5]





5: Condition reporting excludes Solid Waste Landfill as condition is not applicable to this asset type.

Condition Profile of Solid Waste Services Assets[5]



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 Solid Waste Services 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 Solid Waste Services assets should be managed in a way that:

- Reduces waste generation.
- Increases the diversion rate.
- Reduces emissions associated with the City's operations and facilities.
- Increases resiliency to extreme weather and changing climate conditions.
- 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 Solid Waste Services 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.

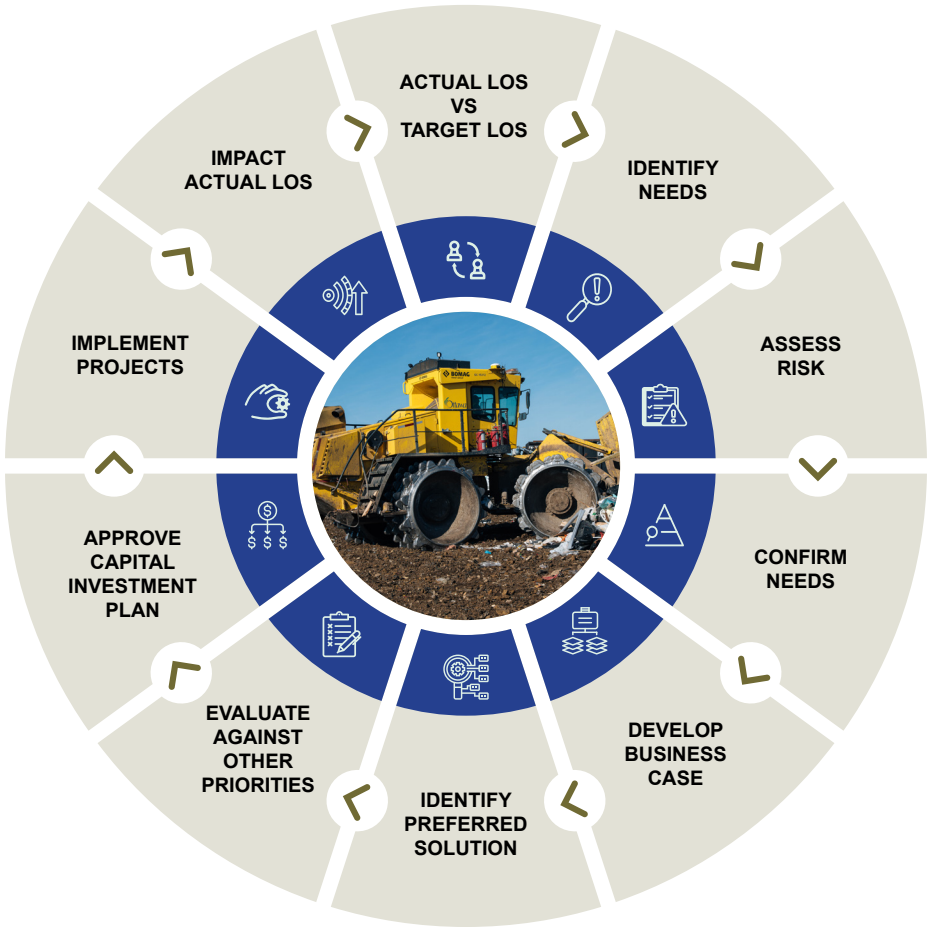
Levels of Service for Solid Waste Services

Service Attribute	Community Level of Service	Technical Level of Service	Current Performance (2023)
Capacity and use	Reduce waste generation	Total residential waste landfilled (kg/capita)	181 kg
	Increase the diversion rate	Total food waste capture rate (%)	41%
Function	Reduce emissions associated with the City's operations and facilities	Annual landfill GHG emissions (kilotonnes CO_2e)	76.9 kt
		Annual GHG emissions from Solid Waste fleet (tonnes CO_2e)	4,931 t
	Increase resiliency to extreme weather and changing climate conditions	Percent of facilities with backup power for critical building systems	100%
Reliability	Maintain assets in a state of good repair	Percent of Solid Waste Landfill Systems assets in fair or better condition	94%
		Percent of Solid Waste Facilities in fair or better condition	100%
		Percent of Solid Waste Fleet in fair or better condition	56%
		Percent of Solid Waste Public Spaces Assets in fair or better condition	100%
Affordability	Provide sustainable and affordable services over the long-term	Asset renewal funding ratio (renewal funding as a share of replacement cost) for Solid Waste Facilities	10.0%
		Asset renewal funding ratio (renewal funding as a share of replacement cost) for Solid Waste Fleet	2.1%

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 Solid Waste Services 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:

- Renewal needs for fleet assets based on lifecycle forecasting, required to maintain assets in a state of good repair.
- Growth, enhancement, regulatory and renewal needs for all other assets based on the Solid Waste Long Range Financial Plan (June 2024) and input from Finance Services.

