City of Burlington

Asset Management Plan 2025

Forward and Acknowledgements

The City of Burlington (City) owns and manages a wide range of infrastructure assets across multiple services. This infrastructure is directly linked to the economic, social, and environmental advancement of the community. It is necessary to understand the overall health of the City's infrastructure assets and future requirements so that services can be delivered to our residents, businesses and visitors in a way that minimizes risk, is sustainable, and makes financial sense.

The City's Asset Management Plan (AMP) guides the management of the City's many and diverse assets. It describes the portfolio of assets, how the City manages those assets, how well those actions are working, and how much it will cost to maintain those assets to provide City services. By bringing all this information together, strengths and opportunities in the City's processes can be identified and strategies created to improve tomorrow's outcomes.

This plan has been developed in alignment with best practice frameworks and reflects our organization's commitment to delivering cost-effective and sustainable asset services. It details the state of infrastructure of the municipality's service area's current and proposed Levels of Service and provides asset management and financial strategies designed to facilitate its pursuit of developing an advanced asset management program and mitigate long-term funding gaps.

The development of this Asset Management Plan has been made possible through the contributions and collaboration of various individuals and departments.

The Asset Management team would like to thank the City staff for their continued support, input, and collaboration on this initiative.

In addition to the contributions made by staff, the team also thanks **Dillon Consulting Limited** for their assistance in developing an AMP that meets compliance with requirements set out by O. Reg. 588/17.

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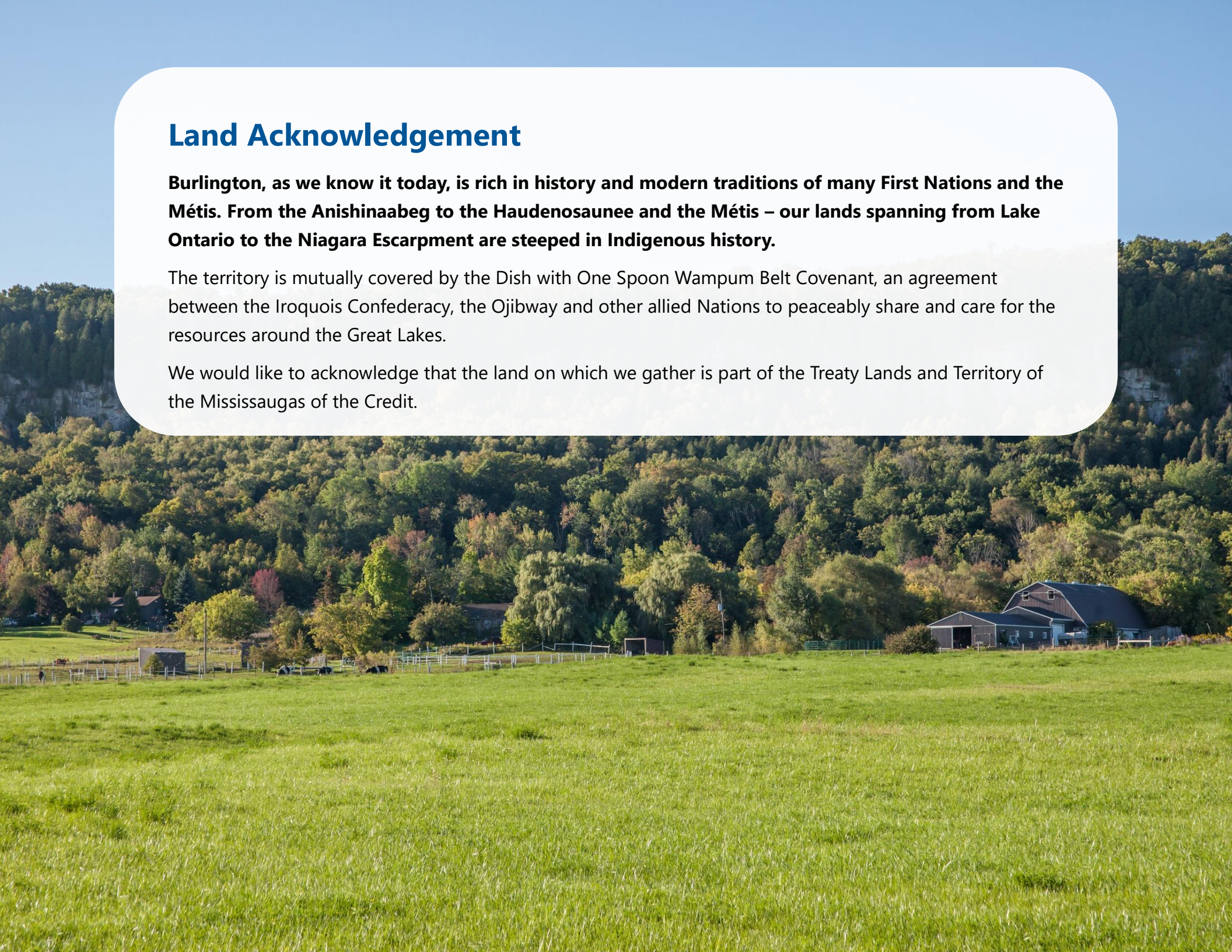
Land Acknowledgement

Burlington, as we know it today, is rich in history and modern traditions of many First Nations and the Métis. From the Anishinaabeg to the Haudenosaunee and the Métis – our lands spanning from Lake Ontario to the Niagara Escarpment are steeped in Indigenous history.

The territory is mutually covered by the Dish with One Spoon Wampum Belt Covenant, an agreement between the Iroquois Confederacy, the Ojibway and other allied Nations to peaceably share and care for the resources around the Great Lakes.

We would like to acknowledge that the land on which we gather is part of the Treaty Lands and Territory of the Mississaugas of the Credit.



List of Acronyms

Acronym	Definition
AM	Asset Management
AMP	Asset Management Plan
ASR	Asset Sustainability Ratio
BCI	Bridge Condition Index
BDS	Burlington Digital Services
CapEx	Capital Expenditure
CCA	Canadian Construction Association
CEEMP	Corporate Energy and Emissions Management Plan
CNAM	Canadian Network of Asset Managers
CoF	Consequence of Failure
CRB	Climate Resilient Burlington
CRV	Capital Replacement Value
CRV	Current Replacement Value
CSCE	Canadian Society for Civil Engineering
DC	Development Charges
DSS	Decision Support System
4DX	4 Disciplines of Execution
EAMS	Enterprise Asset Management Solution
ERP	Enterprise Resource Planning
ESL	Estimated Service Life
EVT	Emergency Vehicle Technicians
FAO	Financial Accountability Office of Ontario
FAS	Facilities Assets and Sustainability
FCI	Facility Condition Index
FCM	Federation of Canadian Municipalities

Acronym	Definition
FMP	Fire Master Plan
FUS	Fire Underwriters Survey
GHG	Green House Gas
GIS	Geographic Information System
GTHA	Greater Toronto and Hamilton Area
IMP	Integrated Mobility Plan
IT	Information Technology
KPI	Key Performance Indicator
LoF	Likelihood of Failure
LOS	Levels of Service
LTFP	Long Term Financial Plan
LPP	Live and Play Plan
MMS	Maintenance Management System
MNAI	Municipal Natural Asset Initiative
MTO	Ministry of Transportation
MTSA	Major Transit Station Area
MYCIP	Multi-Year Community Investment Plan
NDT	Non-Destructive Testing
NFPA	National Fire Protection Association
O & M	Operations and Maintenance
O. Reg. 588/17	Ontario Regulation 588/17
OCIF	Ontario Community Infrastructure Fund
OpEx	Operating Expenditure
OSI	Overall Service Index
OSIM	Ontario Structure Inspection Manual
PQI	Pavement Quality Index
PPMP	Parks Provisioning Master Plan
PM	Preventative Maintenance

Acronym	Definition
RCC	Recreation, Community and Culture
RPF	Roads, Parks and Forestry
RPMS	RoadMatrix Pavement Management System
SOGR	State of Good Repair
TBL	Triple Bottom Line
TCA	Tangible Capital Assets
UFMP	Urban Forest Master Plan
VFA	Vanderweil Facility Advisors
XLT	Executive Leadership Team

Executive Summary

E.1 Overview

The 2025 Asset Management Plan (AMP) outlines the City of Burlington's strategy for managing municipal infrastructure to ensure sustainable service delivery, compliance with Ontario Regulation 588/17, and alignment with the City's Vision 2040 Strategic Plan. With infrastructure that supports essential services such as transportation, transit, stormwater management, recreation, facilities, and emergency response, valued at over **$7.1 billion**, the AMP provides a comprehensive framework for maintaining, renewing, and investing in public assets to meet current and future community needs.

The City's infrastructure, supporting services ranging from roads and transit to community centers and stormwater systems, is described as in **Good** condition overall, but facing significant reinvestment pressures and a projected 71,000-person population increase by 2051.

E.2 Strategic Purpose and Legislative Compliance

The AMP is grounded in Burlington's Strategic Asset Management Policy (2019), aligning asset management with corporate strategies such as Vision 2040 and the 2025 Corporate Compass. These strategic documents prioritize financial sustainability, community resilience, and service optimization.

The asset management principles in the AMP include holistic planning, risk-based decision-making, lifecycle costing, and environmental sustainability. The plan also supports critical municipal processes, including long-term financial planning, the capital budgeting process, and the integration of master plans and climate change strategies.

In addition, the AMP:

- Adheres to the City's **Strategic Asset Management Policy**, which prioritizes holistic, risk-based, and sustainable approaches across asset lifecycles;
- Aligns with Ontario's **Infrastructure for Jobs and Prosperity Act** and **O. Reg. 588/17**;
- Meets the July 1, 2025, compliance deadline for Proposed Levels of Service planning; and
- Supports informed long-term financial and operational decisions through integrated data-driven strategies.

Guided by key principles - transparency, sustainability, resilience, and affordability- the AMP formalizes the role of asset management in achieving Burlington's growth, climate adaptation, and infrastructure quality goals.

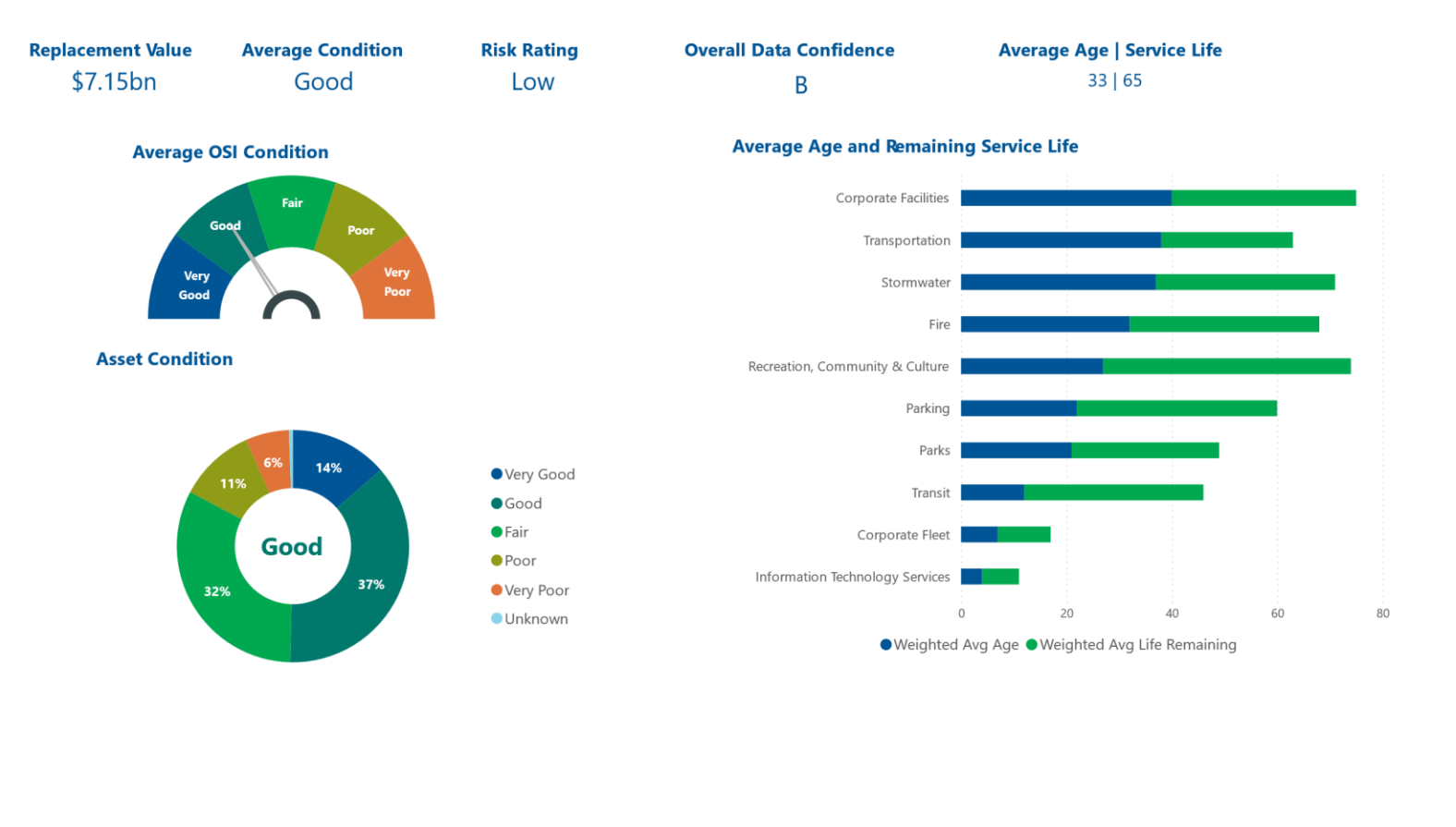
E.3 State of Local Infrastructure

The City manages an asset portfolio comprising **eleven service areas**, including: Transportation; Transit; Stormwater; Fire; Parks; Recreation, Community and Culture; Urban Forestry; Parking; Fleet; Corporate Facilities; and Information Technology. Key findings are presented in **Table E-1** and the overall corporate scorecard in **Figure E-1**.

Table E-1: State of Local Infrastructure - Corporate Highlights

Description	State of Local Infrastructure (2024)
Total Asset Replacement Value	**$7.15 B**
Average Condition	**Good**
Average Asset Age	**33 years**, with an average estimated service life of **65 years**
Overall Data Confidence Rating	**B** (High completeness and accuracy)
Top-valued asset categories (current replacement value)	Transportation: **$2.73 B** Stormwater: **$1.49 B** Recreation, Community and Culture: **$1.15 B**

Figure E-1: State of Local Infrastructure – Overall Corporate Scorecard



Although assets are mostly "mid-life" in terms of age, capital needs will increase as many assets approach end-of-life. The City expects the portfolio to exceed **$9 billion** in value by 2034, driven by inflation and growth - not including new expansion projects.

E.4 Levels of Service (LOS)

In compliance with the regulation, LOS measures were defined using both **Community LOS** and **Technical LOS** indicators across each asset class. The current corporate-wide LOS indicators are presented in **Table E-2**.

Table E-2: Standardized Corporate LOS Metrics - Overall

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate	1.08%
Technical LOS	State of Good Repair (SOGR) Backlog	$454.6 M
Community LOS	% Assets in Poor or Very Poor Condition	17.0%

The City applied the approach of LEAD and LAG indicators, where Technical LOS is the LEAD indicator (where the City has control), and the Community LOS is the LAG indicator (the outcome). These metrics help standardize decision-making, prioritize investments, and communicate service expectations to the community and Council.

E.5 Asset Management Strategies

Lifecycle strategies across the portfolio are based on predictive modelling (via the EAMS-DSS tool), incorporating:

- Non-infrastructure initiatives (e.g., demand management);
- Preventive and corrective maintenance;
- Rehabilitation and renewal; and
- Full replacement and eventual disposal.

Each service area has customized strategies and risk profiles, incorporating climate risk, growth impacts, and long-term affordability. The AMP also aligns with the **Climate Resilient Burlington Plan**, identifying natural assets, flood mitigation, and green infrastructure as future focus areas.

E.6 Public Engagement

To ground LOS targets in community values, the City undertook:

- An **online survey** of 184 residents, provided:
  - Highest satisfaction: **Parks (74%)**; and
  - Priority areas for investment: **Transportation**, **Stormwater**, **Transit.**
- External and internal **focus groups** to explore trade-offs between service expectations and affordability.

Insight from these engagements shaped proposed LOS pathways and future funding strategies.

E.7 Growth and Future Demands

Growth will increase maintenance needs, accelerate wear, and require new service expansions (e.g., new roads, recreation facilities). The AMP forecasts significant pressure on existing assets due to population growth and urban intensification which includes:

- **Population increase:** additional 71,060 by 2051; and
- **Cumulative growth-related asset value: $883 million** (by 2035).

Growth impacts are examined, recognizing that population and employment growth will increase demand on infrastructure and require additional capital and operational funding. The AMP incorporates assumptions from planning documents such as the Official Plan, Development Charges Study, and master plans.

E.8 Financial Strategy and Affordability

The AMP provides a 10-year financial forecast based on lifecycle needs and recommended investment levels. The current financial picture indicates a significant infrastructure funding gap. The AMP assessed multiple investment scenarios using EAMS-DSS to measure asset performance under different reinvestment levels, presented in **Table E-3**.

Table E-3:Reinvestment Scenarios

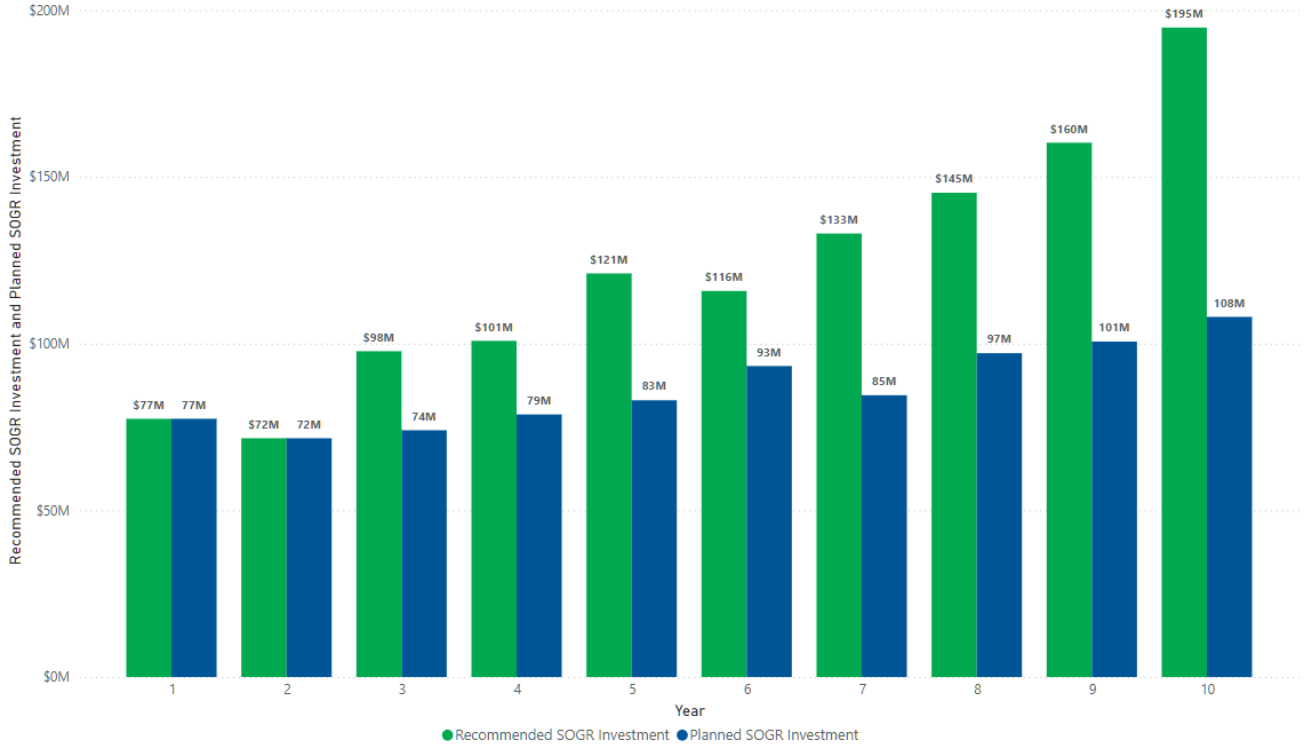
Scenario	10-Year Investment	Reinvestment Rate	Year 10 Condition (% Poor or Very Poor)
Planned SOGR Investment	$868 M	1.22%	21%
Optimized	$1.42 B	1.99%	13%
Stabilize LOS (Recommended)	$1.22 B	1.70%	17%

E.9 Recommended Strategy

The recommended strategy is to Stabilize LOS by ramping up capital spending to 2.72% by Year 10, as presented in **Figure E-2** comparing Recommended SOGR Investment (Stabilize LOS) with the Planned SOGR Investment.

Over the 10-year period, the Recommended SOGR Investment scenario is an additional annual investment of $35 million per year, or $350 million. Strategic funding tools include: Infrastructure Renewal Levy, Development Charges, user fees, reserve funds, provincial/federal grants, and debt (where appropriate).

Figure E-2: 10-Year Forecast (Recommended SOGR Investment compared with Planned SOGR Investment)



The following financial indicators are forecasted for the Recommended SOGR Investment scenario:

- **Total 10-year Investment:** approximately $1.2 billion;
- **Operating Forecast:** approximately $61.8 million annually; and
- **Improved Risk Rating Profile**: a reduction in the percentage of assets in Extreme-, High-, and Moderate-risk, lowering from 50.15% to 44.36% by Year 10, and an increase in the percentage of assets in Low Risk from 49.15% to 55.64% by Year 10.

E.10 Implementation and Continuous Improvement

The City commits to an ongoing plan-do-check-act cycle that includes:

- Annual condition and risk reassessments;
- Evolving lifecycle models as better data becomes available;
- Strategic alignment with capital budgeting and master plans;
- Annual LOS reporting and five-year AMP updates (next: 2028); and
- Continuous integration of climate, housing, and equity goals.

E.11 Conclusion

The 2025 AMP is a critical tool for advancing the City of Burlington's strategic vision and supporting long-term service delivery through sustainable infrastructure management. It enables evidence-based decision-making, optimizes investment, and provides accountability to residents. The plan positions Burlington to responsibly manage nearly **$7.1 billion** in infrastructure assets while navigating and meeting the challenges of aging infrastructure, climate change, community expectations, and population growth, while maintaining fiscal responsibility and service excellence.

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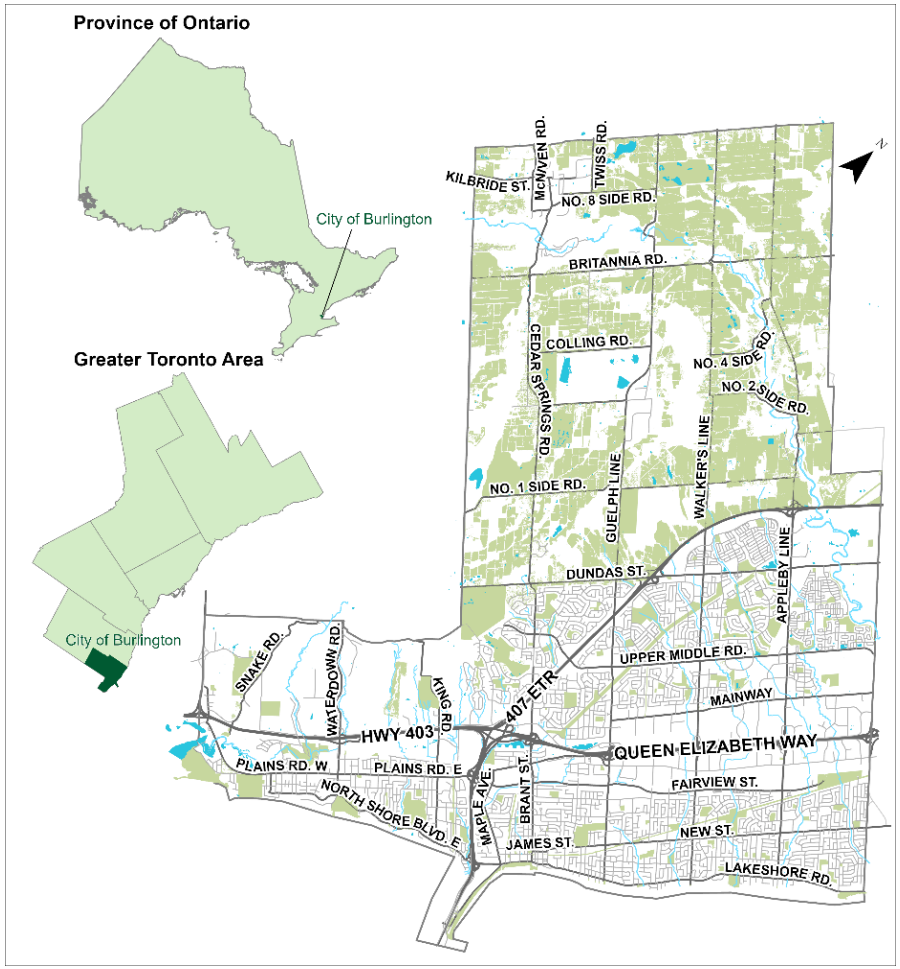
1.0 Introduction

The City of Burlington (City) is situated between Lake Ontario and the Niagara Escarpment, forming part of the Greater Toronto and Hamilton Area (GTHA). The City's strategic location offers residents and businesses access to natural beauty, urban amenities, and major transportation corridors. Burlington is a mid-size, lower-tier municipality within the Regional Municipality of Halton Region with a current 2024 population of 194,100 residents (including census undercount).[1]

The City's population is forecasted to grow to 217,400 by 2034, 240,050 by 2041, and 265,160 by 2051,[2] representing an overall growth of 71,060 persons (37%). See map of the City of Burlington in **Figure 1-1**.