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, regulatory and renewal needs forecast for Solid Waste Services assets.

Growth, Enhancement, Regulatory and Renewal Forecast for Solid Waste Services

	10 Year Needs (millions; 2024$)				
Asset Class	**Growth**	**Enhancement**	**Regulatory**	**Renewal**	**Total**
Solid Waste Landfill, Landfill Systems, Public Space Assets and Facilities	Included in Regulatory needs	$50.5	$360.0[6]	$49.4	$459.9
Solid Waste Fleet	$4.5	Not applicable	Not applicable	$45.8	$50.3
Total	**$4.5**	**$50.5**	**$360.0**	**$95.2**	**$510.2**

Totals may not sum exactly due to rounding.

6: Included in the regulatory needs are $85 million for expansion of the Trail Waste Facility (Stage 6) and $140 million for a future organics facility.

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 Solid Waste Master Plan outlines actions to reduce greenhouse gas emissions, such as diverting waste from landfill and recovering resources and landfill gas generation, and the costs for these actions are included in the needs reported in the Asset Management Plan.

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 strategy for Solid Waste Services assets is detailed in the Solid Waste Long Range Financial Plan, which outlines the operating requirements and capital investments needed to maintain cost-effective and affordable waste services.

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, provide enhancements and meet regulatory requirements. The planned budget is based on the Solid Waste Long Range Financial Plan and the City's 2024 10-year capital budget forecast for fleet renewal.

Budget Forecast for Solid Waste Services

Component	Budget Forecast (millions; 2024$)										
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Operating Budget[7]	$114.8	$127.3	$118.9	$131.5	$138.0	$142.9	$154.3	$154.8	$160.3	$172.0	**$1,414.8**
Capital Budget – Growth	$0.0	$4.0	$0.3	$0.05	$0.0	$0.1	$0.05	$0.2	$0.0	$0.0	**$4.5**
Capital Budget – Enhancement	$5.2	$3.7	$5.0	$3.1	$4.5	$4.3	$3.0	$1.5	$1.4	$19.0	**$50.5**
Capital Budget – Regulatory	$30.0	$12.1	$62.7	$6.0	$5.3	$14.3	$138.3	$3.9	$84.6	$3.0	**$360.0**
Capital Budget – Renewal	$2.3	$2.8	$3.2	$31.3	$5.9	$2.2	$3.8	$3.7	$1.3	$1.1	**$57.6**

Totals may not sum exactly due to rounding.

7: Values shown are net operating budget requirement after expenditure recoveries.

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 planned budget for Solid Waste Services is assumed to be equal to the forecasted needs (based on the approved Solid Waste Long Range Financial Plan), except for fleet assets, for which the renewal needs exceed 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.

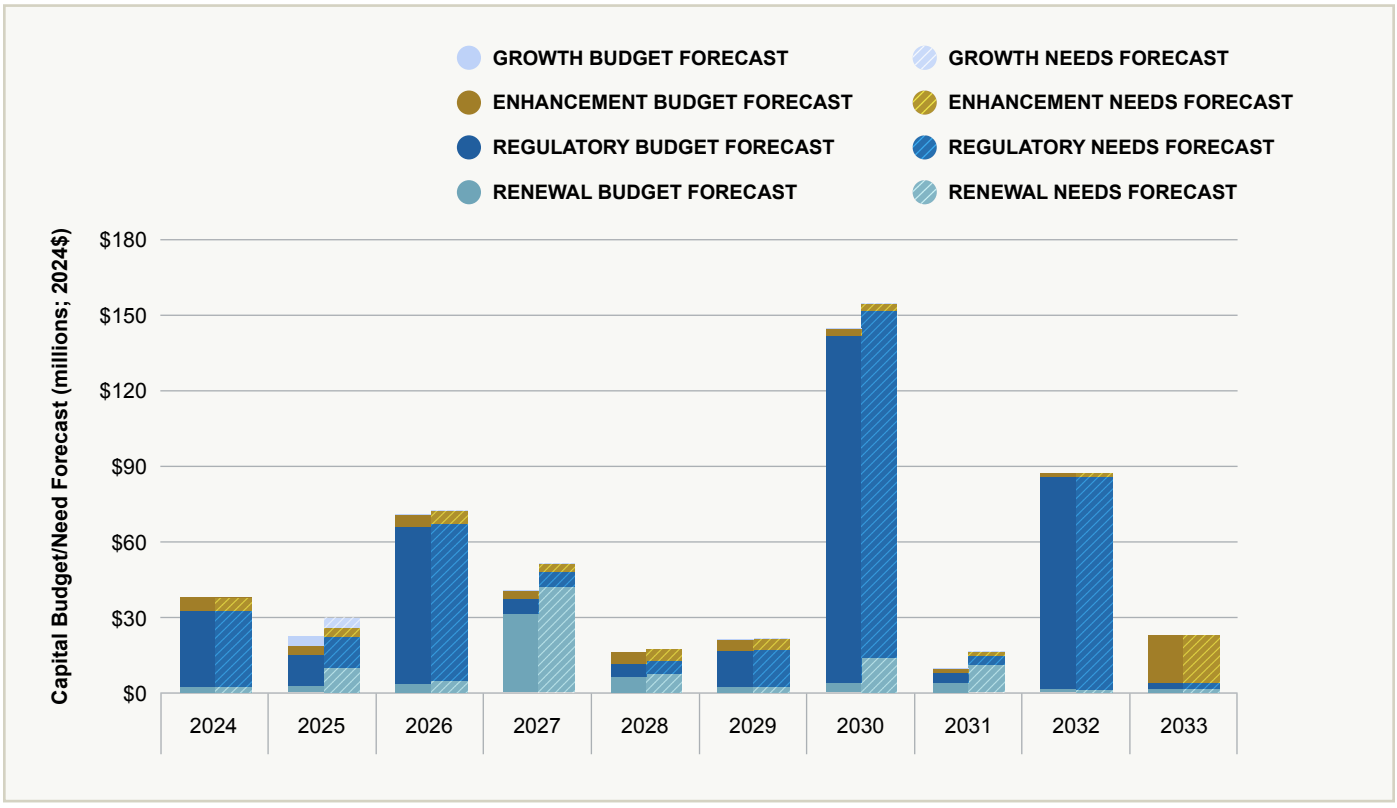
Capital Service Area Gap for Solid Waste Services

Asset Class	10 Year Need (millions; 2024$)	10 Year Funding (millions; 2024$)	10 Year Gap (millions; 2024$)
Growth			
Solid Waste Landfill Systems, Public Space Assets and Facilities	Included in Regulatory needs	Not applicable	-
Solid Waste Fleet	$4.5	$4.5	$0
Growth Total	**$4.5**	**$4.5**	**$0**
Enhancement			
Solid Waste Landfill Systems, Public Space Assets and Facilities	$50.5	$50.5	$0
Solid Waste Fleet	Not applicable		
Enhancement Total	**$50.5**	**$50.5**	**$0**
Regulatory			
Solid Waste Landfill Systems, Public Space Assets and Facilities	$360.0	$360.0	$0
Solid Waste Fleet[8]	Not applicable		
Regulatory Total	**$360.0**	**$360.0**	**$0**
Renewal			
Solid Waste Landfill Systems, Public Space Assets and Facilities	$49.4	$49.4	$0
Solid Waste Fleet	$45.8	$8.2	($37.6)
Renewal Total	**$95.2**	**$57.6**	**($37.6)**
Grand Total	**$510.3**	**$472.7**	**($37.6)**

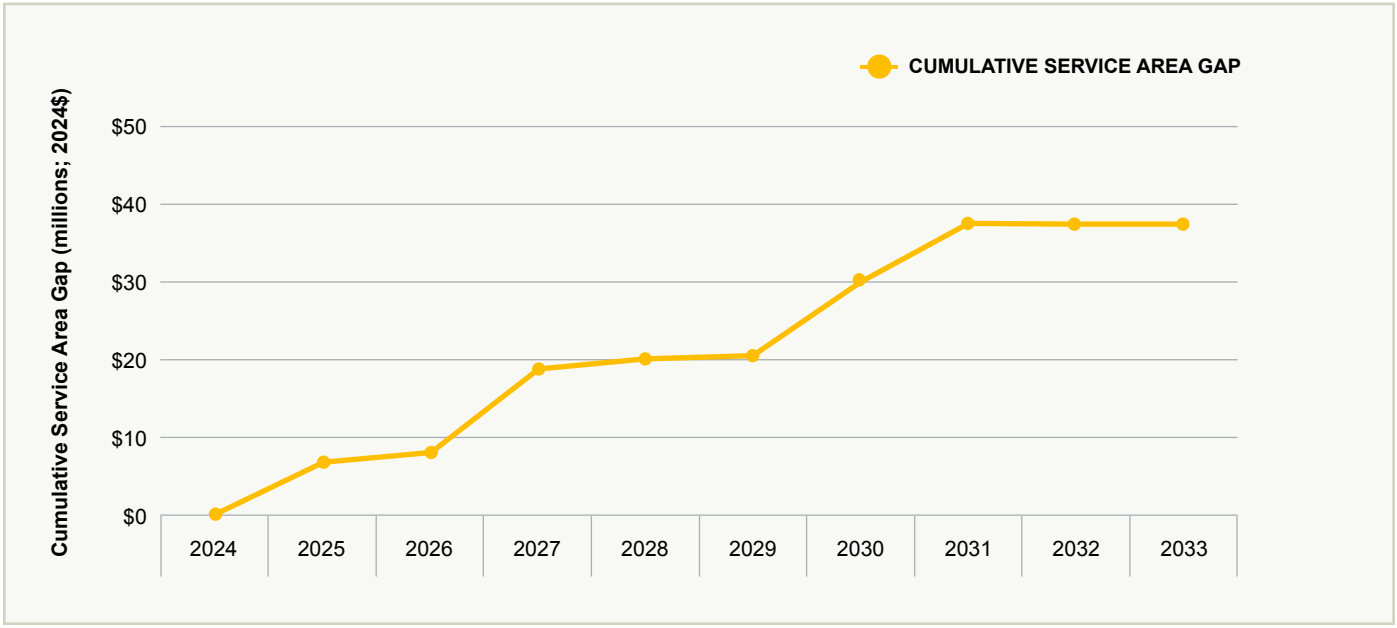
Totals may not sum exactly due to rounding.