To support both the current population and future growth, the City has infrastructure in place to provide services to the community. This infrastructure supports the basic functions, safety, and quality of life for all residents, businesses, and visitors.

Figure 1-1: Map of the City of Burlington



1 City of Burlington. 2023. Appendix A Development Charges and Community Benefits Strategy Draft Growth Assumptions Report (Staff Report F-25-23). Retrieved from https://burlingtonpublishing.escribemeetings.com.

2 Halton Region Regional Official Plan Amendment No. 49. Retrieved from https://www.halton.ca/

1.1 Overview, Purpose and Scope

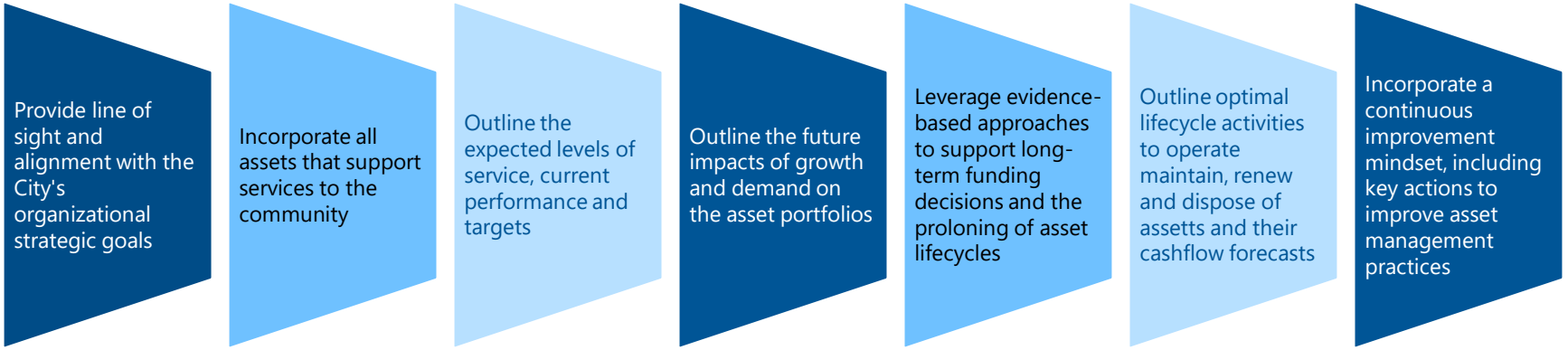
Asset Management is a critical component of organizational sustainability, enabling informed decision-making that aligns with strategic goals, regulatory requirements, and financial constraints. Asset Management Plans are documents developed by the City that specify the activities, resources and timescales required for an individual asset, or grouping of assets, to achieve the defined levels of service objectives. The 2025 Asset Management Plan helps the City make the best possible decisions regarding the construction, operation, maintenance, renewal, replacement, expansion, and disposal of infrastructure assets while minimizing risk and cost to the community and maximizing service delivery.

In addition, the AMP intends to:

- Guide the consistent application of standards, best practices, and tools;
- Support effective service delivery through the sustainable management of the City's infrastructure;
- Align investments with infrastructure priorities to deliver established levels of service in a financially responsible manner;
- Provide input into long-term infrastructure plans and the City's budget;
- Document existing and planned work practices and procedures;
- Support business cases for key infrastructure investments and funding opportunities;
- Develop sustainable financing plans;
- Support discussion on the setting of levels of service targets; and
- Meet legislative requirements.

The plan is based on the guidelines set by the Ontario Ministry of Infrastructure's Building Together Guide for Municipal Asset Management Plans and Ontario Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act. The plan provides an understanding of the infrastructure owned by the City, what it is worth, the condition it is in, the levels of service it is expected to provide, the activities to support that level of service and the funding required. Displayed in **Figure 1-2** are the City's guiding principles for the development of the Asset Management Plan.

Figure 1-2: Guiding Principles for Asset Management Plans



Reporting on asset management for municipalities serves several key purposes:

- **Transparency and Accountability**: It helps local governments provide clear and accurate information to residents, officials, and stakeholders about how public assets (such as roads, parks, and buildings) are maintained and utilized;
- **Financial Planning**: Proper reporting ensures municipalities can budget effectively, allocate resources wisely, and plan for future investments or repairs without financial strain;
- **Regulatory Compliance**: Many municipalities must report on asset management to meet provincial or federal guidelines and funding requirements;
- **Risk Management:** Understanding the condition and lifespan of assets helps prevent unexpected failures and costly emergency repairs;
- **Improved Decision-Making**: Municipal leaders use asset management reports to prioritize projects, make informed policy decisions, and optimize service delivery; and
- **Sustainability and Long-Term Planning**: Asset management reporting ensures infrastructure and services remain viable for future generations by supporting proactive maintenance and upgrades.

The AMP aims to cover all infrastructure assets that support service to the community, as displayed in **Table 1-1.**

The scope of this AMP includes the infrastructure owned and operated by the municipality. This includes specific plans for the infrastructure portfolios that are fundamental to the well-being and livability of the community, including: transportation; stormwater; recreation, community and culture; urban forestry; parks; corporate facilities; transit; fire; parking; information technology; and corporate fleet.

Table 1-1: Asset Hierarchy for the Assets Included in the Asset Management Plan

Service Area	Asset Class	Asset Type
 **Transportation**	Roadways	Pedestrian Network
		Roads
	Structures	Bridges
		Major Road Culverts
		Noise Walls
		Retaining Walls
	Traffic Control and Safety	Guiderails
		Signs
		Streetlights
		Traffic Signals
 **Stormwater**	Stormwater Conveyance	Catch basins, Maintenance Holes and Structures
		Minor Road Culverts
		Storm Sewer Pipes
	Stormwater Management	Minor Treatment
		Open Conveyance
		Stormwater Management Facilities
 **Recreation, Community and Culture**	Community Facilities	Community Centres
		Joint Venture
		Pavilions
		Specialty Facility
		Specialty Facility - Heritage
		Specialty Facility - Revenue Generating
	Culture Facilities	Arts Facilities
		Libraries
		Libraries - leased space

Service Area	Asset Class	Asset Type
		Museums
		Public Art
	Recreation Facilities	Arenas
		Pools
		Specialty Facility
 **Urban Forestry**	Other	Other
	Park and Open Space	Park and Open Space
	Street	Street
	Woodland	Woodland
 **Parks**	Parks Amenities	Community Garden
		Leash Free Areas
		Multi-Use Courts
		Park Signs & Gateways
		Playgrounds & Fitness Equipment
		Shade Structures
		Site Furniture
		Site Provisions
		Skateparks
		Splash Pads
		Sports Fields
		Tennis, Pickleball
		Unique Assets
	Parks Facilities	Boardwalk
		Maintenance Buildings
		Washroom Buildings
	Parks Linear	Fencing

Service Area	Asset Class	Asset Type
		Multi-Use Trails
		Pedestrian Bridges and Piers
		Railings, Retaining Walls and Stairs
		Servicing
		Shoreline Protection
		Sports fields
 **Corporate Facilities**	Administration Buildings	Animal Shelter
		Cemetery Operation
		City Hall
		Greenwood Cemetery
		Office Building
		Operations Centre
 **Transit**	Bus Stops	Concrete
		Shelter
	Transit Equipment	Transit Equipment
	Transit Facilities	Bus Terminal
		Transit Operations
	Transit Vehicle	Conventional Bus
		Specialized Bus
		Support
 **Fire**	Fire Equipment	Fire Equipment
	Fire Vehicle	Fire Vehicle
	Fire Stations and Facilities	Fire Stations and Facilities
	Parking Equipment	Parking Equipment
	Parking Facilities	Parking Garage

Service Area	Asset Class	Asset Type
 **Parking**		Parking Services Building
	Parking Lots	Corporate Lots
		Downtown Lots
 **Information Technology**	Hardware	Hardware
	Software	Software
 **Corporate Fleet**	Corporate Equipment	Heavy Equipment
		Heavy Equipment (Off Road)
		Light Equipment
		Light Equipment (Off Road)
		Medium Equipment
		Medium Equipment (Off Road)
	Corporate Vehicle	Heavy Vehicle
		Light Vehicle
		Medium Vehicle

1.2 Asset Management Legislative Context

The province's "Building Together: Guide for Municipal Asset Management Plans," published in 2012, was developed to encourage and support municipalities in Ontario to produce AMPs in a consistent manner. The guide provided an initial general framework for plan structure and recommended content within the plan sections related to the State of Local Infrastructure, Levels of Service, Asset Lifecycle Management Strategies and Financing Strategies.

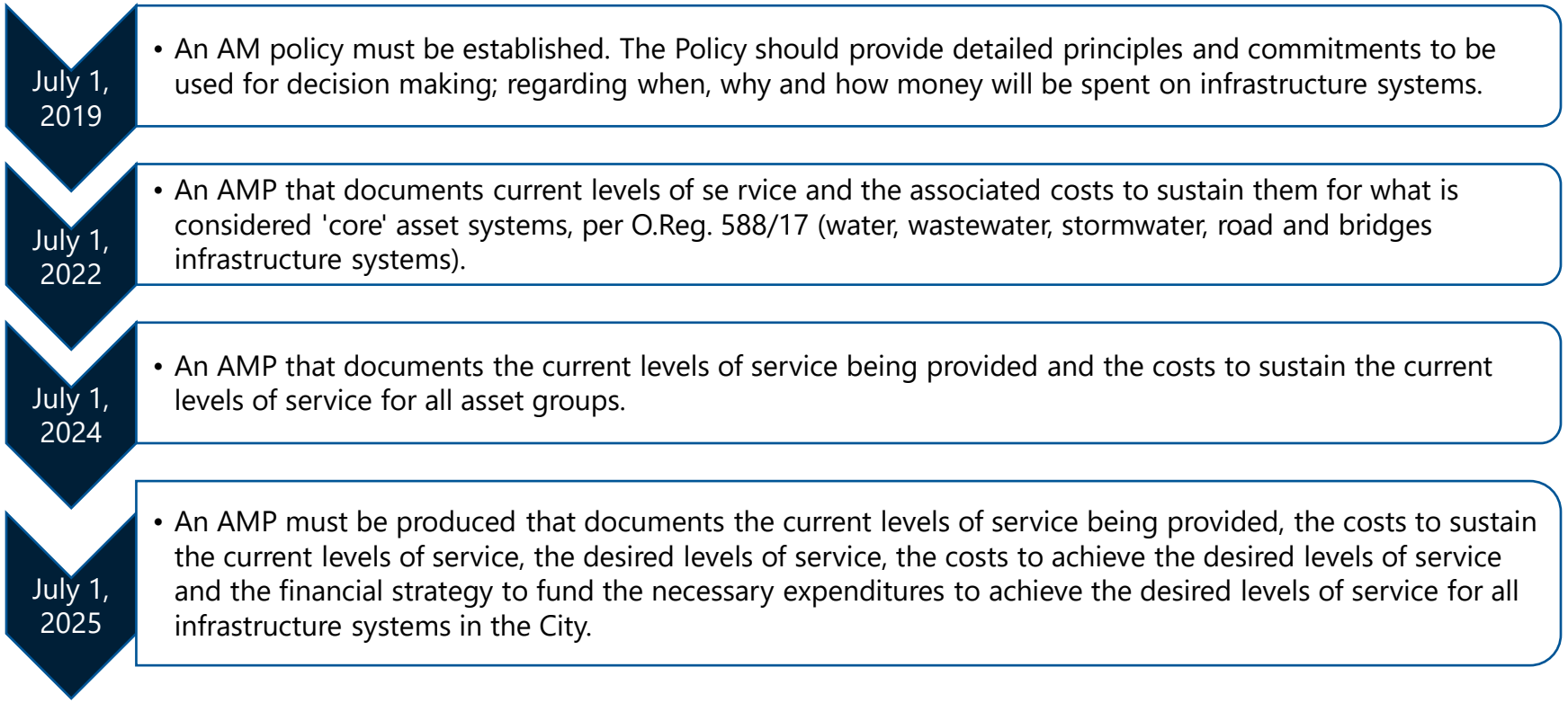
In 2015, Ontario adopted the Infrastructure for Jobs and Prosperity Act, which confirmed the role that municipal infrastructure systems play in strengthening local economies. Following a year-long industry review process, the province created Ontario Regulation 588/17 - Asset Management Planning for Municipal Infrastructure as the first regulation made under the Infrastructure for Jobs and Prosperity Act. The regulation sets out the legal framework for asset management planning in Ontario and expands upon the Building Together guide by mandating specific requirements for municipal asset management policies and plans, phased in over a five-year period.

The provincial and federal governments have made having a council-approved municipal AMP a prerequisite to grant funding eligibility, as well as access to gas tax funding, now known as the Canada Community-Building Fund.

This AMP has been produced to comply with the July 1, 2025 stated requirements in the regulation.

Figure 1-3 summarizes the general timelines and requirements detailed in O. Reg. 588/17.

Figure 1-3: General Timelines and Requirements for O. Reg. 588/17



1.3 Strategic Asset Management Policy

As per Ontario Regulation 588/17, every municipality must have a strategic policy that:

- Articulates principles (e.g., sustainable service delivery, risk-based planning).
- Describes how asset management is integrated with financial planning, budgeting, and land-use planning.
- Outlines roles and responsibilities of staff and council.

- Commits to continual improvement and AMP updates every 5 years.

To meet the regulation, and support the City's vision, the **Strategic Asset Management Policy** was written and then approved by Burlington Council in 2019. The policy aligns with the Strategic Plan by affirming the City's ongoing commitment to ensure consistent asset management processes.

This policy is a high-level statement that outlines the **principles** that guide staff in the development and administration of the Asset Management program, including:

- **Holistic:** The City shall take a comprehensive approach to asset decision support and investment planning that considers the "big picture" and the combined impact of the whole asset life cycle. The City shall consider all assets in a service context and take into account the relationships between different asset types/classes to better optimize decision-making.
- **Strategic and Forward Looking**: To meet future challenges the City shall take a long-term view when making decisions about infrastructure, including consideration of changing demographic and economic trends and future legislative requirements.
- **Health and Safety Focus**: The City shall ensure that the health and safety of employees involved in the construction, renewal and maintenance of infrastructure is protected.
- **Customer Service Focus:** The City shall have clearly defined levels of service that are focused on both customer outcomes and service delivery while balancing customer expectations with risk and affordability. The City will actively encourage community and stakeholder collaboration to better understand current and future stakeholder needs, to ensure they are incorporated into our asset management plans.
- **Systematic:** The City shall adopt a formal, consistent, and repeatable approach to asset management that is transparent and leverages data for evidence-based decision-making.
- **Risk-Based:** The City shall manage the risk associated with attaining defined levels of service by ensuring that resources, expenditures, and priorities are allocated based on risk and associated cost/benefit and risk tolerance.

- **Value-Based Affordable:** The City shall make asset investment decisions based on balancing service, risk and whole life cost. Asset lifecycle treatments chosen will aim to reduce the overall costs to the City while still meeting defined levels of service. The City shall apply full lifecycle costing principles when evaluating capital and operating asset investments.
- **Sustainable:** The approach to service delivery is financially achievable over the long term, is not wasteful of resources, and minimizes the impact of infrastructure on the environment by augmenting resilience to the effects of climate change. The City shall take a "triple bottom line" approach to managing assets and making both short- and long-term infrastructure investment decisions.
- **Environmentally Conscious:** The City shall minimize the impact of infrastructure on the environment and manage the risks and the increased cost required to manage risks due to climate change. The City shall develop an approach for integrating climate change considerations throughout the asset management.

The policy provides a clear governance structure by highlighting the roles and responsibilities of staff who make infrastructure-related decisions.

For the complete Strategic Asset Management Policy, refer to **Appendix A-1**.

1.4 Supporting the City's Strategic Goals

Aligning asset management to municipal strategic plans and goals is essential for ensuring that infrastructure investments support a city's broader vision for growth, sustainability, service delivery, and fiscal responsibility. When asset management is integrated into strategic planning, it can support evidence-based decision-making and long-term resilience.

The benefits of this alignment include:

- **Strategic Consistency:** Asset investments are significant budget drivers. Aligning them with the strategic plan ensures infrastructure spending directly supports the municipality's priorities (e.g., economic development, environmental stewardship, public safety).
- **Enhanced Accountability:** Clear alignment demonstrates to the council, staff, and the public that infrastructure decisions are made in a transparent and goal-oriented way.
- **Improved Service Delivery:** Strategic goals often include commitments to service quality, equity, and sustainability. Asset management helps measure and maintain levels of service in alignment with those outcomes.
- **Informed Trade-Offs:** Asset management provides data on risks, conditions, and lifecycle costs, enabling leaders to prioritize projects in line with strategic objectives rather than just short-term needs.

1.5 Burlington's Current Strategic Planning Approach

1.5.1 Strategic and Corporate Plan Alignment

Burlington's Vision 2040 Strategic Plan outlines the City's vision, values, and strategic objectives for addressing Burlington's needs over a 25-year period (2015 – 2040). The City's assets support these objectives by providing the tangible infrastructure needed to provide services to the community. The development of Burlington's new 25-year long-term strategic plan is currently underway. This plan will serve as the City's foundational roadmap for guiding decision-making around growth, sustainability, service delivery, and governance to 2050.

The Asset Management Plan (AMP) aligns with a number of key strategic directions and objectives within Vision 2040. Specifically, the strategic direction of **An Engaging City** focus is on **enhancing sound decision-making in supporting good governance**. Through this direction, the City **aspires to have in place sound decision-making processes and ensure that City infrastructure is in good condition**.

Figure 1-4: Burlington's Strategic Plan 2015-2040 Report Cover

As documented in the Strategic Plan, the City is undergoing a significant shift with numerous demographic and economic changes. As this transition occurs, planned investments will need to be made in existing infrastructure while also staying focused on future infrastructure growth.

1.5.2 The 5-Year Corporate Strategy

The Corporate Strategy **"Corporate Compass"** was approved by City management and endorsed by Council in 2025. This is where Burlington's strategic directions, perspectives, and objectives reside, driving organizational performance and accountability over a 5-year period.

The Corporate Strategy consists of a series of four strategic directions and perspectives connected to key corporate objectives and key performance indicators (KPIs) and targets. This ensures strategic alignment across City divisions and departments, improves operational decision-making, and reflects changes in budget allocations.

Table 1-2: Corporate Strategy – The Corporate Compass

Strategic Direction	Strategic Perspective	Asset Management Contribution
Build Transparency and Trust	Drive financial sustainability	Forecasting lifecycle costs and funding gaps to inform objectives tied to financial stewardship.
Deliver Positive Community Impact	Optimize resource planning and utilization.	Understanding asset condition, performance and need can support investment prioritization and maximize service value.
	Strengthen community resilience and environmental sustainability.	Planning for stormwater upgrades and flood mitigation infrastructure.

1.6 Supporting the City's Capital Budget Process

The 2025 Asset Management plan supports the City's Capital Budget by aligning infrastructure needs with financial planning and strategic priorities. It helps to ensure that financial resources are allocated efficiently and sustainably. Specifically, the plan acts to:

- Identify annual and long-term infrastructure reinvestment needs
- Recommend required state of good repair asset renewal and replacement
- Support prioritization of key investments
- Support Financial Forecasting

Figure 1-5: Burlington's 2025 Budget Report Cover

The process of developing the City of Burlington's Capital Budget and Forecast is closely informed and guided by the recommendations and priorities established in the AMP. This alignment ensures that limited capital resources are allocated effectively, maximizing asset performance and service delivery outcomes.

How asset management processes integrate with the development of the Capital Budget and Forecast is presented in **Section 6.0**.

1.7 Relationship to Other Municipal Plans

In addition to the Strategic Asset Management Policy, budget process, and organizational strategic objectives, this AMP was developed in alignment with several corporate documents to ensure the City makes the best possible decisions regarding infrastructure needs while minimizing risk and cost to taxpayers and maximizing service delivery. It provides insights into the medium-term infrastructure needs, which help guide planning documents, including the Burlington Official Plan and Financial Plans. Together, these documents (listed in **Table 1-3**) provide a framework for asset management across the City.

Table 1-3: AMP Alignment to Key City Planning Documents

City Planning Documents	Asset Management Plan Alignment
Burlington Official Plan	The AMP incorporates infrastructure related to land-use policies for long-term growth and development.
Financial Plans and Studies	Several financial plans and studies have been developed that provide recommended capital investment requirements or fiscal reporting. These include: • Long Term Financial Plan (LTFP) • Development Charges (DC) Background Study • Tangible Capital Assets (TCA) Policy • Multi-Year Community Investment Plan (MYCIP)
Climate Resilient Burlington (CRB) Plan	The City's climate adaptation strategy. A 10-year plan to adapt to a changing climate and prepare for a "warmer, wetter and wilder" future.
Service-Specific Master Plans and Strategies	Several approved/endorsed master plans have been developed that introduce recommended capital investment requirements. The AMP uses goals and projections from master plans to align better decision-making. These include: • Integrated Mobility Plan • Fire Master Plan • Transit Business Plan • Live and Play Plan • Parks Provisioning Master Plan • Urban Forestry Master Plan and Woodland Management Strategy • Green Fleet Strategy • Corporate Energy and Emissions Management Plan (CEEMP)

1.8 Levels of Service

Municipal asset management should be informed by evidence. An evidence-informed approach begins by documenting the current state of asset management. Measuring current asset performance requires a focused and relevant set of performance indicators. These indicators should reflect core performance attributes of municipal assets, such as condition/quality, lifecycle sustainability, and reliability.

Asset management is fundamentally centered on the services that a municipality provides to its end-users. The Levels of Service (LOS) is a combination of indicators that reflect the social and economic goals of the municipality and link an asset's performance to its target performance goals. LOS is measured from the community perspective and from the technical perspective

Levels of Service (LOS) describe the quality, function and capacity of the City services being delivered. This section of the AMP describes measures for determining the LOS provided by each service area. LOS measures for each service area are established through discussions with City staff or are mandatory metrics as described in O. Reg. 588/17. Levels of Service (LOS) is further examined in **Section 4.0**.

1.9 Risk and Climate Change Considerations

Risk is a foundational consideration in asset management, helping organizations understand and respond to the potential impacts of both internal and external threats to service delivery. Internal risks may include asset failure, maintenance issues, or budget constraints, while external risks can stem from regulatory changes, supply chain disruptions, or environmental factors.

Climate change introduces additional complexity, increasing the frequency and severity of weather-related events and long-term shifts that can accelerate asset deterioration or affect demand for services. Risk and climate change

considerations are woven throughout the asset management process, supporting more resilient planning, prioritization, and investment decisions.

The City's Asset Management Program is aligned with and connected to the City's climate change adaptation plan: Climate Resilient Burlington Plan (2022), through several actions identified in the Plan.

These topics are further discussed in **Section 5.0.**

1.10 Growth Considerations

The City of Burlington and the community work together to develop its' Official Plan, which is a tool for the municipalities to manage growth and development. The Plan outlines long-term visions of the community and quality of life for Burlington residents through statements of objectives and policies. The plan also provides policy direction on land use development and recourse management to guide the future planning and development of the City of Burlington.

The demand placed on the City's infrastructure will change over time based on several contributing internal and external factors, including growth. One effect that growth will have on the City's assets is increased demand resulting in accelerated deterioration of the existing asset portfolio. Planning for population growth may also require expanding the infrastructure network (e.g., roadways, sewer systems, etc.) to ensure the appropriate level of connectivity is maintained throughout the City. Additionally, as the asset portfolio increases due to the assumption of new developments, maintenance and renewal of the new assets will require more resources, including operation, maintenance workforce and operation and capital budgets. The impact of Growth is further examined in **Section 5.0.**

1.11 Asset Management Strategies

The asset lifecycle management strategy is a set of planned actions that will allow the assets to provide desired LOS in a sustainable way at the lowest lifecycle cost (i.e., through preventative action) while managing risk. This section describes the asset lifecycle activities applied to the asset category, the forecasted lifecycle activity costs and the optimal budget to maintain the current LOS. The approach to these items is described below.

Lifecycle activities describe planned actions that can be performed on an asset over its lifetime, from construction to decommissioning. These activities are typically grouped into the following categories, as displayed in **Table 1-4**. Each service area section also explains the associated risks with each lifecycle activity.

Table 1-4: Typical Asset Lifecycle Activities

Lifecycle Activity	Description	Examples
Non-Infrastructure	Actions or policies that can lower costs or extend asset life.	Better integrated infrastructure planning and land use planning, demand management, process optimization, and managed failures.
Maintenance	Regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.	Sewer spot repairs, fixing potholes.
Rehabilitation	Significant treatments are designed to extend the life of the asset.	Structural lining of sewers, road resurfacing, facility revitalization.
Replacement	Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehabilitation is no longer an option.	Sewer replacement, road reconstruction.
Disposal	Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed.	Salvage of equipment.
Expansion	Planned activities required to extend services to previously un-serviced areas - or expand services to meet growth demands.	New recreation centre to service new subdivision.

Asset Lifecycle Strategies are further examined in **Section 5.0.**

1.12 Continuous Improvement

Moving forward, the City plans to update the asset inventory and condition information on an annual basis. As per O. Reg. 588/17 requirements, this annual update will include a review of the City's progress in implementing the AMP, any factors impeding the implementation of the AMP and a strategy to address these factors. A more comprehensive update to the AMP will be completed every five years, with the next update proposed for 2028.

In addition, the City will maintain an improvement and monitoring program to enhance future revisions to this plan. The City applies the continuous improvement methodology indicated in **Figure 1-6** to enhance the Asset Management systems and more effectively deliver desired Asset Management outcomes.

Figure 1-6: Plan-Do-Check-Act Cycle

Assumptions and limitations are outlined within each section of the plan to highlight gaps and identify opportunities for improvement.

More details can be found in **Section 7.0**.

1.13 Content in the AMP

The AMP is organized in the following sections:

- **Section 1: Introduction:** An overview of key asset management concepts, alignment with regulation and the City's strategic plan.
- **Section 2: State of Local Infrastructure:** A summary of the quantity and replacement cost of assets, a summary of the physical condition based on inspections, performance or deterioration models. The State of Local Infrastructure for each service area is presented in **Appendix B**.
- **Section 3: Public Engagement:** Highlights from the public engagement survey and focus group to inform the selection of proposed Levels of Service.
- **Section 4: Levels of Service:** An overview of both **Community LOS** (qualitative, community-focused) measures and **Technical LOS** (performance-based) measures. The current LOS are presented in **Appendix B** for each service area.
- **Section 5: Asset Management Strategies and Key Considerations:** An overview of lifecycle strategies, growth planning and risk management:
    - Detailing the activities planned over the asset's life (maintenance, renewal, replacement) to achieve the desired LOS; amd
    - The risks associated with the lifecycle options.
- **Section 6: Asset Investment and Financing Strategy:** A review of asset investment levels and the proposed Levels of Services delivered over the 10-year planning horizon, as well as the recommended financing strategy. Forecast of capital and operating costs, funding sources, and strategies to address funding gaps.
- **Section 7: Continuous Improvement and Monitoring:** Identify the roadmap of actions for advancing asset management practices at the City.
- **Appendix A:** Includes reference documents such as the policy and public engagement results.
- **Appendix B:** Presents the State of Local Infrastructure sections for each service area.

2.0 State of Local Infrastructure

Understanding the state of local infrastructure is critical for ensuring sustainable urban development, economic growth, and quality of life for Burlington residents. Municipalities manage a vast network of assets, including roads, bridges, stormwater systems, fleet and facilities, many of which require ongoing investment and maintenance. Aging infrastructure, climate change impacts, and evolving community needs present challenges that demand strategic planning and financial commitment. By assessing the current condition of assets and prioritizing investments, the City can enhance service delivery, reduce long-term costs, and support resilient communities.

The City's infrastructure can be generally described as being "mid-life." Burlington experienced significant and rapid growth over several decades, and the infrastructure built and assumed during those years is reflected in the current infrastructure state. Some assets are at an early lifecycle stage, while others are reaching the end of their service lives and need replacement or renewal. The City's infrastructure can also be described, on average, as in a Good condition state.

2.1 Assets Included in the AMP

The Asset Management Plan includes all infrastructure assets that are owned and managed by the City of Burlington, based on year-end 2024 information. Assets are presented within service areas to reflect how the infrastructure contributes to delivering City services. The service area grouping also allows for monitoring of service levels, performance metrics, and outcomes. This structure is considered best practice (ISO 55000) and supports compliance with regulatory standards and requirements. See **Table 2-1** for the asset hierarchy of the 11 service areas and the associated 30 asset classes, presented in descending order of current replacement value.

Table 2-1: Asset Hierarchy - Service Area and Asset Class

Service Area	Asset Class
Transportation (Appendix B-1)	Roadways
	Structures
	Traffic Control and Safety
Stormwater (Appendix B-2)	Stormwater Management
	Stormwater Conveyance
Recreation, Community, and Culture (Appendix B-3)	Recreation
	Community
	Culture
Urban Forestry (Appendix B-4)	Street Trees
	Woodland
	Park and Open Space
	Unassigned
Parks (Appendix B-5)	Parks Linear
	Parks Amenities
	Parks Facilities
Corporate Facilities (Appendix B-6)	Administration Buildings
Transit (Appendix B-7)	Bus Stops
	Facilities
	Equipment
	Vehicles
Fire (Appendix B-8)	Stations and Facilities
	Fire Vehicles
	Fire Equipment
Parking (Appendix B-9)	Parking Lots
	Parking Facilities
	Equipment
Information Technology (Appendix B-10)	Software Applications
	Hardware Systems and Devices
Corporate Fleet (Appendix B-11)	Vehicles
	Equipment

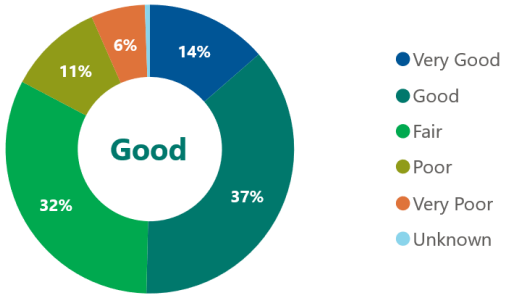
2.2 Overall State of Local Infrastructure

Figure 2-1: State of Local Infrastructure – Overall Corporate Scorecard

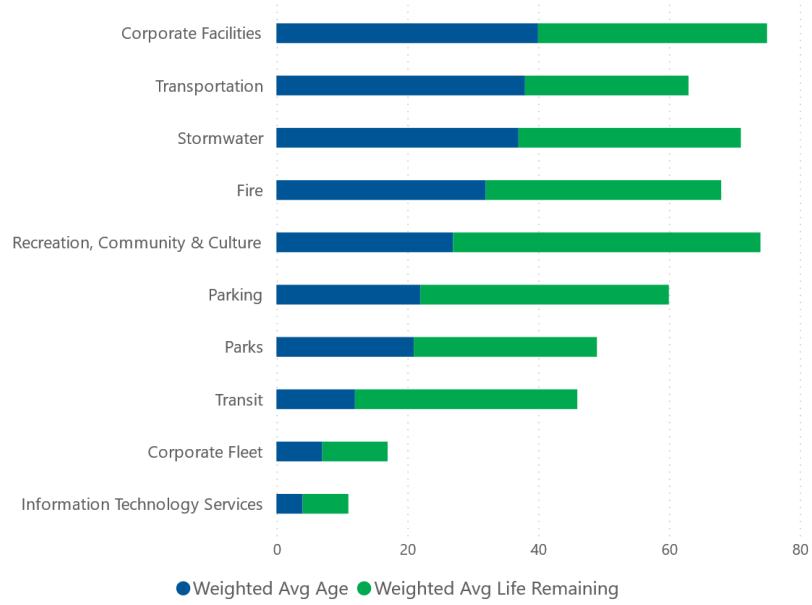
Replacement Value	Average Condition	Risk Rating	Overall Data Confidence	Average Age | Service Life
$7.15bn	Good	Low	B	33 | 65

Average OSI Condition

Asset Condition



Average Age and Remaining Service Life



2.2.1 Data Sources and Confidence

The data needed to support the AMP comes from a combination of different City system sources including systems presented in **Table 2-2**.

Table 2-2: Sources of Data for the AMP

Source	Description
ESRI (GIS)	Geographic Information System (GIS) - acting as the source system for all core and location-based assets; used to collect, organize and integrate data.
RoadMatrix Pavement Management System (RPMS)	Used to store roadway condition data. It is an analytical tool used to identify road pavement strategies and forecasts for preventative maintenance, renewal, and reconstruction timing.
Vanderweil Facility Advisors (VFA)	Used to manage the inventory of all corporate buildings and to support budget modelling, requirements forecasting and capital planning for the Facilities Assets & Sustainability (FAS) portfolio.
Microsoft Excel and SharePoint	Widely used for assets currently not stored in any dedicated asset management software.
Workday Financial Management (ERP)	Enterprise Resource Planning (ERP) solution.
Questica	Financial tool used to track planned capital projects and expenditures.
Brightly Predictor	EAMS Decision Support Solution (DSS) for asset data analysis, risk assessment and modelling.
CTSpec	Platform for managing the inspection, condition assessment, and maintenance of stormwater conveyance systems.
MESH	Used for managing traffic sign inventory and condition information.
TreePlotter	Used by urban forestry to enable tree asset inventory, maintenance and assessment.

The City is currently developing an Enterprise Asset Management Solution (EAMS) in order to have a more centralized inventory with a high level of asset data standards.

Maintaining accurate and reliable asset information is important because it acts as a foundation for decision-making. This information can be used to estimate current and future needs, which supports the planning process and allows the City to be more proactive than reactive.

Data confidence in the Asset Management Plan refers to the trustworthiness, accuracy, and completeness of the data used to assess asset performance, risks, and lifecycle costs. See **Table 2-3** for description of ratings for data accuracy and completeness and **Table 2-4** for data confidence grades.

Table 2-3: Description of Ratings for Data Accuracy and Completeness

Rating	Completeness Description	Accuracy Description
Very High	Inventory is complete and well-documented. Assuming >95% of assets have been captured.	No assumptions, and condition, age and replacement value are known/recently updated.
High	Inventory is assumed to be mostly complete, assuming 75 - 95% of assets are captured.	Minor assumptions in condition, age and replacement value are estimated from recent tenders or POs.
Medium	Inventory is moderately complete, assuming 60 - 75% of assets captured.	Moderate assumptions have been made on age or condition, and replacement values are estimated from moderately reliable or dated sources.
Low	Inventory is significantly incomplete, assuming less than 60% of assets are captured.	Data documentation is outdated, with some unknown data attributes (age, condition, replacement value).
Very Low	Inventory is extremely incomplete, assuming <25% of assets are captured.	Large gaps in data in one or more attributes: age, condition and replacement value.

Table 2-4: Data Confidence Grades

Grade	Completeness	Accuracy
A	Very High	Very High
A-	Very High	High
A-	High	Very High
B	High	High
B-	High	Medium
B-	Medium	High
C	Medium	Medium
C-	Poor	Medium
C-	Medium	Low
D	Low	Low
D-	Very Low	Low
D-	Low	Very Low
F	Very Low	Very Low

The key highlights related to data confidence and accuracy include:

- **Data Confidence:** The overall average data confidence grade for the City of Burlington is **'B,'** and both the average Data Accuracy and Data Completeness confidence level are classified as **'High.'**
- **Asset Age and Lifespan**: Weighted by replacement value, the average age of the City's assets is **33 years**, with an average estimated service life of **65 years**. (Note: Heritage buildings, museums, and public art do not have an estimated service life associated with them.)

- **Inventory Trend:** With the implementation of EAMS, it is anticipated that the City's inventory of assets will continue to increase as service areas undergo refinement of data warehousing. Net new additions to the City's asset base networks and portfolios will also occur as infrastructure is expanded, constructed, acquired and assumed through development. This expansion of the City's asset "footprint" has significant and long-lasting impacts. As new assets are added, they must be maintained, rehabilitated, and eventually replaced. These lifecycle costs need to be accounted for in future AMPs and financial strategies.

2.3 Replacement Value

2.3.1 Calculation of Current Replacement Values

Replacement values were developed in various methodologies, depending on the type of asset, and include historic construction or purchase costs, unit costs, standardized costing indices, and system-level assets and components within the facility management system.

1. Of note, not all assets are replaced; some are continually rehabilitated rather than replaced. As such, a replacement value estimate serves as a foundational benchmark to highlight the significance of the infrastructure that supports the service area.

The total Current Replacement Value is $7.1 billion ($2024). See **Figure 2-2** for total asset valuation by service area and **Table 2-5** for replacement value ($2024).

Figure 2-2: Total Asset Valuation by Service Area (largest to smallest)

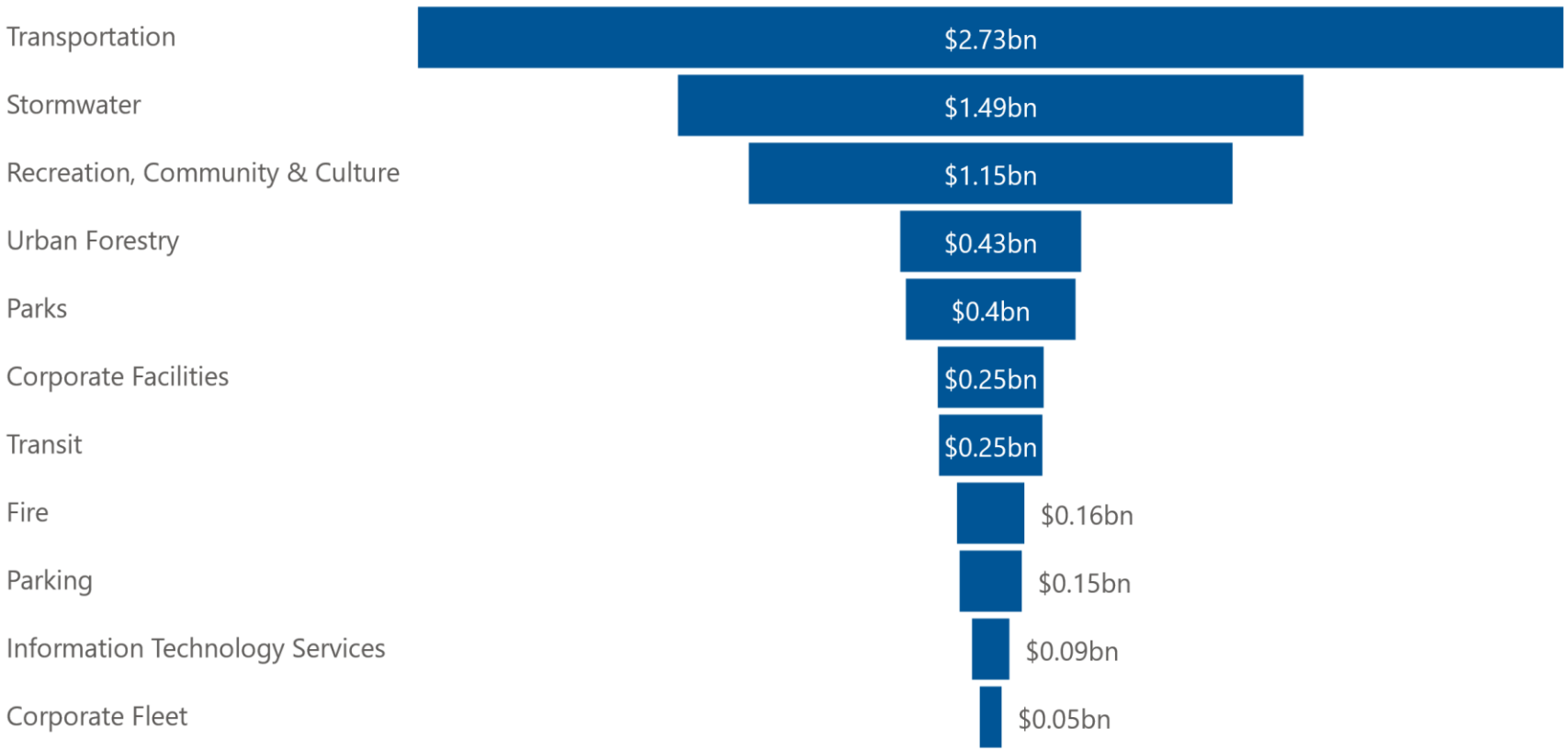
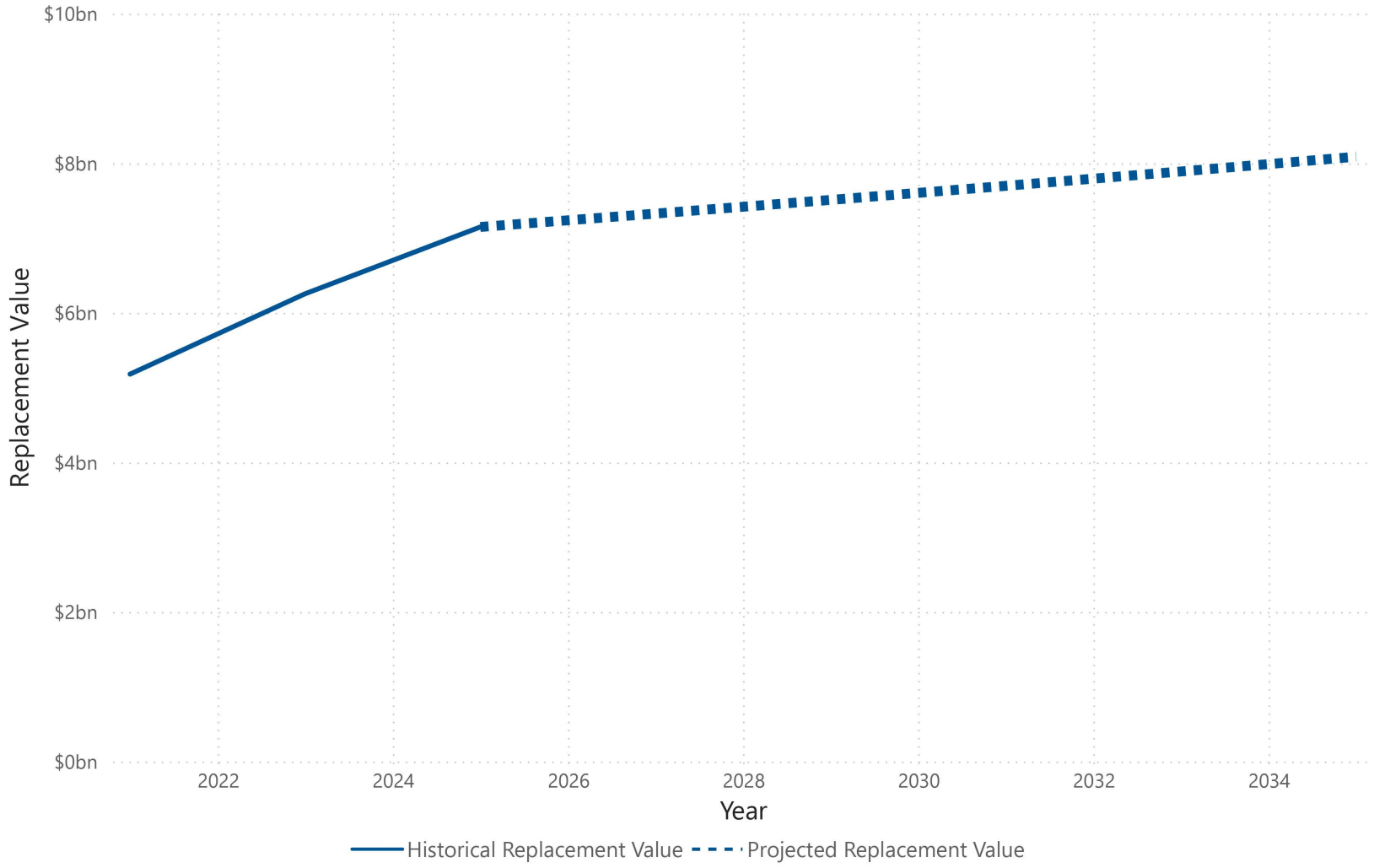


Table 2-5: Replacement Value by Asset Service

Service Area	Replacement Value ($2024)
Transportation	$ 2,726,489,000
Stormwater	$ 1,488,941,000
Recreation, Community and Culture	$ 1,151,483,000
Urban Forestry	$ 430,618,000
Parks	$ 403,808,000
Corporate Facilities	$ 252,083,000
Transit	$ 246,146,000
Fire	$ 160,392,000
Parking	$ 148,037,000
Information Technology	$ 88,826,000
Corporate Fleet	$ 51,915,000
Total	**$ 7,148,739,000**

Replacement Value Trend: Using a 2.5% inflation rate, we can project the City's current asset portfolio to be valued at nearly $9 billion by 2034 (see **Figure 2-3**), but that does not take into account new or enhanced assets due to growth or expansion or any cost-impacts due to tariffs or market supply changes.

Figure 2-3: Projected Replacement Value of Current Assets (2022 to 2034)



2.4 Asset Condition

2.4.1 Condition Assessment

Asset condition is assessed or determined via various methodologies depending on the type of asset and can include visual inspections, assessments, or calculated metrics based on condition, performance, or age as a proportion of its estimated service life.

Asset-specific condition indices based on industry standards are also used, such as Facility Condition Index (FCI) for Facilities, Pavement Quality Index (PQI) for roadways, and Bridge Condition Index (BCI) for Bridges.

Examples of these different types of condition scores are provided below:

- A 20-year-old culvert with a 50-year estimated service life would have a condition score of **60,** with 60% of its service life remaining.
- A road segment with a PQI of **75.**
- A facility with an FCI of **0.04.**
- A bridge with a BCI of **72.**
- A bus stop with a condition score of **4** out of 5.

Note that where an asset's age exceeded its estimated service life but is still in service, a condition score of "0" was assigned to the asset, indicating that it is nearing the end of life.

2.4.2 Condition Rating

Asset condition scores are translated into standardized condition states and performance categories for use in the EAMS–DSS tool, which utilizes an Overall Service Index (OSI) to report on the current and future condition states assets in an asset portfolio.

2.4.3 Overall Service Index

A single condition score or index often does not adequately summarize the performance of an asset. A good example of this is the FCI and PQI metrics. In the case of facilities, the FCI alone is not a suitable indicator of how well the asset is performing or where in its lifecycle that asset currently is. Similarly, the PQI of a roadway segment speaks mostly to the surface condition of the roadway and does not take into consideration the age or condition of the road base below. For facilities and roads, the Overall Service Index (OSI) is based on a weighted expression consisting of the condition index and age. For all other assets, the OSI is based on the single condition score for each asset.

2.4.4 Condition Performance Category

All condition scores and indices can be expressed as a descriptive **Performance Rating.** In the examples provided above, all the assets listed would have a performance of "Good" on scores, according to the Condition Rating Scale used in this AMP and provided below. This Performance Category rating scale aligns with the scale employed by the National Infrastructure Report Card produced by the Federation of Canadian Municipalities (FCM), the Canadian Society for Civil Engineering (CSCE) and the Canadian Construction Association (CCA). In addition to providing a comprehensive basis for assessment, this will allow for benchmarking of the results against the values presented in this document. See **Table 2-6** for asset condition performance rating scale table aligning various condition scores to the condition ratings in this AMP (Very Good, Good, Fair, Poor and Very Poor) and **Appendix A-2** for more information on condition performance rating scale.