8: There will be a change in 2026 to the number of vehicles required for the delivery of Solid Waste Services. It is anticipated that the total number of vehicles will be less, resulting in a reduction in the 10-year gap identified for fleet renewal.

Capital Budget and Capital Needs Forecast for Solid Waste Services



Cumulative Capital Service Area Gap for Solid Waste Services



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.

Expected and Target Levels of Service for Solid Waste Services

Service Attribute	Community Level of Service	Technical Level of Service	Current Performance (2023)	Trend (2024 2033)	Expected Performance (2033)[9]	Target Performance (2033)	Source for Target
Capacity and use	Reduce waste generation	Total residential waste landfilled (kg/capita)	181 kg	↓	139 kg (in 2034)	139 kg (by 2034)	Solid Waste Master Plan
	Increase the diversion rate	Total food waste capture rate (%)	41%	↑	61% (in 2023)	61% (by 2034)	Solid Waste Master Plan
Function	Reduce emissions associated with the City's operations and facilities	Annual landfill GHG emissions (kilotonnes CO_2e)	76.9 kt	Refer to Solid Waste Master Plan		To be determined	
		Annual GHG emissions from Solid Waste fleet (tonnes CO_2e)	4,931 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	100%	→	100%	100%	Solid Waste Services staff
Reliability	Maintain assets in a state of good repair	Percent of Solid Waste Landfill Systems assets in fair or better condition	94%	→	Expected performance not available	As per Solid Waste Master Plan	
		Percent of Solid Waste Facilities in fair or better condition	100%	→	Expected performance not available	As per Solid Waste Master Plan	
		Percent of Solid Waste Fleet in fair or better condition	56%	→	56%	75%	Lifecycle modelling
		Percent of Solid Waste Public Spaces Assets in fair or better condition	100%	→	Expected performance not available	As per Solid Waste Master Plan	
Affordability	Provide sustainable and affordable services over the long-term	Asset renewal funding ratio (renewal funding as a share of replacement cost) for Solid Waste Facilities	10.0%	Not applicable		As per Solid Waste Master Plan	
		Asset renewal funding ratio (renewal funding as a share of replacement cost) for Solid Waste Fleet	2.1%	Not applicable		12.0%	Lifecycle modelling

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

9: Expected performance is based on the targets in the approved Solid Waste Master Plan and Long Range Financial Plan (LRFP), so performance is dependent on the LRFP's recommended rate increases being implemented by Council. Without sufficient funding from the rate increases as outlined in the LRFP, the expected/target performance may not be met (actions/programs won't be able to scale up as quickly as planned, and there may be impacts to the solid waste reserve).

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[10]	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.

10: 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
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.
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.

Risk Area	Potential Impacts	City Response
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.
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.

Risk Area	Potential Impacts	City Response
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

If future approved budgets are not sufficient to fully fund all forecasted asset lifecycle needs, alternative methods may 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:

- Potentially offsetting future capital costs for processing facilities through partnerships with local municipalities and townships.
- Seeking to set up user fees for the non-regulatory areas of work (e.g., parks waste collection associated with special events).
- Reviewing the activities currently undertaken to ensure they are providing value towards City goals (e.g., reviewing communication strategies).
- Outreach and communication and policy changes to support residents making greater use of diversion programs and making other choices for future purchases and disposals. These programs will contribute to extending the life of the City's current landfill.
- Developing businesses cases for services as contracts come up for renewal and exploring more cost-effective options and new revenue generation opportunities (e.g., sale of landfill gas).
- Operational changes such as additional diversion of leaf and yard waste from the organics facility to Barnsdale Road facility where staff are able to process the materials more cost effectively.
- Initiatives identified in 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.