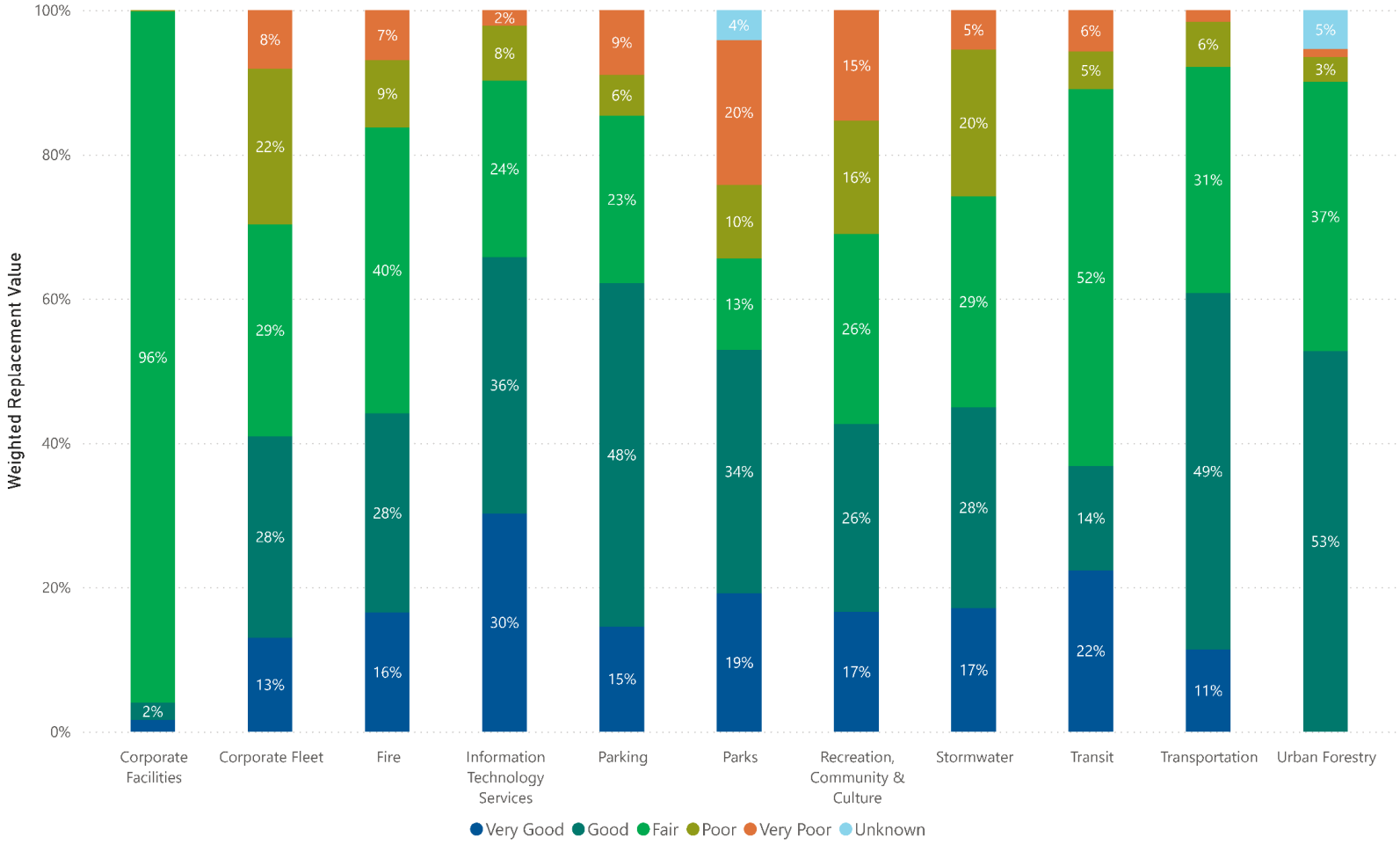
Table 2-6: Asset Condition Performance Rating Scale

Condition Rating	Overall Service Index	Condition Score	Condition Score	FCI	PQI	BCI	Performance or Life Remaining
Very Good	1	100-80	5	0.01 - 0.02	80 - 100	86 - 100	"Very Good" or >80% of life remaining
Good	2	60-79.9	4	0.03 - 0.05	67 - 79	71 - 85	"Good" or 60 –80% of life remaining
Fair	3	40-59.9	3	0.06 - 0.1	55 - 66	61 - 70	"Fair" or 40 – 60% of life remaining
Poor	4	20-39.9	2	0.11 - 0.49	35 - 54	41 - 60	"Poor" or 20 – 40% of life remaining
Very Poor	5	0-19.9	1	0.5 - 1	0 - 34	0 - 40	"Very Poor" or <20% of life remaining

2.4.5 Corporate-Wide Condition Profiles

The current condition profiles for each asset service category are shown in **Figure 2-4**.

Figure 2-4: Asset Condition by Service Category (Percentage of Replacement Value)



The City's assets are experiencing a gradual decline in condition due to factors such as age, utilization, and environmental conditions. This trend is common across municipalities that face constrained capital budgets, deferred maintenance backlogs, and an expanding asset base due to growth. The result will be accelerated deterioration of the City's infrastructure, leading to reduced performance, increased risk of failure, and higher lifecycle costs.

Refer to **Section 6.0** for a summary of the corporate-wide condition profiles based on future forecast scenarios generated as part of this AMP.

2.5 State of Local Infrastructure Summary

See **Table 2-7** for the summary of the state of local infrastructure by service area. See **Appendix B-1 to B-11** for the state of local infrastructure sections by service area.

Table 2-7: State of Local Infrastructure Summary by Service Area

Service Area	Summary
 **Transportation**	1,600 lane kilometers of roadways 17 km pedestrian sidewalks and pathways 47 Bridges 107 Major Culverts 26,000+ Streetlights Average Condition Good Replacement Value: $2.73 Billion Average Age and Service Life: 38 | 64
 **Stormwater**	851 km Storm sewer Pipes 2,700+ Minor Road Culverts 19 Oil and Grit Separators 1 Raingarden 30 Stormwater Management Ponds Average Condition Good Replacement Value: $1.49 Billion Average Age and Service Life: 37 | 71

Service Area	Summary
 **Recreation, Community, and Culture**	9 Community Centres 2 Art Facilities 7 Libraries 3 Museums 7 Arenas 7 Pools 1 Golf Course and Facility Average Condition Good Replacement Value: $1.15 Billion Average age and service life: 27 | 73
 **Urban Forestry**	49,000+ Street Trees 12,000+ Park and Open Space Trees 37 Woodlands Average Condition Good Replacement Value: $431 Million

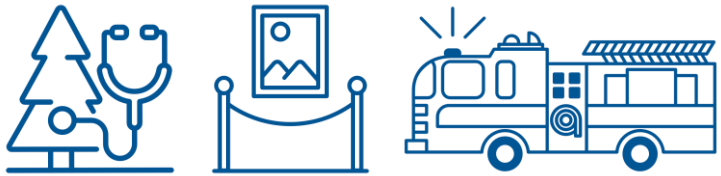
Service Area	Summary
 **Parks**	111 Sport Fields 18 Splash pads 25 Tennis and Pickleball Courts 9 Community Gardens 9 Leash-Free Areas 20 km Multi-Use Trails 15 Park Washrooms Average Condition Good Replacement Value: $404 Million Average Age and Service Life: 21 | 48
 **Corporate Facilities**	1 Animal Shelter 1 Cemetery 2 Office Buildings 1 Operations Centre Campus Average Condition Good Replacement Value: $252 Million Average Age and Service Life 40 | 75

Service Area	Summary
 **Transit**	2 Transit Facilities 74 Conventional Buses 16 Specialized Buses 11 Support Vehicles 823 Bus Stops Mix of Equipment Average Condition Good Replacement Value: $246 Million Average Age and Service Life: 12 | 46
 **Fire**	7 Fire Stations and 1 Headquarters 38 Fire Vehicles Mix of Fire Equipment Average Condition Good Replacement Value: $160 Million Average Age and Service Life: 32 | 68

Service Area	Summary
 **Parking**	2 Parking Facilities Mix of Parking equipment 38 Parking Lots Average Condition Good Replacement Value: $148 Million Average Age and Service Life: 22 | 60
 **Information Technology**	Mix of Hardware (servers, workstations etc.) Mix of Major, Minor and Hosted Solution Software Average Condition Good Replacement Value: $89 Million Average Age and Service Life: 4 |10
 **Corporate Fleet**	Mix of light, medium and heavy vehicles and equipment Average Condition Good Replacement Value: $52 Million Average Age and Service Life 7 |17

In **Appendix B**, each service area incorporates the following in a more detailed State of Local Infrastructure section:

1. A summary of the inventory of assets which support the service area, including types and quantities.
2. A summary of the replacement value of the Asset Classes and Types.
3. The age and remaining service for each Asset Class and Type.
4. Condition ratings of the assets that support each service area (i.e., % of assets in very good condition, weighted by the replacement value).
5. A description of the data sources used to inform this Section, including any relevant condition assessment policies/practices.
6. A summary of the data confidence grade for the asset service category.
7. A summary of current Level of Service performance metrics for the asset service category, including Standard-, Technical-, and Community Levels of Service (if applicable).
8. A summary of Lifecycle Activities for the asset service category and, if applicable, its classes.
9. The Risk Rating that represents the internal risk the asset service category presents to service delivery and examples of external risk the asset service category faces.



3.0 Public Engagement

An important aspect of a municipality's asset management plan is that it reflects the needs and values of the community. Establishing proposed Levels of Service as required by Ontario Regulation 588/17 creates an opportunity for the City to include public engagement in their asset management planning to support decision-making and alignment with the community.

The City carried out a Community Engagement Strategy to support the update of this AMP, with the objective of educating and increasing the public's awareness of Asset Management at the City and gathering insight to help establish the Proposed LOS.

The Community Engagement Strategy consisted of three components:

1. Online Survey;
2. External Focus Group; and
3. Internal Focus Group.

3.1 Online Survey

An online survey was posted on the City's Get Involved platform and ran for three weeks early in 2025. The survey was developed to better understand community expectations on levels of service and aimed to determine the priorities for keeping or changing how infrastructure is managed across various City services. Survey respondents were asked about

their levels of satisfaction with the City-owned and City-managed infrastructure that delivers various services, and willingness to pay for investments in maintaining infrastructure.

The survey was completed by 184 respondents, distributed across a wide range of age demographics.

The asset groups selected for the survey, those that have a level of interaction with the public, included: Transportation, Transit, Parking, Stormwater Flow and Management, Recreation, Community and Culture, Parks, and Urban Forestry.

The survey results highlighted trends in public satisfaction and investment priorities. While areas such as parks, recreation facilities, and urban forestry receive strong support, transportation infrastructure, stormwater management, and transit had more divided opinions. The data suggests that while many residents are generally satisfied with existing infrastructure, there is also significant demand for continued or increased investment in key areas like roads, transit, and stormwater infrastructure.

See **Figure 3-1** for satisfaction scores and **Table 3-1** for a summary of satisfaction, dissatisfaction, and priority asset groups for improvement.

Figure 3-1: Satisfaction with Asset Groups (Percentages)

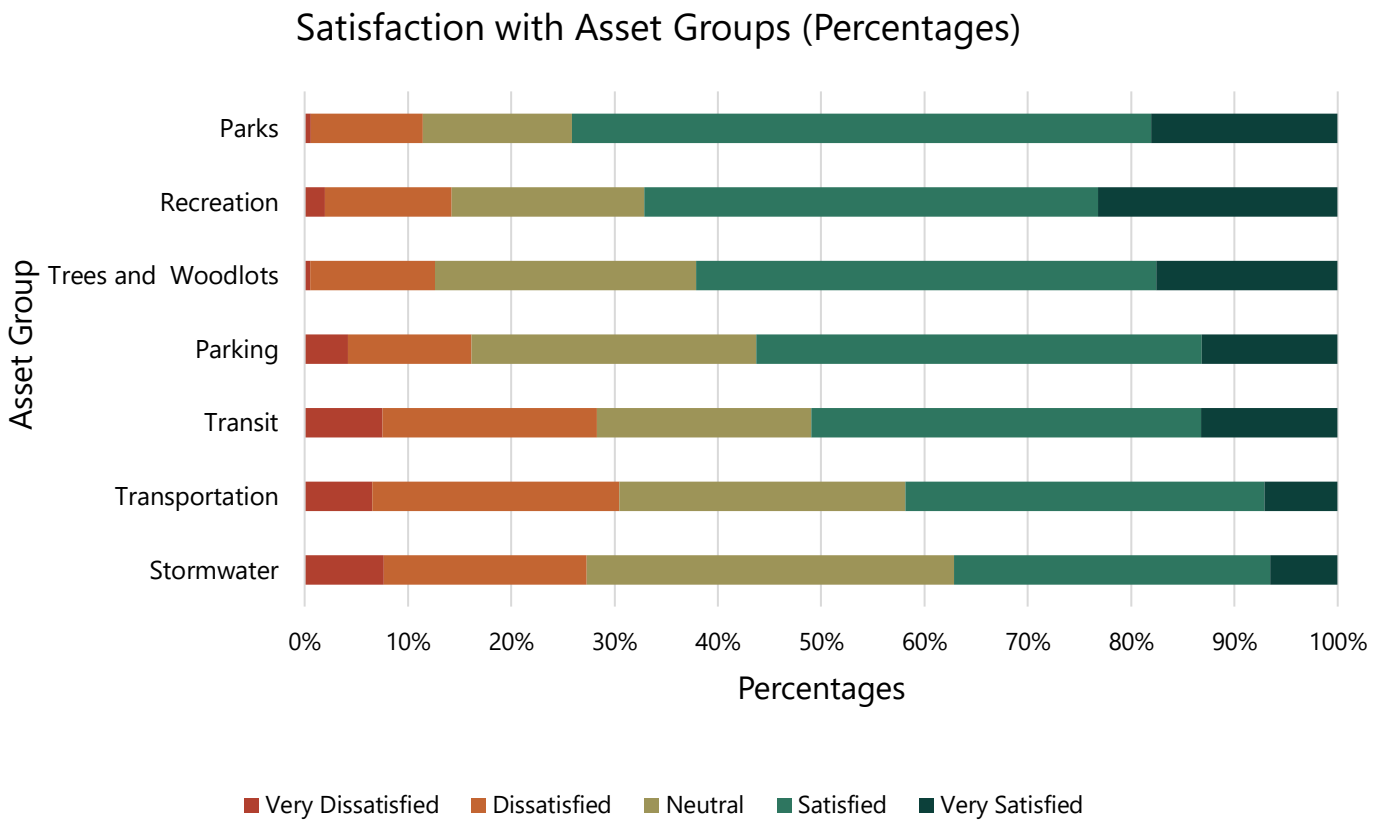


Table 3-1: Summary of Satisfaction and Priority for Improvement

Asset Groups	%Satisfied and Very Satisfied	%Dissatisfied and Very Dissatisfied	Improved or Enhanced
Parks	74.1%	11.4%	49 votes
Recreation, Community and Culture	67.1%	14.2%	54 votes
Trees and Woodlots	62.1%	12.6%	61 votes
Parking	56.3%	16.2%	24 votes
Transit	50.9%	28.3%	47 votes
Transportation	41.9%	30.4%	105 votes
Stormwater Flow and Management	37.2%	27.4%	102 votes

The following responses were provided to the question of which option best reflects willingness to pay in support of infrastructure managed in the City:

- **Increase (44.7%):** The City increase investment in infrastructure, enhancing the reliability/quality of the City's infrastructure;
- **Maintain (40.2%):** The City maintains its current investment in infrastructure;
- **Reduce (8.9%):** The City reduce investment in infrastructure, decreasing the reliability/quality of the City's infrastructure; and
- **Unsure (6.1%):** Unsure of the best response.

For a full summary of the online survey questions and results, see **Appendix A-3.**

3.2 External Focus Group

The external focus group was held one evening in February 2025, consisting of a small group of members of the public who had expressed interest in participating through the City's Community Panel program. The discussion and engagement activities revealed differing perspectives, even within a small group, highlighting the complexity of infrastructure decision-making. While some participants prioritized investments in roads and transit, others advocated for green infrastructure and recreational spaces.

In the end, there was a productive discussion around trade-offs and compromise.

This discussion helped participants relate to the broader challenge the City Council faces in balancing competing priorities.

3.3 Internal Focus Group

A two-part internal focus group with City staff was conducted to gather valuable insights for the AMP update. The first part, a virtual session, took place in January 2025 with over a dozen City staff who were briefed on the scope of the AMP update and the key objectives. The session also aimed to understand the staff's budget commitments, identify what aspects of service delivery are negotiable, and pinpoint non-negotiable priorities.

The second part, an in-person session, took place in February 2025 and served as a deeper dive into the decision-making process by facilitating discussions around potential trade-offs between service levels and budget constraints. These facilitated conversations helped uncover key priorities and potential areas for flexibility, developing an understanding of both operational realities and public expectations. As part of this session, we also facilitated a game where participants from various departments worked in small groups to allocate funding across service levels. This exercise proved highly valuable, giving participants a tangible experience of the challenges of working through infrastructure funding decisions.

City staff emphasized that service commitments are generally documented in department or service area plans, and the feedback clearly outlined several priorities, including maintaining service levels across various sectors. **Table 3-2** presents a summary of asset service-specific priorities and commitments highlighted by the internal focus group.

Table 3-2: Asset Service Category-Specific Priorities/Commitments

Asset Service Category	Priority/Commitment
All Categories	State of Good Repair (SOGR) Secure funding for modernization and upkeep
Recreation, Community, and Culture	Increased participation
Transit	Free transit and increased modal split
Transportation	Development and implementation of IMP
Information Technology	Improved data transparency and security
Fire	Public safety and emergency response, community risk reduction
Transportation, Parks, and Urban Forestry	Maintenance and sustainability
Transportation	Integration of mobility and strategic planning
Corporate Fleet	Implement environmentally sustainable fleet operations.
Urban Forestry	Long-term urban forest management

One of the key takeaways was that many of these commitments are linked to specific timelines or are contingent upon securing the necessary funding. This suggests that while there is strong alignment among departments on priority areas, the realization of these goals will depend significantly on the availability of financial resources. Additionally, a significant risk identified during the session is that without additional funding, current service levels may not be able to be maintained over time.

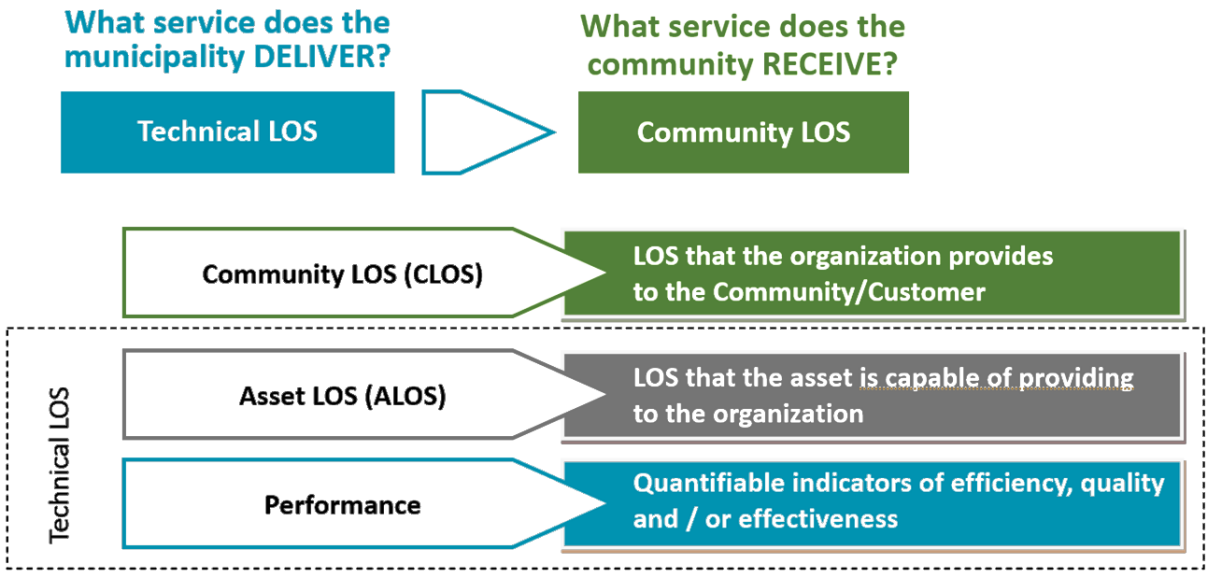
The financial strategy option that garnered the most support was the option to "protect current service levels with the required capital funding within/across certain asset classes." This strategy reflects the staff's preference for safeguarding existing service levels rather than embarking on new initiatives without ensuring that foundational infrastructure and services are adequately maintained.

The insight and findings of these three engagement strategies were incorporated into the Proposed Levels of Service scope of the AMP update, discussed in **Section 6.0.**

4.0 Levels of Service

Levels of Service (LOS) describe the quality, function and capacity of the City services being delivered. This section of the AMP describes measures for determining the LOS provided by each service area. LOS measures for each service area are established through discussions with City staff or are mandatory metrics as described in O. Reg. 588/17. See **Figure 4-1** for a definition of Technical LOS and Community LOS.

Figure 4-1: Definition of Technical LOS and Community LOS



Building on the LOS Framework that was developed in the 2021 AMP, the LOS Framework for this AMP was reviewed and refined over a series of workshops with asset service leads. This framework builds on to the 2021 AMP, including the following four elements for each asset service category:

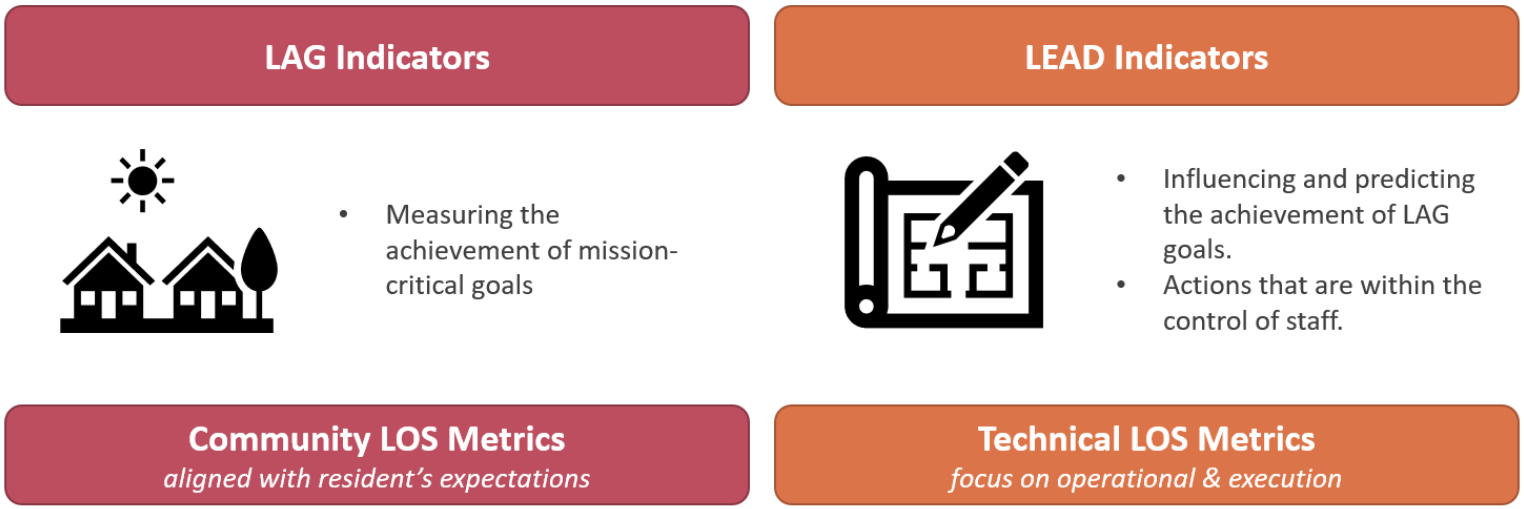
1. **Service Objective Statement**: The key corporate performance expectations are based upon core values.
2. **Service Attribute:** This summarizes the type of service being provided to citizens, businesses and the wider community, with a related **Service Expectation**, where:
    - **Scope:** describes the range and extent of the services provided.
    - **Quality:** the condition or performance of the service delivered.
    - **Reliability:** the consistency and dependability of the service.
    - **Safety:** ensuring the assets are safe for use or reduce risk from harm.
    - **Availability:** the accessibility or up-time of the service when needed.
    - **Environmental Sustainability:** the impacts of service delivery on the environment.
3. **Performance Measures**: The measurement of asset performance from the operational perspective of delivering the service and from the community perspective of receiving the service, where:
    - A Community Performance Indicator measuring asset performance from the perspective of the community; and
    - A Technical Performance Indicator measuring asset performance from an operational perspective.
4. **Current Performance:** The current performance of the asset is quantified through the best available information within the most recent one or two years.

4.1 Current LOS

This approach to measuring service delivery performance is supported by the 4 Disciplines of Execution (4DX) framework, which provides a structure for measuring public sector service delivery performance. The 4DX framework emphasizes the use of LAG Indicators to measure the output of the asset service delivery system at the community level and LEAD Indicators to measure the interim measures required to deliver the LAG indicators.

See **Figure 4-2** for the definition of LAG indicators and LEAD indicators.

Figure 4-2: Definition of LAG Indicators and LEAD Indicators



4.1.1 LAG Indicators

LAG Indicators measure the output of the asset service delivery system at the community level. LAG indicators measure high-level asset management results (goals or targets) that report on how the performance of the infrastructure provides serves to the Community. When establishing LAG Indicators (i.e. Community LOS), the measure should reflect resident and taxpayer expectations around asset performance.

- **LAG Measures are the Community LOS Measures:** These indicators are crucial for understanding how well the municipality is meeting the community's expectations and goals for asset performance. However, it is extremely difficult to manage desired LAG/Community LOS results without establishing corresponding LEAD measures.

4.1.2 LEAD Indicators

LEAD Indicators measure the interim measures (inputs) that are required to deliver the LAG indicators. LEAD indicators focus on activities or behaviors (execution) that predict and influence the achievement of LAG results.

- **LEAD Measures are the Technical LOS Measures:** These indicators are highly relevant to the City staff teams that have day-to-day responsibility for asset performance. LEAD measures provide actionable insights and guide the necessary steps to achieve the desired LAG outcomes.

4.1.3 How LEAD Indicators Influence LAG Goals

Each LAG/Community LOS target is supported by one or more LEAD/Technical measures that focus on the "stuff we have to do" to deliver effective asset management. The figure below illustrates the interdependence between Community LOS (LAG targets) and Technical LOS (LEAD execution enablers).

4.2 Current LOS Framework

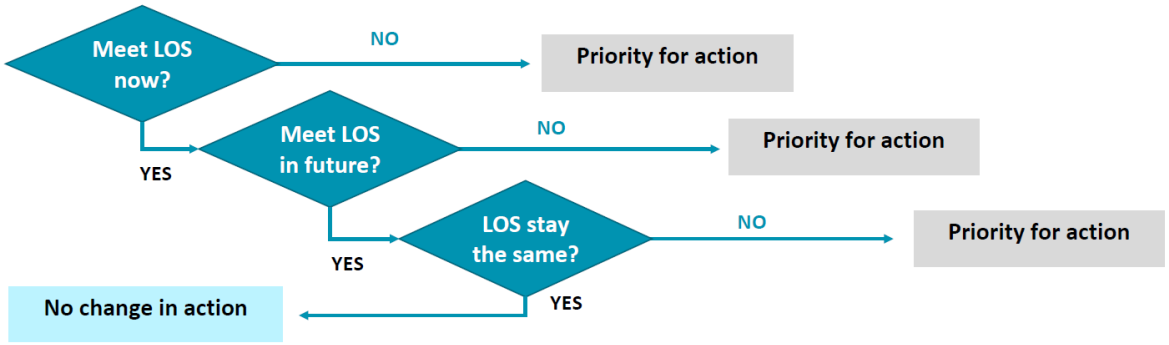
As part of the LOS Framework review for this AMP, several areas for improvement were identified and included the need to:

- **Review** previous LOS metrics for relevancy and data availability;
- **Standardize Community LOS Metrics** to better reflect resident and taxpayer expectations and present a coherent city-wide performance story;
- **Standardize Technical LOS Metrics** to align with Community LOS indicators and provide a clearer picture of asset performance from the City's organizational perspective;
- **Quantify Proposed LOS Targets** the 2021 AMP included historical performance data but did not identify future-oriented targets for both Community and Technical LOS; and
- **Commit** to continuous improvement in LOS measurement, building on the initial efforts of the 2021 plan.

Levels of Service describe the service performance and provide a framework for identifying the risks to achieving those LOS, and what actions need to be taken to balance the trade-offs between service delivery, risk and willingness to pay. A deeper discussion on risk and lifecycle strategies is provided in **Section 5.0**.

See **Figure 4-3**, which illustrates a process map for determining action priority based on meeting Levels of Service (LOS).

Figure 4-3: Decision Tree for Meeting Levels of Service



4.3 Standardized Corporate Levels of Service

At the corporate level, each of the eleven service areas reports on a set of three standardized LOS metrics, which include:

- **Reinvestment Rate**: The measure of capital renewal investment divided by the current replacement value;
- **SOGR Backlog**: The measure of the accumulated backlog of State of Good Repair treatment activities; and
- **% Poor or Very Poor**: The percentage of assets on a replacement value basis that are in poor or very poor condition.

See **Section 6.0**, for a further discussion of these metrics and the methodologies used to calculate them.

See **Table 4-1** for the current overall corporate standardized LOS Metrics for 2024.

Table 4-1: Standardized Corporate LOS Metrics – Current (2024) – Overall Corporate

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	1.08%
Technical LOS	SOGR Backlog	$454,600,000
Community LOS	% Poor or Very Poor	17.00%

4.4 Asset Service-Specific Levels of Service

In addition, asset service-specific LOS metrics were identified within the eleven asset service categories. These metrics were selected by the asset service leads as measures that either align with existing department KPIs, Master Plans or studies or drive internal reporting processes for specific goals or maintenance standards. These are reported within each of the 11 State of Local Infrastructure reports in **Appendix B**. A summary of the standardized corporate LOS metrics is presented in **Table 4-2**.

Table 4-2: Standardized Corporate LOS Metrics – Current (2024) – Each Service Area

Service Area	Reinvestment Rates (Year 1)	SOGR Backlog	% Poor or Very Poor
Transportation	0.89%	$ 335,719,000	7.83%
Stormwater	0.50%	$12,856,890	25.80%
Recreation, Community and Culture	0.79%	$12,248,018	31.04%
Urban Forestry	0.06%	$8,612,365	4.57%
Parks	2.28%	$56,490,348	30.30%
Corporate Facilities	1.17%	$1,881,293	0.19%
Transit	4.90%	$7,350,032	10.97%
Fire	2.42%	$6,523,138	16.24%
Parking	1.13%	$7,652,688	14.64%
Information Technology	3.11%	$3,754,000	9.79%
Corporate Fleet	7.11%	$1,593,100	29.72%

5.0 Asset Management Strategies and Key Considerations

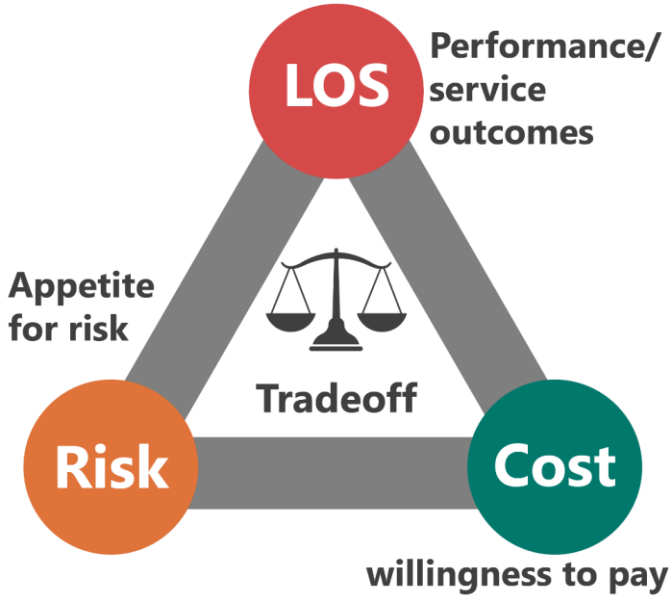
The City's asset management strategies outline how municipal infrastructure assets will be managed to deliver desired levels of service in a cost-effective and sustainable manner. These strategies will guide decision-making related to the maintenance, rehabilitation, replacement, and expansion of assets. They ensure that resources are distributed efficiently, risks are managed properly, and assets continue to support the community's needs over their lifecycle.

Each strategy considers the unique characteristics of asset classes, including their condition, criticality, performance, and financial requirements. By applying proactive, data-driven approaches, the strategies support long-term financial sustainability, regulatory compliance (such as Ontario Regulation 588/17), and alignment with the municipality's strategic objectives.

The City applies a structured method to manage its infrastructure assets to maximize value, minimize risk, and ensure sustainable service delivery over the long term. This approach is necessary, as it aims to maintain and improve asset performance, optimize spending, and meet regulatory and community expectations.

There are linkages and tradeoffs between the effort/expenditures required by the assets, the levels of service provided, and the risks related to the selected strategies. This is shown in **Figure 5-1**.

Figure 5-1: Tradeoff Between Risk, LOS and Willingness to Pay



The relationship between risk, asset performance, and willingness to pay is dynamic and interdependent. A change in one factor, such as increased risk, declining performance, or shifting financial capacity, can influence the others. This relationship is not static; it requires ongoing evaluation to ensure that service levels remain appropriate, risks are effectively managed, and investment decisions reflect both needs and available resources.

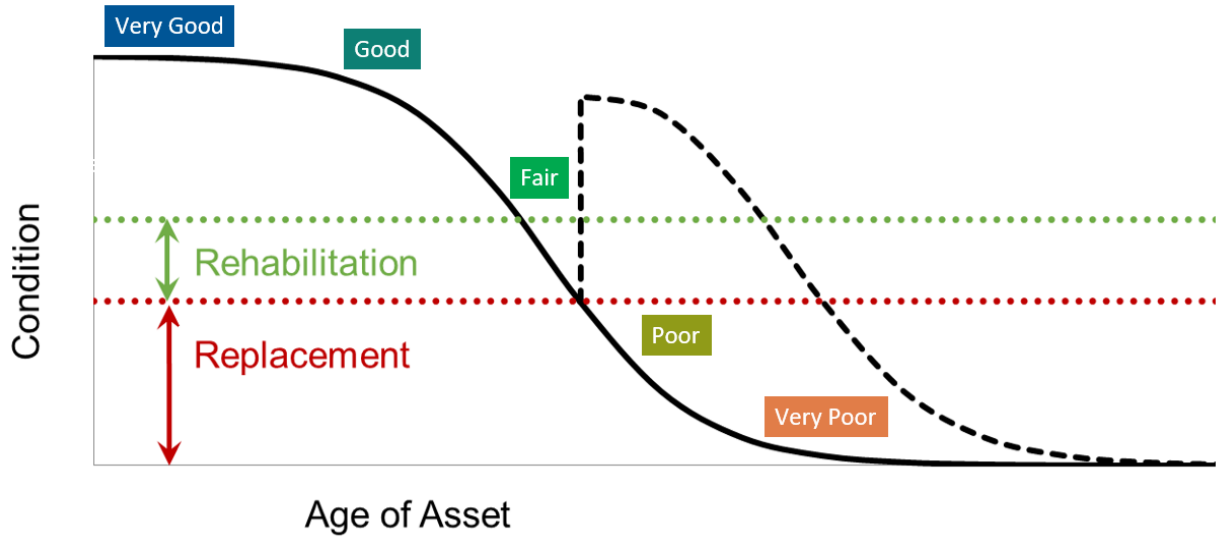
5.1 Lifecycle Management Strategy

The asset lifecycle management strategy is a set of planned actions that will allow the assets to provide the proposed LOS in a sustainable way at the lowest lifecycle cost while managing risk (presented later in **Section 6.0**). It provides a comprehensive and effective approach to asset management and is shown in **Figure 5-2**. It manages and optimizes the cost and performance of an asset by considering the entire lifecycle.

In establishing proposed levels of service, it is necessary to identify the lifecycle activities that would need to be undertaken to provide the proposed levels of service. Using the EAMS-DSS tool, various lifecycle activities are employed in a modelled strategy and are informed by age, condition, or asset-specific indices such as Pavement Quality Index or Bridge Condition Index, as illustrated in **Figure 5-3**.

Figure 5-2: Asset Lifecycle Steps from Need Identification to Replacement

Figure 5-3: Lifecycle Strategy



Lifecycle activities are typically grouped into the following categories, as displayed in **Table 5-1**. Each service area State of Local Infrastructure section (**Appendix B**) also explains the associated risks with each lifecycle activity.

Table 5-1: Typical Asset Lifecycle Activities

Lifecycle Activity	Description	Examples
Non-Infrastructure	Actions or policies that can lower costs or extend asset life.	Better integrated infrastructure planning and land use planning, demand management, process optimization, and managed failures.
Construction or Acquisition	New assets are built, purchased or assumed to meet service delivery needs.	Bridge construction, road assumption, fleet vehicle purchase.

Lifecycle Activity	Description	Examples
Maintenance	Regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.	Sewer spot repairs, fixing potholes.
Rehabilitation	Significant treatments are designed to extend the life of the asset.	Structural lining of sewers, road resurfacing, facility revitalization.
Replacement	Activities that are expected to occur once an asset has reached the end of its estimated. service life and renewal/ rehabilitation is no longer an option.	Sewer replacement, road reconstruction.
Disposal	Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed.	Salvage of equipment.
Expansion	Planned activities required to extend services to previously un-serviced areas - or expand services to meet growth demands.	New recreation centre to service new subdivision.

The EAMS – DSS includes in its analysis, rehabilitation, renewal, and/or replacement lifecycle strategies, with varying triggers for these lifecycle interventions depending on the asset type.

For asset needs investment analyses, the tool analyzes the asset portfolio and the various lifecycle interventions against a funding scenario with budget allocations for each asset category and forecasts how assets will degrade and be scheduled for renewal or replacement over time.

The resulting forecast summarizes the cost of annual lifecycle activities and the condition profile of the asset portfolio year over year. Different investment scenarios can be run to demonstrate the impact different investing strategies have on the state of good repair of the assets and, therefore, on their continued ability to deliver service. Refer to **Section 6.0** for different investment scenarios.

5.2 Risk Management Strategy

Effective asset management includes a risk management strategy. In the context of asset management, risk is usually described as the uncertainty of achieving the desired level of service within the asset portfolio (or service area). Risk can include exposure to unwelcome service outcomes, while risk mitigation often includes interventions such as labour and investment input. Risk exposure for each asset is assessed to prioritize the limited resources available for interventions, such as directing maintenance activities, capital investments to meet service targets, or refining service targets. Asset Risk Exposure is used to inform target investment needs required to mitigate measurable risk factors against LOS targets.

The relationship between risk and service is captured in the framing question that establishes the risk perspective: **"What is the risk of failing to deliver the intended service?"**

5.2.1 Measuring Risk

By systematically addressing the risks associated with the City's assets, the City can enhance its resilience, protect its valuable resources, and ensure the continuity of its operations. The purpose of this section is to describe how the City's risk frameworks can be used in day-to-day decision-making to prioritize resources and avoid unplanned asset failure. Risk management involves identifying and assessing potential risks and uncertainties while planning ways to avoid or mitigate risks from climate change, natural disasters, public safety threats, and aging assets. The goal is to provide a structured risk framework for understanding and addressing risks that could impact the achievement of objectives. Effective asset management incorporates these factors and the concept of infrastructure "criticality" when evaluating the effectiveness of competing alternatives. The risk exposure formula is often expressed as the product of the Likelihood of Failure (LoF) and the Consequence of Failure (CoF).

In risk management, this formula, illustrated in **Figure 5-4**, is commonly used to quantify the potential impacts of a risk event:

Risk Score = Likelihood of Failure X Consequence of Failure

Figure 5-4: Calculation of Risk Formula

5.2.2 Likelihood of Failure (LoF)

The factors that contribute to the likelihood of failure (LoF) consider reasons for asset service performance to become either unpredictable or contribute to service failure. At the level of an individual asset, the LoF factors may contribute to individual asset failure or unusual performance degradation. An example includes environmental factors such as asset exposure to flooding, contributing to accelerated performance deterioration. The likelihood measurements can include categories such as:

- **A:** Condition of the asset;
- **B**: Performance (reliability); and
- **C:** Exposure of the asset (vulnerability to climate change).

By separating condition and performance as two separate factors, there is an opportunity to consider assets in poor condition that may still be performing well, compared to those that are not performing, as well as good condition assets that may not be reliable.

The asset exposure, such as climate change, brings into consideration assets that are vulnerable to external stressors, including both the natural environment (e.g., climate change scenarios such as intense rainfall, increased temperatures, extreme weather, and drought) as well as operational exposure (e.g., increased user demand, abnormally harsh or difficult service conditions, etc.). The Exposure (climate change) rating can include any mitigation activities in the scoring which

reduces the risk and lowers the score. In consideration of these factors, it is assumed that the level of the organizing categories (A, B, and C above) is equally weighted in the determination of the likelihood of failure. It should be noted that using three independent organizing categories for collecting likelihood metrics can be considered analogous to a triple bottom line assessment for the likelihood risk axis while not meeting the ordinary understanding described in the Brundtland Commission (World Commission on Environment and Development, 1987).

5.2.3 Consequence of Failure (CoF)

The consequence of failure (CoF) methodology is a systematic approach used to assess the potential impact or consequences associated with the failure of the asset system. Similar to the LoF consideration, the system consequence can be considered at the level of impact due to individual asset failure. The objective is to understand the severity of outcomes that may result from a failure event and to inform decision-making regarding risk mitigation and management strategies through benchmarking of consequence metrics at the asset level. The triple-bottom-line is a sustainability framework that considers not only financial considerations (economic), but also social and environmental aspects. The Risk framework assesses the CoF within each of these triple-bottom-line (TBL) dimensions in a structure aligned with the conventional interpretation of TBL:

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

5.2.4 Risk Catalogue Development

A risk catalogue was developed with City staff based on a background review of previous risk frameworks developed in the 2021 AMP and considered data available to inform potential factors in developing both LoF and CoF scores for assets within each of the 11 asset service categories.

The catalogue primarily focuses on the CoF for the risk framework with some preliminary consideration of LoF as an outline for future improvement to risk measurement. Asset condition was identified as the primary factor for LoF scoring in this iteration of the AMP, but consideration of additional measures, as described previously, will be explored in future iterations.

The metrics, factors and scoring frameworks used to derive CoF scores varied between asset categories in some instances and were consistent in others. Data availability played the largest factor in metric definition and scoring methodologies. The decisions on scoring were made on a case-by-case basis with consideration for the impact that they have on the overall asset inventory. This decision stems from the fact that the City will be using the risk catalogue to prioritize investments within asset services and will not be used to inform budget allocation between asset services.

The risk catalogue includes both the likelihood of failure (LoF) and consequence of failure (CoF) metrics measured for each asset within the service areas.

Risk was incorporated into the City's investment needs analysis through a prioritization of capital investment needs based on the risk score of an asset.

5.2.5 Current Risk Summary

The current risk summary is presented in **Figure 5-5** for corporate risk rating by replacement value. Nearly half of the overall corporate assets are in Low-risk rating (weighted by replacement value), with 6.3% in High-risk and 0.14% in Extreme-risk which has a replacement value of $10 million. See **Figure 5-6**, which displays risk rating by replacement value for each asset service area.

Figure 5-5: Risk Rating by Replacement Value – Overall Corporate

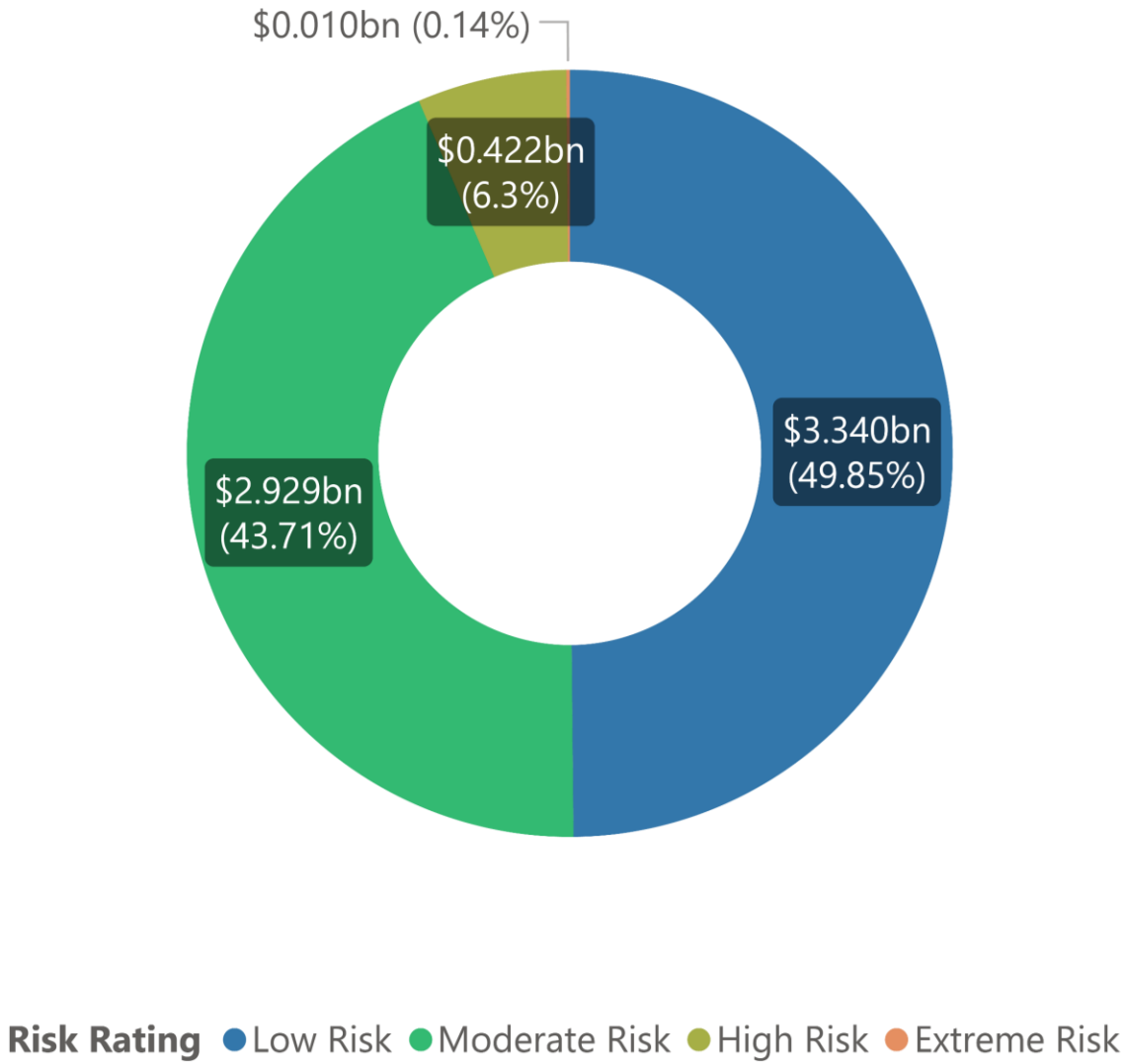
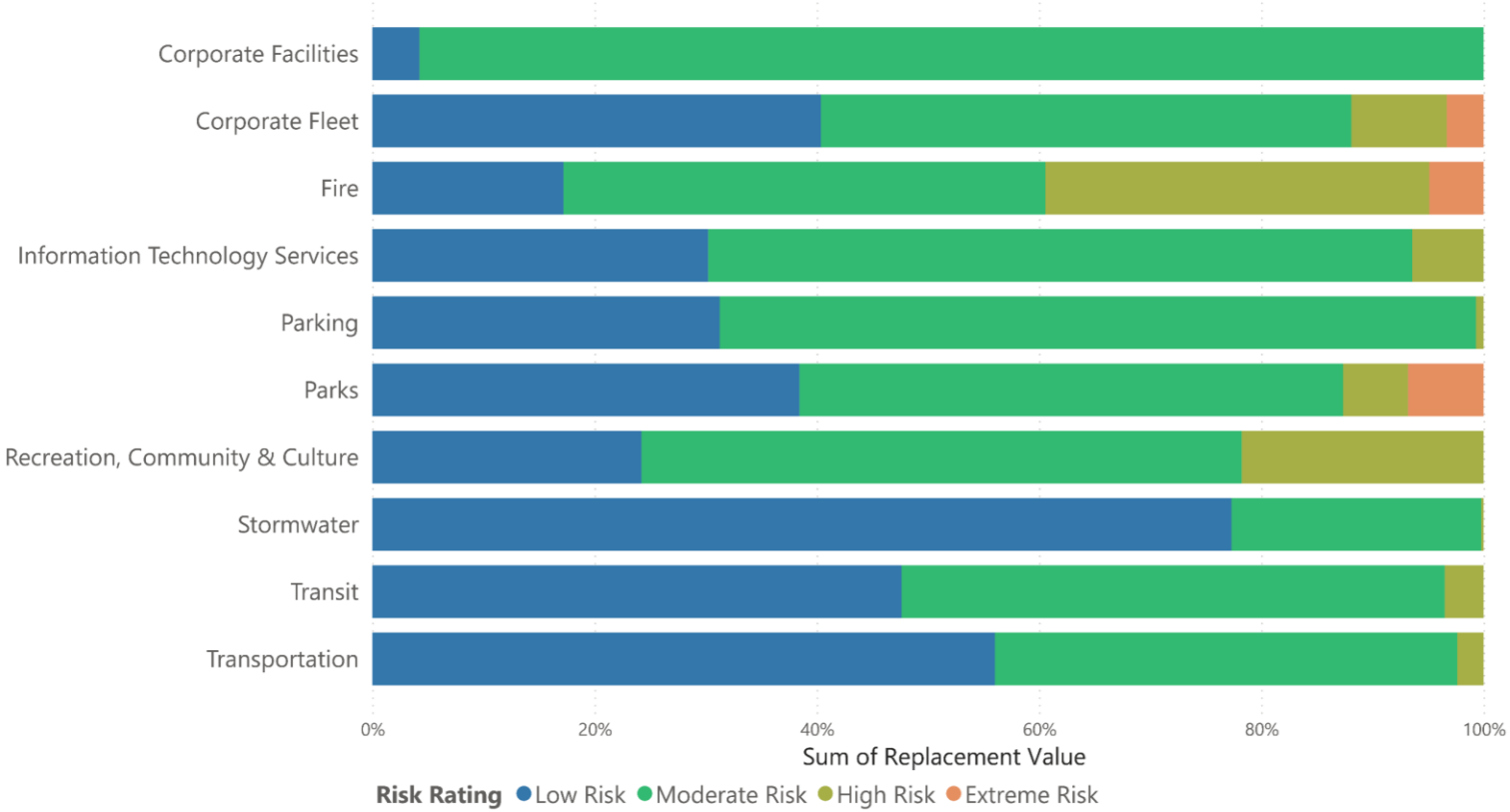


Figure 5-6 Risk Rating by Replacement Value – Service Areas



5.3 Climate Change Considerations

As a part of the City's strategic objective of being a Healthy and Greener City, the City recognizes that climate change is a significant risk that needs to be addressed. In 2019, Burlington City Council declared a Climate Emergency, highlighting the need for climate change action and directing staff to consider climate change as part of future plans and actions. Later, in 2019, a net-carbon-neutral goal for 2040 for corporate emissions was approved in the Strategic Plan, and then in 2020, a community-wide emission goal for 2050 was approved in the Climate Action Plan.

In 2021, as a key step in preparing a climate adaptation plan (Climate Resilient Burlington), staff prepared a Climate Projections report for the Council highlighting the "warmer, wetter & wilder" climate we anticipate in the future. By 2040, the City aims to achieve increased energy efficiency, protect the natural environment, and mitigate climate change impacts. This will be achieved through numerous actions and measures of success identified in the Climate Action Plan and the 2023 Green Fleet Strategy. Recognizing the need for adaptation alongside mitigation, the City approved the **Climate Resilient Burlington Plan** in July 2022. This plan addresses the impacts of a changing climate - specifically, the increasing frequency of **warmer, wetter, and wilder weather**. It identifies 32 actions across five themes: Resilient Built and Natural Infrastructure, Thriving Natural Environment, Health and Well-Being, Disaster Resilience, and Strong and Resilient Economy. The plan focuses on managing the highest projected local risks and building community resilience over the next decade.

Asset management-related actions were identified in the Climate Resilient Burlington Plan, and work completed thus far is summarized in **Table 5-2**, supporting Theme 1: Resilient Built and Natural Infrastructure.

Table 5-2: Asset Management-Related Actions in Climate Resilient Burlington Plan

Relevant Actions in Climate Resilient Burlington Plan (Theme 1)	Asset Management-Related Work Completed
Action1-1: Expand natural asset data and incorporate priority natural assets into Burlington's Asset Management Plan	City staff have begun the preparation of a Natural Assets Roadmap through a partnership with Intact Public Entities through its Natural Assets Initiative to build a high-level natural AM roadmap to start integrating natural AM considerations into overall AM practices. The project will be completed in 2025.
Action 1-2: Integrate future climate impacts in Burlington's Asset Management Plan for prioritized asset categories and assess long-term infrastructure funding requirements.	City staff from asset management, linear assets, finance, and sustainability participated in a pilot cohort with 12 municipalities across Canada with support from the Canadian Network of Asset Managers (CNAM) and a consultant to operationalize climate change in asset management policies and programs.

Within the AMP, climate change is acknowledged where possible as a potential source of risk of impacts to City infrastructure and the services they provide. Stormwater assets play a key role in adapting to the effects of extreme weather events. Understanding the long-term funding requirements for these assets and the impacts on the level of service they provide helps to support the City in managing the effects of climate change.

It is worth noting that while most of the infrastructure included in this AMP is considered 'grey,' i.e., built or engineered structures and networks such as roads, sewers, and facilities, some green infrastructure assets have been included. These include stormwater management ponds, oil & grit separators, a rain garden, creek infrastructure including erosion control features and the urban forest. These green assets help protect our natural environment by mimicking the natural hydrologic cycle and providing additional stormwater control, filtration, and infiltration. Lessons and information gained from the Grindstone Creek Municipal Natural Asset Initiative (MNAI) pilot project in partnership with Conservation Halton will further enhance how the City continues to build green infrastructure into its Asset Management Program.

5.4 Growth

As the City expands, its growth will impact existing service levels and assets. It is crucial to understand how the City's growth plans will affect the existing assets, be it positively or negatively. By evaluating the effects of this growth, the City can proactively strategize and align its asset management of existing infrastructure with future plans to support growth.

Although asset management focuses on how to manage existing infrastructure, O. Reg. 588/17 requires consideration of increases in demand caused by population and employment growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets. See the excerpt from the regulation (Section 6.(1) 6.) in the text box.

For the review of growth, there have been some growth-related assumptions and potential impacts on the lifecycle of the assets, as shown in
Table 5-3.

> For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,
>
> 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.

Table 5-3: Growth-Related Assumptions and Potential Impact to Lifecycle

Service Area	Growth Impact Assumptions	How Assumptions Relate to the Lifecycle of the Assets
Transportation	Increased traffic and a greater demand for transportation services (operations and capacity). Continued growth is expected to lead to further development.	Anticipated increases in road maintenance costs and capital expenditures for new roads. Operational costs for network collection and expansion may also rise.
Stormwater	Increased service demands and an expansion of the stormwater network. Urbanization is expected to lead to increased storm volumes.	Potential increase in capital plan budget due to increase in service network size and capacity.
Recreation, Community, and Culture	Increased demand for services, potentially requiring extended operating hours or expanded capacity to meet service needs. This will also necessitate an increase in internal staffing to maintain facilities.	Potential increases in capital and maintenance costs for facilities and potential increases in operational costs to maintain assets.
Urban Forestry	Increase in service demands in operations and maintenance due to increased assets (canopy cover).	Potential increase in capital expenditures for services and maintenance.
Parks	Increased demand for park operations and maintenance due to an increased number of assets. This includes a greater need for service based on demands and increases in internal staffing to maintain amenities.	Potential increases in capital expenditures for acquiring additional assets to meet service needs and potential increased operational costs due to the increasing number of assets.
Corporate Facilities	Increased facility usage and changing service demands.	Anticipated increases in capital expenditure for facility development in response to growth, and higher

Service Area	Growth Impact Assumptions	How Assumptions Relate to the Lifecycle of the Assets
		operating costs for facility services and maintenance.
Transit	Increased demand for transit services, potentially requiring extended operating hours or expanded capacity over greater distances. This will also necessitate an increase in internal staffing to maintain equipment.	Potential increases in capital expenditures for acquiring additional transit assets and higher operational costs for maintaining the fleet.
Fire	Increased service demands requiring expanded operations or capacity over greater distances. This will also necessitate increases in internal staffing to maintain equipment.	Potential increases in capital expenditures for acquiring additional assets and facilities to meet service needs and potential increases in operational costs to maintain equipment and fleet assets.
Parking	Increased demand for parking services, requiring a greater number of assets to ensure reliable service and support growth. This includes the need for additional lots or structures to serve a growing community.	Potential increases in capital costs to address the need for more assets, and higher operational costs due to an increase in the overall parking network size.
Information Technology	Increased demand for IT services, impacting operations or service capacity. A higher risk of cybersecurity is also anticipated due to the increased number of assets required to provide service.	Potential increased operational costs due to an increase in the network size.
Corporate Fleet	Increased demand for fleet services, potentially requiring extended operating hours or expanded capacity over greater distances. This will also necessitate increases in internal staffing to maintain equipment.	Potential increases in capital expenditures for acquiring additional assets to meet service needs and potential increases in operational costs to maintain fleet assets.

5.4.1 Growth Framework

Master plans and studies completed by the City will continue to incorporate any growth forecasts and, where possible, any associated infrastructure needs and financial implications.

It is important to note that Council-approved planning documents do not infer that funding has been secured for the growth projects, which can only be confirmed once the growth projects are approved within the City's budgets.

5.4.1.1 Baseline

The baseline for growth predictions for the lifecycle costs analysis relies heavily on the approved or endorsed master plans developed in anticipation of the various growth impacts (as summarized in **Table 5-3**). The outcome of master planning processes includes the outline of proposed projects for adapting to growth, including specific asset investments that will result in an increase in the overall asset value held by the City. The considerations for growth were adapted from these master plans, including:

- Strategic Plan (2015-2040, Updated May 2021);
- 2024 Multi-Year Community Investment Plan (MYCIP);
- 2024 Live and Play Plan (LPP) report;
- 2024 Urban Forestry Master Plan;
- 2023 Integrated Mobility Plan (IMP);
- 2023 Parks Provisioning Master Plan (PPMP);
- 2022 Fire Master Plan; and
- Transit 5-Year Business Plan (2020-2024).

The 2024 Development Charges Background Study (DC Study) for the City of Burlington by Watson and Associates captures most of the identified asset investments that will result in projected increases in the total replacement value of assets held by the City. Most growth projects were derived from the DC Study report; however, it is pertinent to note a

slight difference between the service areas in the study and the asset hierarchy under consideration. Specifically, the DC Study encompasses Services Related to a Highway, Stormwater Drainage Services, Fire Protection Services, Parks and Recreation Services, Library Services, and Transit Services. The main effort was required to differentiate between a Parks related project or a Recreation, Community, and Culture project correlating to the asset hierarchy.

The Strategic Plan (2015-2040) identifies growth projects related to several service areas. Extracted from the Urban Forestry Master Plan includes an intention to provide a percent of growth over a period of time. These metrics were converted to a capital value over the same period for the purpose of estimating the asset inventory value increase for growth-related lifecycle costs.

The City's MYCIP (2025-2034), updated in 2024, outlines potential growth-related capital investments totalling $651 million over the 10-year planning period. The MYCIP consolidates projects from various strategic documents, including the Bateman Adaptive Re-Use, Integrated Mobility Plan, Parks Provisioning Plan, MTSA Future Development, Cumberland Expansion Plan, Fire Master Plan, and Land Planning initiatives.

Through correlation and comparison with the DC Study, all projects related to the Bateman Adaptive Re-Use, Parks Provision Plan, MTSA Future Development, and Cumberland Expansion Plan were included as they represent increases in the asset replacement value. Additionally, four specific projects from the Fire Master Plan that were not part of the DC Study were incorporated. Land acquisitions are not funded through the Infrastructure Renewal Reserve Fund and are therefore not considered further for growth-related asset lifecycle cost analysis. The total capital investment and its timeframe may have implications for the City's capital reserve fund and will be noted in the financial assessment.

The 2024 LPP outlines recommended projects for all parks and recreation assets. It is important to note that most of these projects involve retaining consultants for studies and designs rather than direct capital investment in the asset lifecycle. Consequently, a total of thirteen projects within the LPP report were identified as being directly associated with new or expanded assets. Furthermore, the LPP report categorizes these asset-related growth projects as either short-term (2024-2034) or medium-term (2024-2041).

5.4.2 Growth Projections

Future costing for growth projects was based directly on all projects identified. To maintain a conservative financial outlook, the highest estimated cost (gross capital expenditure) for each project, as detailed in all reports, was used for all projections. Notably, all cost estimates within the LPP report were presented as ranges, and to ensure a conservative financial approach, the upper limit of each range has been adopted. Project start years were aligned based on the timeline projects were initially planned. All projects planned before 2026 were scheduled to begin in 2026; short-term LPP projects were assigned a 2026 start, and short-medium-term LPP projects a 2030 start.

For projects originating from the DC Study that included a range of potential implementation years, the associated costs were strategically staggered to start at various years across the various ranges. This approach aimed to distribute the fiscal impact of these projects more evenly over the projection period, preventing large fluctuations in annual expenditure and promoting a more consistent level of capital investment in the forecast.

These projects represent a cumulative increase in the held asset value in many of the asset services, as summarized in **Table A-4-1** (Appendix A). The background documents did not identify asset acquisition or increases in held value for several asset services, including corporate facilities, parking, information technology services, or corporate fleet. Consequently, the projected lifecycle obligations for these asset services are omitted in the lifecycle costs analysis of the operating forecast metric (**Section 5.4.3.2**) and the capital forecast metric (**Section 5.4.3.3**).

5.4.3 Lifecycle

5.4.3.1 Methodology for Lifecycle Forecast Metric

This section outlines the methodologies employed to determine the Percentage of Capital Replacement Value per annum (%CRV/a) for both operating and capital costs. Understanding these metrics is fundamental to assessing the annual financial requirements relative to the capital replacement value of the asset services. The subsequent subsection details the systematic approach undertaken for each cost category. The capital replacement cost was used for both the operating

and capital costs analysis. The total capital replacement cost of the asset services was established by combining the budget categories and their respective replacement values. **Table 5-4** represents the 2024 Q4 Capital Replacement Value, serving as the baseline for both analyses.

Table 5-4: 2024 Capital Replacement Value

Service Area	Replacement Value (2024)
Transportation	$2,726,131,000
Stormwater	$1,488,941,000
Recreation, Community and Culture	$1,151,483,000
Urban Forestry	$430,618,000
Parks	$403,808,000
Corporate Facilities	$252,083,000
Transit	$246,146,000
Fire	$160,392,000
Parking	$148,037,000
Information Technology	$88,826,000
Corporate Fleet	$51,915,000

5.4.3.2 Operating Expenditures Costs

The determination of the %CRV/a for operating costs involved a systematic approach to accurately reflect the annual operating costs relative to the capital replacement value of the asset services. This methodology is outlined below:

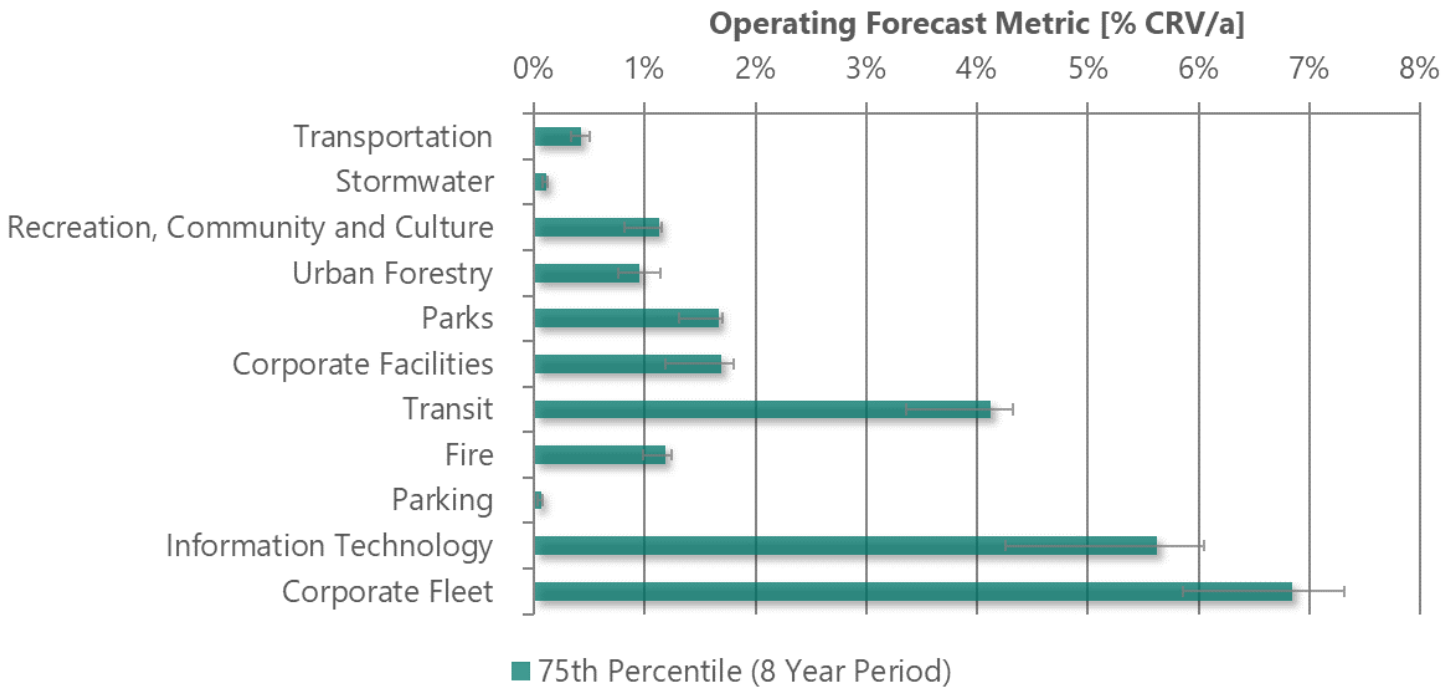
- **Operating Cost Data Collection:** Operating summaries for the period 2016-2023 were utilized. These summaries were carefully aligned with the asset services corresponding to the capital costs.
- **Deflation Adjustments:** To accurately calculate the %CRV/a, it was essential to account for inflation and deflation for the 2016-2023 period. Using the Statistic Canada Table for Building Construction Price Indexes, Percent Change,

and Quarterly for Non-residential buildings, the 2024 Q4 Capital Replacement Cost was adjusted to reflect the equivalent costs in prior years. Given that the provided costs were assumed to represent 2024 Q4 values, and the baseline for the price indexes was 2023, the Q3 price index for each respective year from 2016 to 2023 was used to deflate the operating costs. This approach was chosen to provide a conservative estimate, reflecting the higher end of average price fluctuations.

- **%CRV/a Calculation:** With the historic operating costs accurately deflated to their respective year values and the known operating costs for each year, the %CRV/a was calculated. The %CRV/a for each year was determined by dividing the annual operating costs by the corresponding year's deflated capital replacement cost, then multiplied by 100 to get a percentage.

This methodology ensures that the %CRV/a reflects the true relationship between annual operating expenditures and the adjusted capital replacement value, providing a reliable basis for asset management and financial planning. **Figure 5-7** represents the 75th percentile per service area for years from 2016-2023.

Figure 5-7: Operating Forecast Metric (by Service Area)



5.4.3.3 Capital Forecast Metric

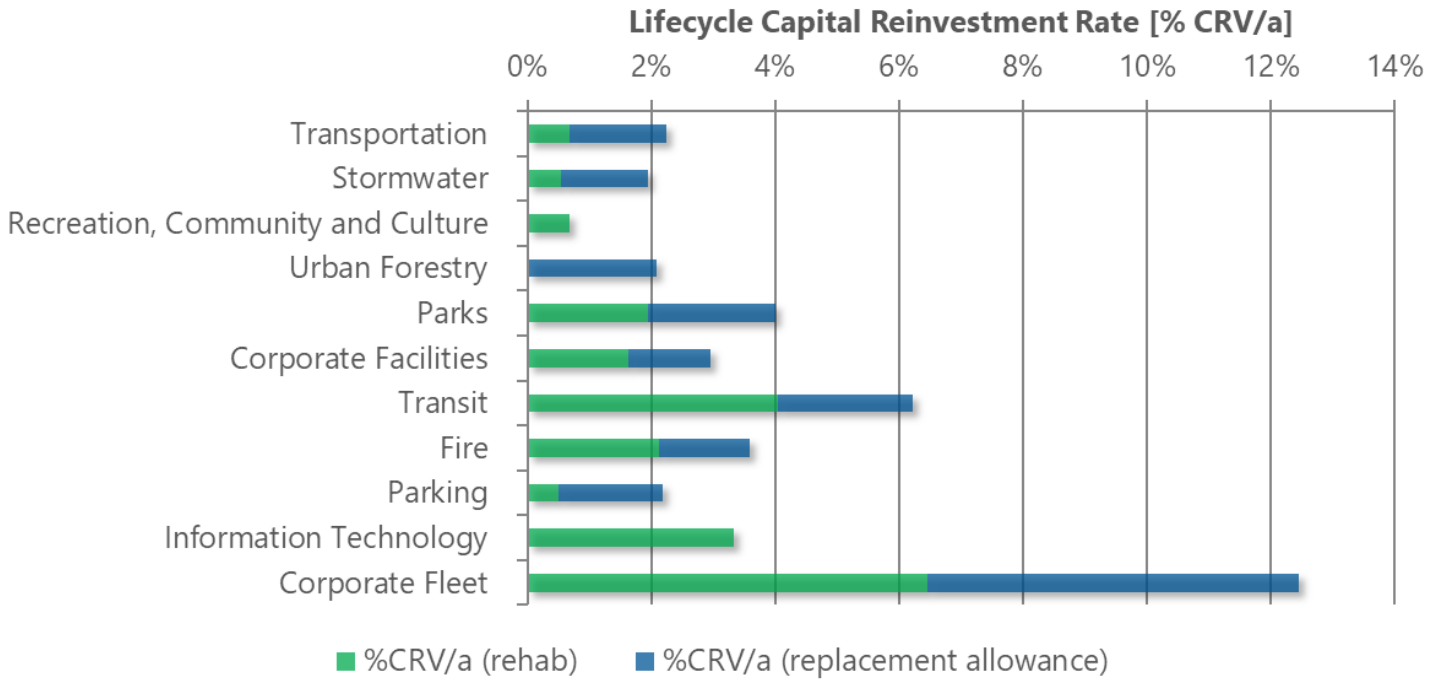
The determination of the %CRV/a for lifecycle capital expenditures involved a modified approach building upon the methodology established for operating expenditures. This adaptation aimed to accurately reflect the annual capital investment needs, encompassing both replacement and rehabilitation activities, relative to the capital replacement value of the asset services. The detailed methodology is outlined below:

- **Capital Expenditure Budget Data Collection (2023-2025):** Capital expenditure budget summaries for the period 2023-2025 were utilized. These budgets included anticipated costs for both asset rehabilitation and replacement projects for infrastructure renewal. These budget figures were carefully aligned with the corresponding asset services identified in the capital replacement cost baseline.
- **Deflation Adjustments:** To ensure comparability with the 2024 Q4 Capital Replacement Cost baseline, the budgeted capital expenditure costs for 2023 were adjusted for inflation/deflation. This adjustment utilized the same methodology as outlined in the OpEx methodology above, employing the Statistic Canada Table for Building Construction Price Indexes, Percent Change, Quarterly for Non-residential buildings and the Q3 price index for 2023 relative to the 2023 baseline. The 2024 and 2025 budget figures were in near-current dollars and were not deflated.
- **Determination of %CRV/a for Rehabilitation:** Recognizing that the capital expenditure budget includes both replacement and rehabilitation costs, a 75th percentile approach was applied to the calculated %CRV/a to represent the rehabilitation component. This statistical measure was chosen to capture a sizable portion of the planned rehabilitation activities within the overall capital expenditure budget. The annual %CRV/a representing rehabilitation was calculated by dividing the annual budgeted capital expenditure (deflated for 2023) by the corresponding year's capital replacement cost baseline and then identifying the 75th percentile across the 2023-2025 period for each asset service.
- **Calculation of %CRV/a Replacement Allowance:** The annual replacement allowance was determined by dividing the Capital Replacement Value for each asset service by its average expected useful life. This calculation provides an annualized estimate of the capital required for the eventual replacement of the asset.

- **Determination of %CRV/a Lifecycle CapEx Costs:** The %CRV/a for lifecycle capital expenditure costs was calculated by summing the %CRV/a for rehabilitation and the %CRV/a replacement allowance for each asset service.

This methodology provides a comprehensive understanding of the annual capital investment required to sustain asset services over their lifecycle, encompassing both proactive rehabilitation efforts and eventual replacement needs relative to their capital replacement value. The utilization of the 75th percentile for rehabilitation provides a robust estimate of these essential capital expenditures. **Figure 5-8** represents the overall lifecycle capital cost forecast metric, including both rehabilitation and asset replacement allowance. The asset replacement allowance is based on an allowance for replacing the asset value over the weighted average service life. The reinvestment rate calculation for portfolio replacement allowance is treated in more detail in **Section 6.0**.

Figure 5-8: Lifecycle Capital Cost Expenditure Forecast Metric (by Service Area)



5.4.4 Lifecycle Forecast Metrics

The acquisition of new assets follows population growth demands. These growth-related projects—often identified through master plans, secondary plans, and official community plans—are summarized in planning documents in which the asset is identified with the acquisition year (or window) and a cost as described previously. The acquisitions are captured year-over-year as a cumulative increase in the asset service capital replacement value (CRV) over the present baseline value. These growth asset costs then served as a basis for calculating the future Operating Expenditure (OpEx) and Capital Expenditure (CapEx) lifecycle costs. This calculation was performed by applying the determined %CRV/a to the

projected growth project costs, providing an estimate of the ongoing financial implication of these new assets. The capital and operational expenditures forecast metrics are summarized in **Table 5-5** for each service area.

Table 5-5: Capital and Operational Expenditures Forecast Metric

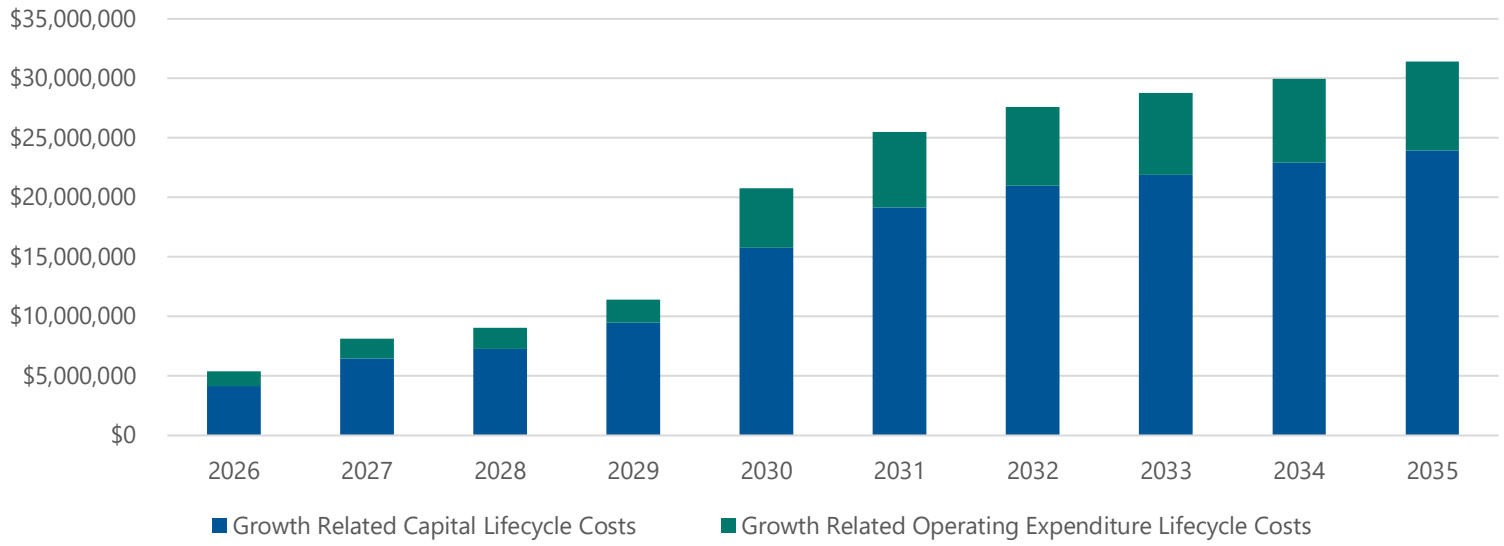
Service Area	Operating %CRV/a	Capital %CRV/a
Transportation	0.42%	2.25%
Stormwater	0.11%	1.94%
Recreation, Community and Culture	1.13%	1.88%
Urban Forestry	0.95%	2.07%
Parks	1.67%	4.01%
Corporate Facilities	1.69%	2.96%
Transit	4.12%	6.22%
Fire	1.19%	3.59%
Parking	0.07%	2.17%
Information Technology	5.62%	13.35%
Corporate Fleet	6.84%	12.44%

A summary of the cumulative CRV increase for each service area, based on background document review, is provided in **Table A-4-1** (Appendix A). This is followed by the corresponding operating and capital lifecycle cost allowances related to these growth-related asset acquisitions in **Table A-4-2** and **Table A-4-3,** respectively. The affordability of the growth accommodation through new asset acquisition and related operating and capital expenditures should be considered as part of an ongoing integration with asset management and capital planning. The summary of the growth-related costs over the next 10-years is presented in **Table 5-6**. See **Figure 5-9** for the growth-related capital and operating lifecycle costs.

Table 5-6: Summary of Growth Related 10-Year Projections

Year	Cumulative Asset Replacement Value	Operating Expenditure Lifecycle Costs	Capital Lifecycle Costs	Total
2026	$160.1 M	$1.2 M	$4.2 M	$165.5 M
2027	$256.1 M	$1.7 M	$6.5 M	$264.3 M
2028	$299.4 M	$1.8 M	$7.3 M	$302.4 M
2029	$402.3 M	$1.9 M	$9.5 M	413.7 M
2030	$577.8 M	$5.0 M	$15.8 M	$598.5 M
2031	$674.8 M	$6.4 M	$19.2 M	$700.3 M
2032	$754.8 M	$6.6 M	$21.0 M	$782.3 M
2033	$792.9 M	$6.8 M	$21.9 M	$821.6 M
2034	$835.9 M	$7.1 M	$22.9 M	$865.8 M
2035	$883.4 M	$7.5 M	$23.9 M	$914.8 M

Figure 5-9: Growth Related Capital and Operating Lifecycle Costs (2026 to 2035)



5.4.5 Growth Planning Recommendations

Lifecycle Forecast Metric: The forecast metric used to capture growth-related lifecycle costs is based on a ratio of reinvestment measured against the asset replacement value. The % CRV/ unit rate metric is both a forecast metric used to estimate reinvestment as operating and capital, as well as a potential benchmark.

Benchmarking Outcomes: Comparison of actual expenditures year-over-year using the % CRV/a metric will provide the City with a means of measuring resource allocation into the asset service areas versus outcomes measured both as level of service delivery as well as risk. For instance, changes in % CRV/a reinvestment against asset condition profiles may provide a useful benchmark against expected versus actual performance, a means of validating predicted model outcomes in the EAMS-DSS tool, and strategic budget considerations. These considerations can be bundled into the affordability lens as it relates to both growth, as well as existing asset inventory obligations.

Incorporation of Growth into Financial Strategy: The growth-related capital and operating expenditures summarized in this section are incremental to the regular asset-lifecycle expenses. The financial strategy may include reserve funding consideration in the long term for both the existing asset obligations as well as the projected lifecycle needs for growth-related assets. Annual revision of projected growth assets can be achieved by maintaining both the forecast metric benchmark, as noted above, as well as a comprehensive list of capital purchases and divestments that will impact the asset service inventory replacement values.

Recommendation (Shift Strategy): Where the City has flexibility in when to build the growth-related infrastructure, it will continue to consider a "shift strategy" to delay the growth-related project into the future. By regularly reviewing the actual growth compared with the projected growth, the City can plan the delivery of growth-related infrastructure to match the reality of growth. As part of the shift strategy, the City can time the growth projects to align with the end-of-useful life replacement projects in a project bundle. This can save capital costs, as well as minimize construction frustration for the community.

5.5 Burlington Housing Strategy Alignment

Burlington's Housing Strategy was approved by the Council in June 2022. This strategy creates a road map and acts as a guiding document for housing needs in the City of Burlington. It will help the City to work towards meeting the housing needs of the community and move us closer to reaching our Vision for housing in Burlington.

The Housing Strategy identifies 12 recommended actions that the City and other strategic decision-makers can take to increase housing options across the City. It provides a list of priority actions, quick wins, and an implementation plan to put the Housing Strategy into action.

Recognizing how Asset Management relates to the Housing Strategy is important, as that alignment ensures that infrastructure can support current and future housing needs during a period of intensifying housing demand and affordability crises.

Future initiatives and alignment strategies for Growth and Demand Management are referenced in **Section 7.0**.

6.0 Asset Investment and Financing Strategy

The City of Burlington aims to align infrastructure investments with strategic, growth and sustainability goals, while meeting proposed Levels of Service. The asset investment and financing strategy outlines the approach the City will take to fund the lifecycle costs of its infrastructure assets required to meet the proposed LOS. This will ensure reliable service delivery through sustainable financial planning, aligned with the City's long-term AMP. An overview of the City's budget process is provided below, as a critical component of service delivery.

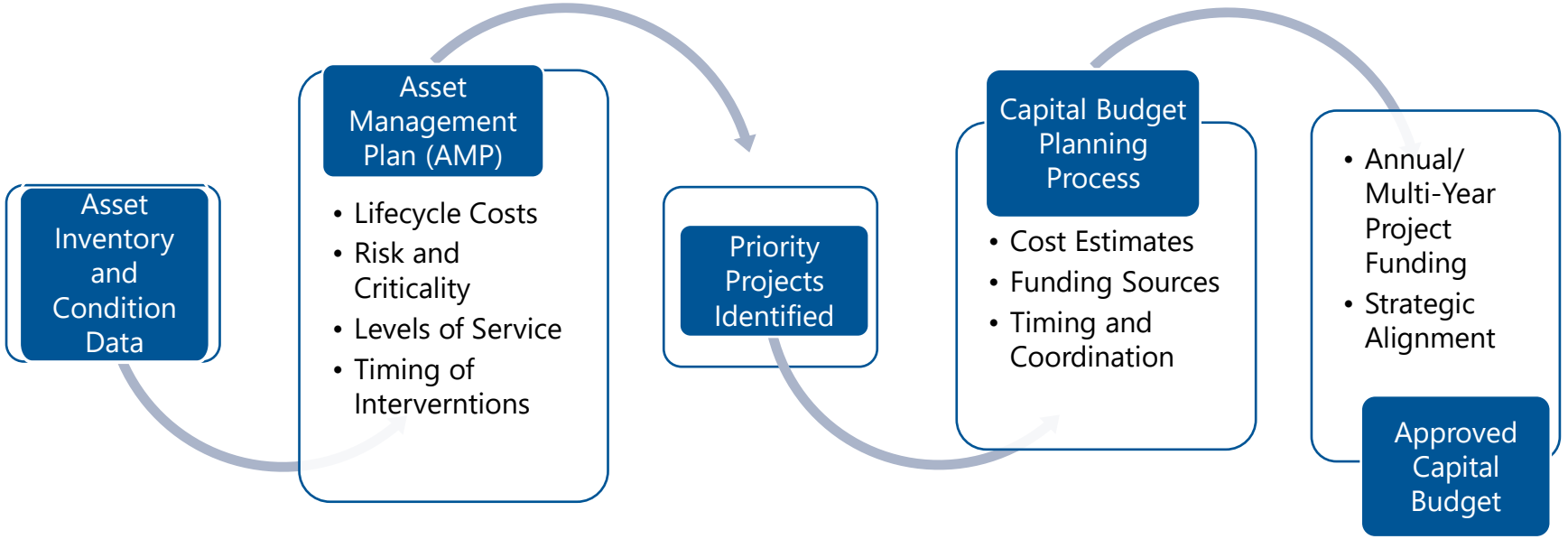
6.1 Annual Budget

The City undergoes a process to develop budgets that support essential operations and deliver the programs and services required to maintain the community's quality of life. The City's budget is established to allocate funding to construct infrastructure assets and provide services (including salaries, equipment, and materials to provide services). The budgets consider both costs (expenditures) and available funding (revenues), which are separated into two components:

1. **Operating Budget:** Used to support the day-to-day activities and functions which provide services to Burlington's citizens, and to operate and maintain the City's existing infrastructure. This includes items such as staffing, fuel, materials/supplies, and contracted services costs; and
2. **Capital Budget:** Used for the acquisition and lifecycle renewal of infrastructure assets to support services provided to the community. The Capital Budget and Forecast is a tactical financial plan that identifies investment needs and funding for infrastructure renewal, growth, and new/enhanced priorities. The budget covers a 10-year period and is reviewed annually to reassess project scope, timing, and cost, then re-prioritize when required.

The City follows a year-round annual budgeting process that leads to the development, review, and approval of the Operating and Capital Budget. The Capital Budget process (**Figure 6-1**) is supported by the EAMS-DSS analysis and is used to inform the Asset Management Plan and financial strategy.

Figure 6-1: Asset Management Informing the Capital Budget and Forecast



In 2023, the City underwent a change in its financial system. Due to the transition, the data for 2024 and 2025 operating expenditures by asset service areas were not available. Using the %CRV/a methodology for forecasting operating costs employed in the previous Growth forecast in **Section 5.0**, the 2024/2025 estimated annual operating expenditures are provided in **Table 6-1**.

Table 6-1: Historical and Estimated Operating Expenditures by Service Area

Service Area	2022 Actual	2023 Actual	2024/2025 Estimated
Transportation	$8,170,911	$8,629,951	$11,466,000
Stormwater	$984,876	$1,244,484	$4,091,000
Recreation, Community and Culture	$9,158,964	$10,104,040	$4,260,000
Urban Forestry	$3,418,830	$3,566,693	$104,000
Parks	$5,498,465	$6,043,804	$9,992,000
Corporate Facilities	$2,948,901	$4,358,541	$6,744,000
Transit	$7,357,986	$9,909,917	$1,637,000
Fire	$1,516,465	$1,510,382	$1,909,000
Parking	$51,365	$53,670	$13,012,000
Information Technology	$4,580,295	$4,467,349	$3,551,000
Corporate Fleet	$2,826,150	$3,058,407	$4,992,000
Total	**$46,513,210**	**$52,947,239**	**$61,757,000**

The capital expenditures by service area for the year 2022, 2023 and 2024 are provided in **Table 6-2**.

Table 6-2: Historical Capital Expenditures by Service Area

Note: Urban Forestry is funded through Transportation and Parks.

Service Area	2022	2023	2024
Transportation	$20,930,872	$16,606,686	$22,531,529
Stormwater	$3,350,965	$7,582,294	$6,797,817
Recreation, Community and Culture	$7,519,752	$4,039,379	$6,679,457
Urban Forestry	$0	$91,555	$29,631
Parks	$5,311,634	$6,195,948	$5,472,824
Corporate Facilities	$4,974,009	$4,339,359	$4,999,402
Transit	$4,881,055	$4,384,400	$12,390,607
Fire	$1,655,951	$2,837,050	$2,821,857
Parking	$620,000	$350,147	$250,000
Information Technology	$3,014,778	$2,635,000	$3,165,000
Corporate Fleet	$2,532,882	$3,140,808	$2,248,458
Total	**$54,791,899**	**$52,202,627**	**$67,386,581**

Table 6-3: Forecasted Capital Funding Available by Service Area

Note: Urban Forestry is funded through Transportation and Parks.

Service Area	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Transportation	$24.4 M	$25.4 M	$27.6 M	$26.3 M	$33.1 M	$31.6 M	$36.6 M	$38.8 M	$37.9 M	$37.9 M
Stormwater	$7.4 M	$6.8 M	$6.6 M	$9.8 M	$8.5 M	$13.6 M	$10.8 M	$10.3 M	$10.0 M	$8.9 M
Recreation, Community and Culture	$9.1 M	$8.3 M	$8.3 M	$9.0 M	$9.3 M	$13.6 M	$6.7 M	$10.2 M	$11.2 M	$9.2 M
Urban Forestry	$0.3 M	$0.1 M	$0.1 M	$0.3 M	$0.1 M	$0.1 M	$0.1 M	$0 M	$0 M	$0 M
Parks	$9.2 M	$7.7 M	$8.8 M	$8.9 M	$9.8 M	$9.1 M	$8.9 M	$12.3 M	$13.4 M	$13.9 M
Corporate Facilities	$2.9 M	$4.7 M	$3.8 M	$2.7 M	$0.5 M	$2.0 M	$0.7 M	$0.5 M	$2.1 M	$0.5 M
Transit	$12.1 M	$4.6 M	$6.1 M	$5.2 M	$4.2 M	$5.8 M	$6.3 M	$5.1 M	$7.1 M	$8.1 M
Fire	$3.9 M	$3.6 M	$4.0 M	$5.8 M	$4.9 M	$5.2 M	$2.7 M	$7.1 M	$6.6 M	$17.6 M
Parking	$1.7 M	$1.2 M	$1.7 M	$0.9 M	$0.6 M	$2.1 M	$0.1 M	$0.1 M	$0.1 M	$0.1 M
Information Technology	$2.8 M	$4.6 M	$5.3 M	$6.1 M	$6.4 M	$7.1 M	$7.5 M	$7.7 M	$8.2 M	$9.0 M
Corporate Fleet	$3.7 M	$4.6 M	$1.6 M	$3.7 M	$5.7 M	$3.1 M	$4.1 M	$5.0 M	$4.0 M	$2.8 M
Total	**$77.5 M**	**$71.6 M**	**$74.0 M**	**$78.2 M**	**$83.0 M**	**$93.3 M**	**$84.5 M**	**$97.1 M**	**$100.6 M**	**$108.0 M**

Note: These values reflect the forecast of funding available to the capital infrastructure renewal program up to 2030. Typically, Burlington's budget is broken out by asset category, so some assumptions were made to align funding sources with the appropriate service area.

6.2 Approach to Proposed LOS

Having an understanding of forecasted funding available for capital renewal and replacement is critical in order to determine what LOS are expected in the future. Identifying the proposed future LOS requires weighing the willingness/ability to pay against the risks of not meeting service delivery expectations.

6.2.1 The "Big Table" Framework

The "Big Table" framework is the fundamental trade-off inherent in municipal decision-making regarding asset management and service delivery. This concept emphasizes the critical balance between addressing the State of Good Repair (SOGR) Backlog, which represents the accumulated deficit in asset maintenance and renewal deemed acceptable by the City, and the available capital budget allocated across various assets, reflecting prevailing affordability constraints.

Beyond direct financial investment, the "Big Table" encourages a broader consideration of strategies to mitigate service decline. This necessitates exploring alternative solutions and operational efficiencies to sustain or enhance service quality within existing financial limitations. Ultimately, effective asset management requires a continuous and thoughtful balancing act between addressing the repair backlog, managing capital budgets, and proactively seeking ways to maintain desired service levels for the community.

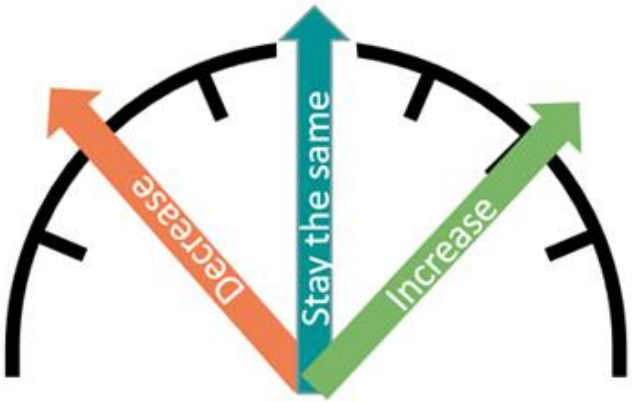
The establishment of clear proposed LOS floor targets is a critical step in operationalizing this decision-making process. By employing a standardized and concise set of LOS measurement dials across all asset service areas, the City can define the minimum acceptable levels of asset quality and reliability. These targets are not set in isolation but are directly informed by the financial affordability realities outlined in the City and Council's Asset Management Plans. Consequently, these standardized LOS floor targets provide a tangible benchmark that shapes the understanding of an acceptable state of good repair backlog within the "Big Table" Framework, ensuring that decisions regarding capital allocation are linked to maintaining essential service levels within realistic financial constraints.

6.2.2 Proposed LOS Dial

The LOS for assets is not static and can evolve over time through either intentional strategic decisions or because of operational realities. This dynamic nature means that the level at which services are delivered can be deliberated raised, maintained at its current state or may decline. Understanding the factors that influence these changes is crucial, promoting consideration of opportunities for proactive adjustments to the proposed LOS. Furthermore, it necessitates an evaluation of how different LOS targets impact financial resource requirements and the identification of potential obstacles that could hinder the desired service delivery outcomes.

The visual representation of the LOS dials in **Figure 6-2** indicates that a movement towards the right on the depicted scales signifies an increase in service levels, while a shift to the left denotes a decrease. It is critical to recognize the interdependent relationship between financial investment and LOS outcomes changes in one directly influence the other in determining the final service delivery state.

Figure 6-2: LOS Dial



6.2.3 Proposed LOS Pathways

In working sessions with the Service Areas, four proposed pathways were presented for consideration. **Figure 6-3** summarizes the four proposed pathways with their respected LOS dials, which correlate with service performance and spending requirements.

Figure 6-3: Proposed LOS Pathways

These distinct pathways identify the approach to managing and influencing the LOS of the City's assets:

Pathway 1: Maintain Current Spending and Monitor LOS: This approach involves continuing current spending levels while closely observing how key LOS metrics evolve over time. It acknowledges the inherent risk of potential LOS erosion if current spending is insufficient.

Pathway 2: Stabilize Current LOS: This pathway focuses on actively maintaining the current LOS by stabilizing key metrics. Achieving this may necessitate reallocating existing capital funds or securing additional funding to proactively address any downward trends. The primary goal is to preserve current service levels.

Pathway 3: Strategic LOS Reduction: This pathway proposes a deliberate reduction of LOS in specific asset sub-categories. This strategic move aims to address State of Good Repair deficits and/or reallocate resources to higher-priority areas, emphasizing resource optimization through a prioritization exercise.

Pathway 4: Targeted LOS Improvement: This pathway involves making strategic investments to improve LOS in specific asset sub-categories. This targeted investment is expected to result in improved key metrics, such as asset renewal ratios or regulatory non-compliance. The overarching goal is to address critical deficiencies and enhance service.

6.3 Asset Investment Needs Assessment

The City uses their EAMS-DSS tool in its asset investment needs analysis to forecast the state of the local infrastructure under various investment scenarios, as a predictor of asset service delivery.

A high-level summary of the EAMS-DSS components, process, and output is presented in **Table 6-4**.

To assess the financial implications of the various pathways and identify the proposed LOS, a "Big Table" workshop series was held with Burlington Senior Leadership members, representing the various asset service areas.

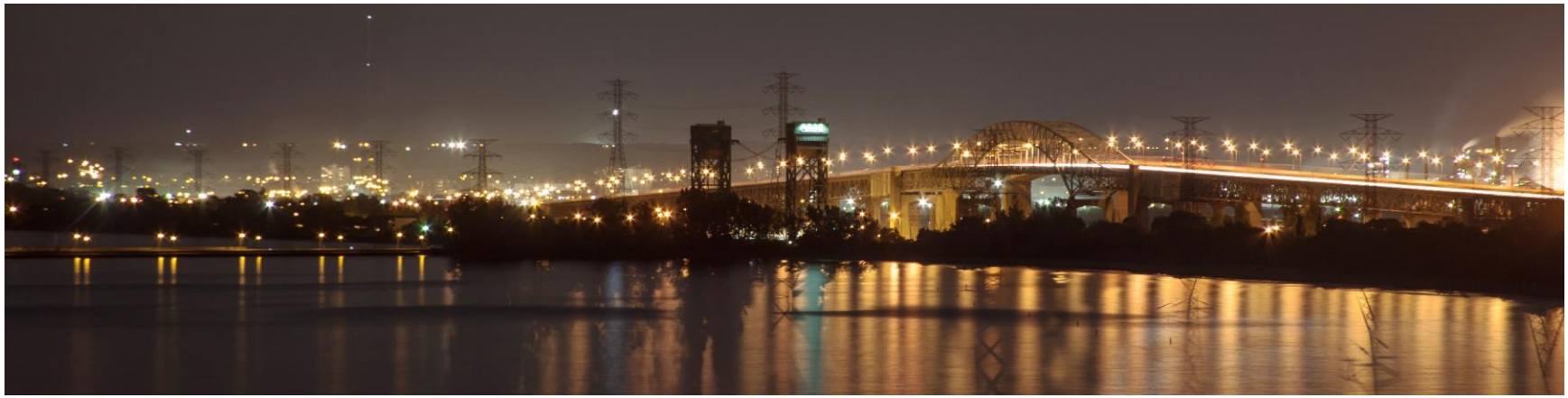


Table 6-4: High-Level Summary of the EAMS-DSS Inputs, Process and Outputs

EAMS-DSS Inputs	EAMS-DSS Process	EAMS-DSS Outputs
• Asset inventory (type, age, service life, condition, replacement value) • Lifecycle model (the cost and triggers for renewal and replacement activities, also referred to as "treatments") • Financial scenario (how much money is available per year)	• Using an optimized benefit analysis, the EAMS-DSS generates lifecycle models for assets within a service category based on need and available funding for every year of the analysis. • In any given year, assets that meet the requirements for any given renewal activity are analyzed and selected for treatment based on risk, benefit, and available funding. • In scenarios with constrained funding, assets with prescribed activities that cannot be funded are included in the backlog and remain eligible for treatment consideration in the proceeding years of the model, while continuing to degrade along the asset's degradation curve. • Assets selected for treatment in any given year are improved in condition or replaced with new ones and proceed through the rest of their lifecycle for the model to run. • When evaluating eligible treatments in a given year, the EAMS-DSS tool applies an algorithmic optimization process to select the combination of treatments that maximizes overall benefit relative to cost, using available data, treatment rules, and risk scores.	• For each model simulation, the EAMS-DSS generates year-by-year asset renewal types and costs, the resulting condition state for each asset in the model (treated and untreated), and any accumulated backlog. • By comparing scenario simulations, the projected condition profile for an asset category and class can be visualized for each year of the simulation, as well as the risk profile, total renewal costs and backlog.

It was decided to adopt standardized LOS metrics across the City's asset service areas for reporting at the corporate level. To be practical and effective, these standardized LOS metrics should be populated with financial and asset condition data that is readily available and dependable. As previously introduced in **Section 4.0**, the following three standardized LOS metrics have been selected to establish Proposed LOS targets:

1. Reinvestment Ratio (leading indicator);
2. State of Good Repair (SOGR) Backlog (leading indicator); and
3. Percentage of Assets in Condition Poor and Very Poor (lagging indicator).

The corporate standardized LOS service attributes are **Quality and Reliability** with the:

- **Technical LOS** measured by reinvestment rate (metric 1) and State of Good Repair Backlog (metric 2); and
- **Community LOS** measured by percentage of assets in Poor or Very Poor condition (metric 3).

6.3.1 Metric 1: Reinvestment Rate

The reinvestment rate serves as a leading indicator, providing a quantifiable and predictive measure of asset health over the 10-year planning horizon. It is defined as the annual capital investment divided by the current replacement value.

$$\text{Reinvestment Rate} = \frac{\text{Annual Capital Investment}}{\text{Current Replacement Value}}$$

The annual capital investment does not include growth or enhancement expenditures, and as such, can be used when quantifying the rate of investment in capital renewal.

The reinvestment rate facilitates a comparative analysis between the actual reinvestment rate and a target reinvestment rate derived from the expected asset lifespan. Deviations indicate potential under- or over-investment relative to optimal lifecycle management, with a lower actual reinvestment rate implying an extended implicit lifespan and heightened future deterioration risk.

According to the Canadian Infrastructure Report Card (2016), the reinvestment rates range from 1.0% to 3.0% depending on the type of infrastructure. A reinvestment rate of 1% yields a 100-year "implicit lifespan," but industry standards suggest a 50-year (2%) to 33-year (3%) reinvestment rate is recommended. See **Table 6-5** for reinvestment rate lower and upper limits as presented in the Canadian Infrastructure Report Card.

Table 6-5: Lower and Upper Reinvestment Rates (Reference: Canadian Infrastructure Report Card)

Infrastructure	Lower Reinvestment Limit	Upper Reinvestment Limit
Roads and Sidewalks	2.0 %	3.0%
Bridges	1.0%	1.5%
Buildings	1.7%	2.5%
Sports and Recreation	1.7%	2.5%

The current reinvestment rate for the City, based on the 2025 budget, is 1.08% or a 93-year replacement schedule. See **Table 6-6** for the current reinvestment rates per service area and the equivalent replacement years.

Table 6-6: Current Reinvestment Rates Per Service Area

Service Area	Current Replacement Value	Year 1 Current Budget	Reinvestment Rate (%)	Equivalent Replacement (years)
Transportation	$2,730,000,000	$ 24,395,300	0.89%	112
Stormwater	$1,488,441,000	$7,448,382	0.50%	200
Recreation, Community and Culture	$1,151,483,000	$9,111,784	0.79%	126
Urban Forestry	$430,618,000	$275,440	0.06%	1563
Parks	$403,808,000	$9,211,400	2.28%	44
Corporate Facilities	$252,083,000	$2,961,237	1.17%	85
Transit	$242,532,000	$12,050,644	4.90%	20
Fire	$160,392,000	$3,885,144	2.42%	41
Parking	$148,037,000	$1,675,000	1.13%	88
Information Technology	$88,826,000	$2,760,000	3.11%	32
Corporate Fleet	$51,915,000	$3,691,910	7.11%	14
Total	**$7,148,135,000**	**$77,466,241**	**1.08 %**	**93**

6.3.2 Metric 2: State of Good Repair (SOGR) Backlog

The SOGR backlog is a leading indicator that quantifies the cumulative under-investment in asset maintenance and renewal. The annual SOGR backlog is defined as:

$$\text{Annual SOGR Backlog} = \text{Target Reinvestment} - \text{Actual Reinvestment}$$

The backlog comprises of two critical components:

- **Go-Forward SOGR Backlog:** Represents the annual reinvestment deficit required to sustain the LOS within the next 10 years. Insufficient annual reinvestment relative to asset replacement value increase directly contributes to this backlog and signifies a lower LOS.
- **Accumulated SOGR Backlog:** The historic SOGR Backlog, which is the accumulated projects that have not yet been completed, reflecting the legacy of under-investment or the deferred maintenance that has accumulated to the current date.

The backlog is calculated in the EAMS-DSS analysis as the sum of the cost of treatments that were required but were not completed as scheduled in the model simulation. As assets that are eligible for treatment are funded or left untreated, the accumulated backlog is updated to reflect the cost of unfunded treatments in any given year. It is not cumulative, nor does it stack the cost of subsequent missed treatments, but reflects the current, applicable unfunded need.

Maintaining the Current LOS strategy requires investment levels that prevent or minimize any new go-forward SOGR Backlog and a substantial reduction of the accumulated backlog to prevent further decline in asset condition ratings.

The EAMS-DSS calculated the Accumulated Backlog at $454 million across all service areas, or 6.36% of the current replacement value, as the baseline for the beginning of the forecast analysis, using Q4 2024 data.

6.3.3 Metric 3: Percentage of Asset Condition in Poor or Very Poor

Asset condition rating acts as a lagging indicator, reflecting the cumulative impact of the reinvestment ratio and SOGR Backlog. Condition is categorized by the percentage of assets falling within "Poor or Very Poor" classification. It is important to note that asset condition could also report on "Fair or Better" but during the Proposed LOS Workshop and the subsequent Scenarios Workshop it was determined that the focus on the assets that need attention, i.e. Poor or Very Poor, that are at an increasing likelihood of failure, is a preferred metric for reporting at the corporate level.

See **Table 6-7** for the three standardized corporate LOS metrics. Note that the percentage of assets in Poor and Very Poor is weighted by replacement value.

Table 6-7: Standardized Corporate LOS Metrics – Current (2024)

Service Area	Reinvestment Rate	Accumulated SOGR Backlog	% Poor or Very Poor (Weighted)
Transportation	0.89%	$335,718,935	7.83%
Stormwater	0.50%	$12,856,890	25.80%
Recreation, Community and Culture	0.79%	$12,248,018	31.04%
Urban Forestry	0.06%	$8,612,365	4.57%
Parks	2.28%	$56,490,348	30.30%
Corporate Facilities	1.17%	$1,881,293	0.19%
Transit	4.90%	$7,350,032	10.97%
Fire	1.88%	$6,523,138	16.24%
Parking	1.13%	$7,652,688	14.64%
Information Technology	3.11%	$3,754,000	9.79%
Corporate Fleet	7.11%	$1,593,100	29.72%
Total	**1.08%**	**$454,600,000**	**17.00%**

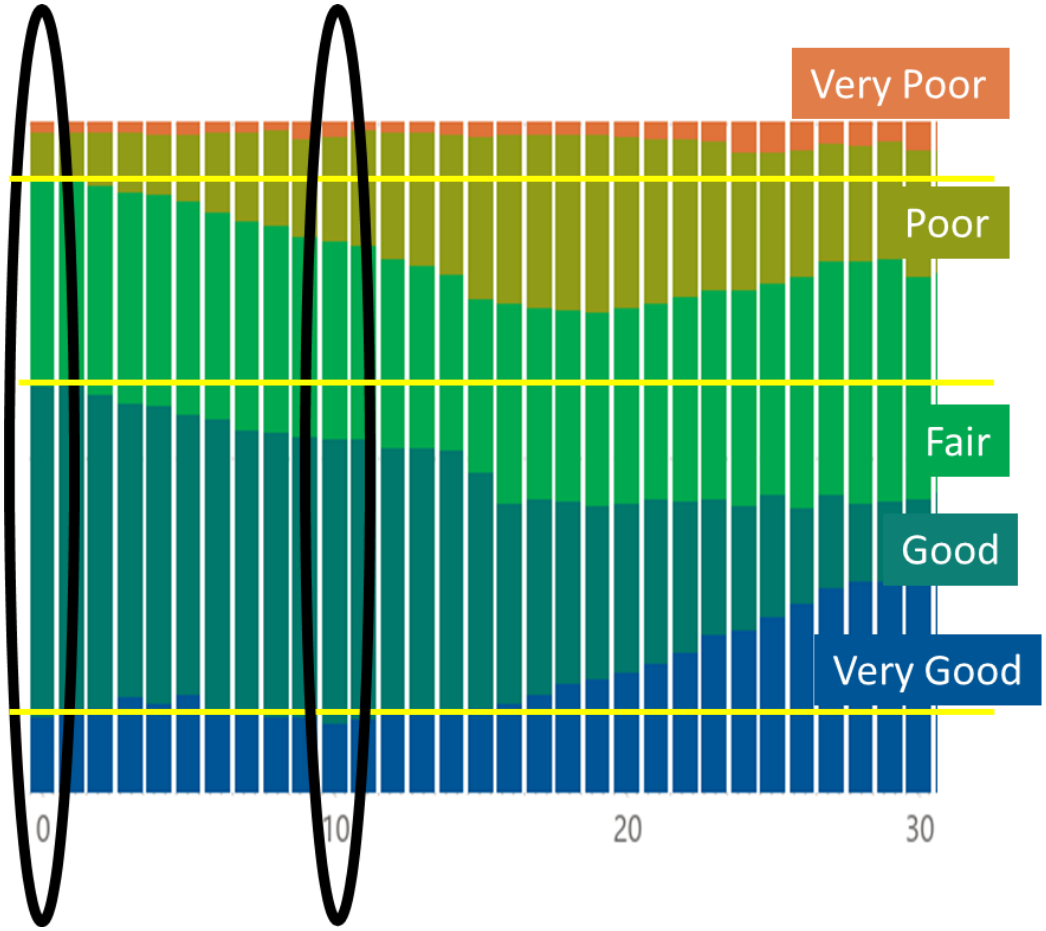
6.4 Proposed LOS Scenarios

The proposed LOS by Year 10 will be informed by the three standardized LOS metrics. Guided by the direction to follow Pathway 2, the goal is to stabilize LOS by Year 10 (within a range) at the corporate level, recognizing that many assets will be scheduled for replacement in the period beyond Year 10 and that some service areas may show a greater change in Year 10 than the corporate level. Considering the condition in the following years (Year 11 to Year 20) is also important, as the condition of the infrastructure over the long term is key to a sustainable and responsible approach to asset management.

6.4.1 Planned SOGR Investment Scenario

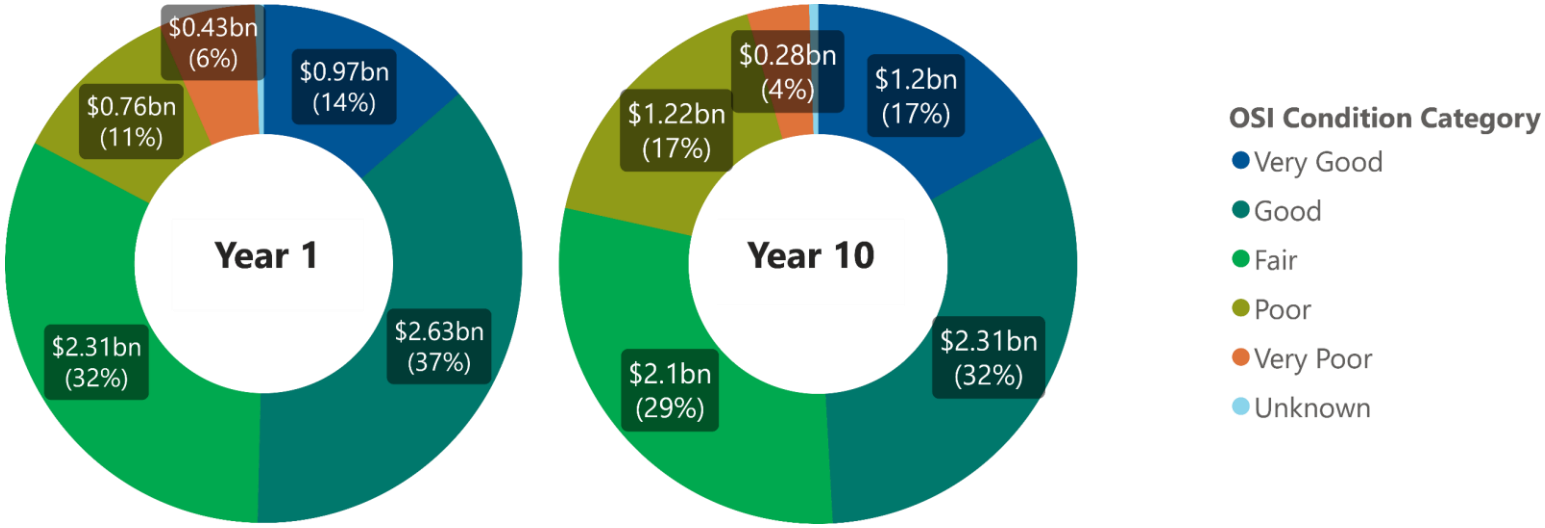
This scenario uses the current planned 10-year budget allocation for infrastructure renewal and replacement, referred to herein as the "Planned SOGR Investment". Continuing this level of capital reinvestment produced a declining condition in year 10. At the corporate level, the condition declined to 21% Poor or Very Poor (from 17% current condition) with a downward slide continuing to Year 20. See **Figure 6-4**.

Figure 6-4: Overall Condition Year 1 to Year 30 – Planned SOGR Investment



See **Figure 6-5** for a comparison of the current state with the 10-year condition under the Planned SOGR Investment Scenario with a reinvestment of $77.5 M in year 1 (a renewal rate of 1.08%),

Figure 6-5: Corporate LOS Condition (2024 and 2034) under Planned SOGR Investment Scenario



6.4.2 Optimized Scenario

The "Optimized" scenario completed all scheduled treatments and 10% of the accumulated backlog treatments each year. A true unconstrained scenario assumes the entirety of the accumulated backlog is removed in the first year of the model situation, which in a real-world situation would be unrealistic to accomplish from both a financing and human-capital resourcing perspective. Under this scenario, no new treatment backlog is created across the next 10 years. The investment required for this scenario is $1,491 million over the 10 years. See **Table 6-8** with the comparison of the Optimized Scenario with the Planned SOGR Investment Scenario.

Table 6-8 Summary of Scenarios - Planned SOGR Investment and Optimized Scenario

Scenario	Investment (Years 1 to 10)	Annual Reinvestment Rate	Year 10 Accumulated Backlog	Year 10 % Poor or Very Poor
Planned SOGR Investment	$868,514,000	1.22%	$515M	21%
Optimized	$1,419,939,000	1.99%	$0	13%

As the current LOS for condition is 17% Poor or Very Poor, the Optimized Scenario could be described as overachieving in year 10, as there is an improvement in condition to 13%. As the accumulated backlog has been fulfilled by Year 10, going forward, the required investments will level out.

6.4.3 Stabilize LOS Scenario

In a follow-up workshop, the Senior Leadership participants reviewed various data sources, including public engagement survey results, EAMS -DSS analyses for the Planned SOGR Investment and Optimized Scenarios, and the City's 2025 current budget level of renewal investment. Based on this review, the participants requested that a Stabilize LOS Scenario be developed for analysis.

The direction for the Stabilize LOS Scenario was to focus investments on Transportation, as this service area has the greatest impact on the overall corporate condition profile. Transportation represents 38% of the overall replacement value, and the projected condition in year 10 is projected erosion in condition. In the survey, the public also identified Transportation as an area for improvement.

See **Figure 6-6** and **Figure 6-7** with the overall condition Year 0 and by Year 10, highlighting the percentage of Poor and Very Poor is stabilized at 17% in the Stabilize LOS Scenario but increased to 21% in the Planned SOGR Scenario (weighted by replacement value in both scenarios).

Figure 6-6: Corporate Condition Profile (2024 to 2034) – Planned SOGR Scenario

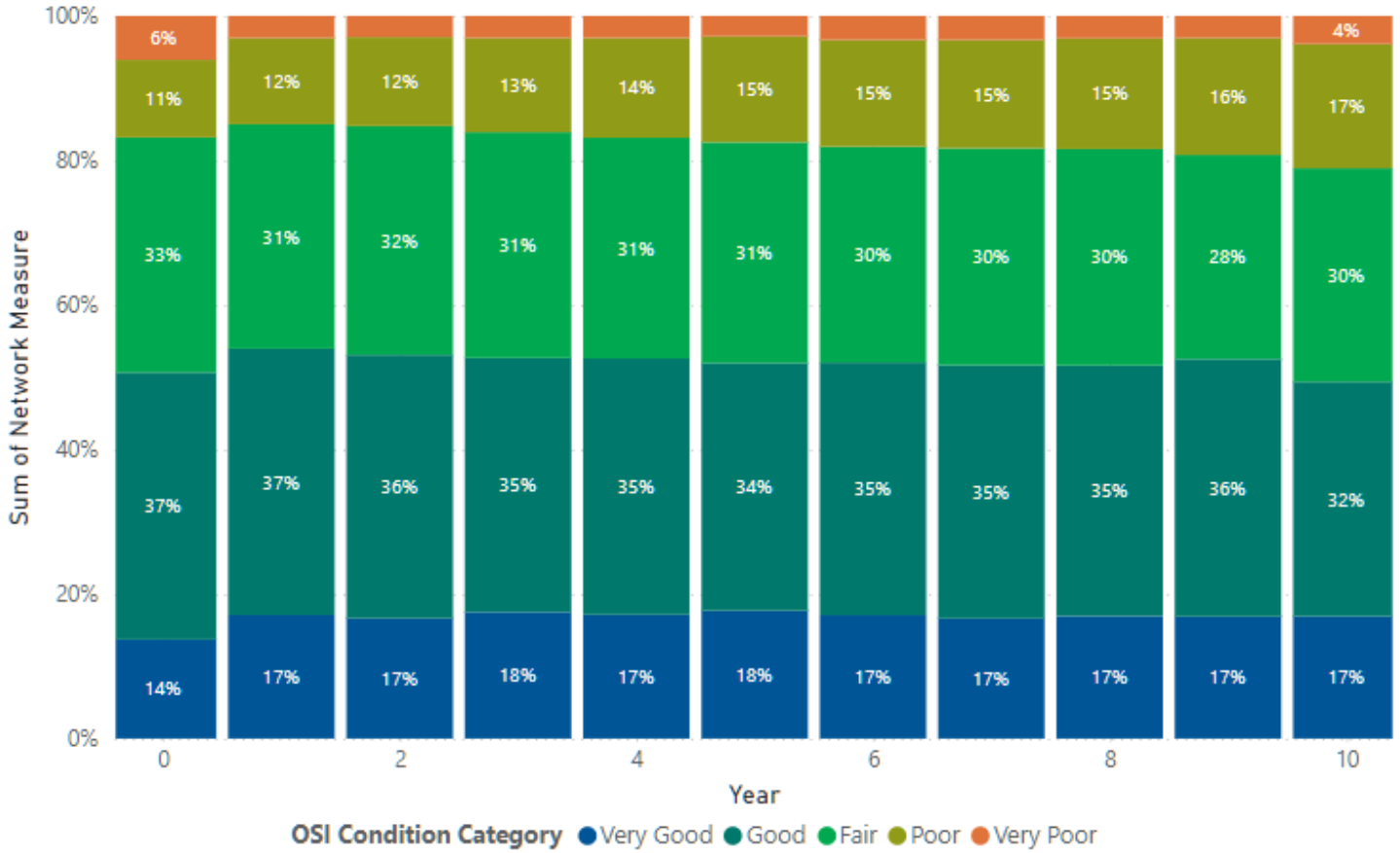


Figure 6-7: Corporate Condition Profile (2024 to 2034) – Stabilize LOS Scenario

The Stabilize LOS Scenario could not stabilize LOS across all eleven asset service areas by Year 10, but included strategic increases in Transportation, and to a lesser degree in a few other asset classes, to improve on the target reinvestment rates and achieve overall stabilization of LOS at the corporate level.

See **Table 6-9** for the summary of proposed LOS scenarios highlighting the amount of investment in the first ten years, the equivalent annual reinvestment rate, the remaining accumulated backlog in Year 10 and the condition in year 10. See **Table 6-10** for estimated operating costs per service area.

Table 6-9: Summary of Scenarios for Corporate Overall Proposed LOS

Scenario	Investment (Years 1 to 10)	Average 10-year Reinvestment Rate	Year 10 Accumulated Backlog	Year 10 % Poor or Very Poor
Planned SOGR Investment	$868,514,000	1.22%	$515,180,000	21%
Optimized	$1,419,939,000	1.99%	$0	13%
Stabilize LOS	$1,217,910,000	1.70%	$380,489,000	17%

Table 6-10: Estimated Annual Operating Costs Per Service Area

Service Area	Operating %CRV/a	Current Replacement Value	Estimated Annual Operating Costs
Transportation	0.42%	$2,730,000,000	$11,466,000
Stormwater	0.11%	$1,488,441,000	$1,637,000
Recreation, Community and Culture	1.13%	$1,151,483,000	$13,012,000
Urban Forestry	0.95%	$430,618,000	$4,091,000
Parks	1.67%	$403,808,000	$6,744,000
Corporate Facilities	1.69%	$252,083,000	$4,260,000
Transit	4.12%	$242,532,000	$9,992,000
Fire	1.19%	$160,392,000	$1,909,000
Parking	0.07%	$148,037,000	$104,000
Information Technology	5.62%	$88,826,000	$4,992,000
Corporate Fleet	6.84%	$51,915,000	$3,551,000
Total	**0.86%**	**$7,148,135,000**	**$61,757,000**

6.5 Proposed Level of Service

The objective of the scenario analysis was to develop a state of good repair plan to be phased in over 10 years that would reduce the infrastructure backlog and stabilize service levels.

The scope or parameters to select the proposed LOS include:

- Focus is only on the state of good repair needs (excludes growth and new/enhanced);
- Preferred pathway is P2 to stabilize LOS in Year 10;
- Forecast spending needs over ten years;
- Phased in annual asset investments that would stabilize overall asset condition-based levels of service in year 10 of the plan, as they are in year 1; and
- Prioritization of critical assets nearing end-of-life or requiring urgent upgrades (the % in Poor and Very Poor condition).

Because the Stabilize LOS Scenario met the conditions of stabilizing LOS over ten years, it has been selected and renamed the "**Recommended SOGR Investment Scenario**" that meets the City's Proposed LOS. Please see **Section 6.7** for the Recommended SOGR Investment Strategy with further details on this recommended scenario and the financial affordability and strategy associated with it.

See **Table 6-11** for the Proposed LOS for the Corporate Standardized LOS metrics for Years 1 – 10 under the Recommended SOGR Investment scenario. The complete table of Proposed LOS for Years 1 – 10 for each of the asset service areas is available in **Appendix A-5**.

Table 6-11: Proposed Corporate LOS for Years 1-10 – Recommended SOGR Investment Scenario

Year	Reinvestment Rate	Accumulated SOGR Backlog	% Poor or Very Poor
1-2025	1.08%	$454,680,807	16.74%
2-2026	1.00%	$399,835,877	14.72%
3-2027	1.37%	$392,890,657	15.01%
4-2028	1.41%	$372,010,242	15.56%
5-2029	1.69%	$371,522,019	16.24%
6-2030	1.62%	$359,559,555	16.88%
7-2031	1.86%	$369,613,197	17.23%
8-2032	2.03%	$348,351,959	17.02%
9-2033	2.24%	$379,253,808	16.91%
10-2034	2.72%	$380,489,447	17.40%

6.6 Financial Analysis and Reporting

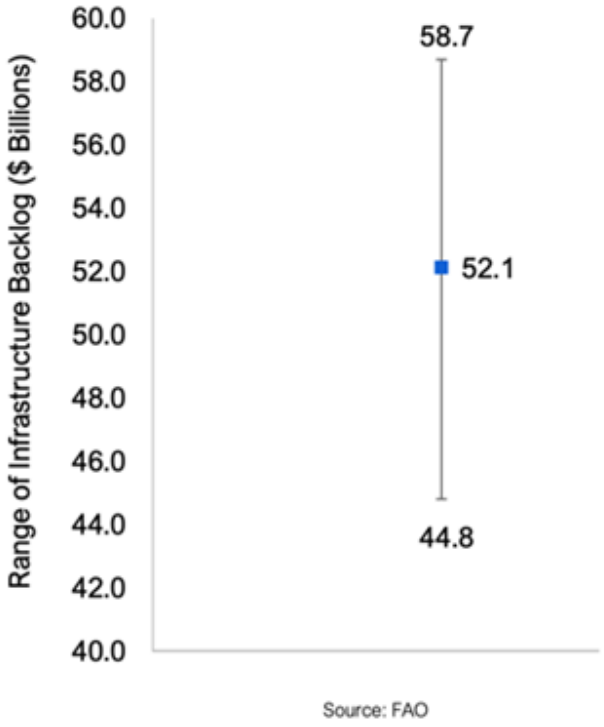
6.6.1 Confronting the Municipal Sector State of Good Repair Backlog

The Financial Accountability Office of Ontario (FAO) has undertaken important analytical work to quantify the Ontario municipal sector infrastructure backlog. See **Figure 6-8**. The FAO has established a 2020 $45B to $59B range quantifying the municipal infrastructure backlog – which they highlight using a $52B midpoint estimate. The backlog is defined as the capital spending required to bring existing assets up to a State of Good Repair. The backlog $ estimate is certainly too low since $47B worth of municipal assets across Ontario had undocumented condition ratings. The municipal infrastructure State of Good Repair backlog extends across the entire Ontario municipal sector. It is one of the main drivers behind O. Reg 588/17.

Figure 6-8: Municipal Infrastructure Backlog Estimate (Reference: FAO)

The municipal infrastructure backlog estimated at $52 billion in 2020

- The capital spending required to bring assets up to a state of good repair is defined in this report as the infrastructure backlog.
- The FAO estimates the backlog is about $52 billion dollars. However, the backlog could range from $45 to $59 billion, depending on the actual condition of assets.
- These figures do not include any repair estimates for the $47 billion of municipal assets whose condition is unknown.



6.6.2 Overview of Burlington's Analytical Framework

The financial analysis underpinning this plan employs a long-range forecasting methodology, projecting funding requirements for Burlington's diverse portfolio of municipal infrastructure assets. The core principles of this approach involve:

- **Lifecycle Cost** For each asset service (roads, stormwater, parks, buildings, and other core municipal assets), the EAMS-DSS has been used to determine the cost of ownership throughout their expected lifespan. This includes initial acquisition/construction costs, periodic rehabilitation, and eventual replacement. The models incorporate factors such as asset age, condition assessments, mid-life interventions, and maintenance and renewal cycles. Corroborating this analysis are the lifecycle capital costs estimated from optimal reinvestment rates and historical expenditures. A historic review of actual capital expenditures for rehabilitation was adapted into a metric for rehabilitation capital investments, and an estimate of replacement allowances was estimated from the asset register data using a value-weighted aggregate for each asset service. The two metrics together provide a secondary approach to the lifecycle capital costs required to meet the proposed LOS.
- **Needs Assessment:** Based on the lifecycle cost models, the analysis quantifies the annual investment required to maintain each asset category at the proposed level of service to maintain the level of service and to reduce the backlog over the period of 10 years by chipping an additional amount every year. This assessment identifies the timing and magnitude of future capital rehabilitation and replacement projects.
- **Level of Service:** The analysis and findings are based on discussions held during working sessions with asset leads from each service area. These sessions focused on assessing the impacts of distinct Levels of Service (LOS) as outlined under Ontario Regulation 588/17. While initial discussions explored the potential for service improvements (Pathway 1), the collective decision during the "Big Table" meeting was to adopt Pathway 2, which aims to stabilize the current LOS. As part of this approach, a funding analysis was conducted to identify existing shortfalls, address infrastructure backlogs, and establish a strategy to reduce the funding gap over time to ensure service sustainability.
- **Funding Availability Analysis:** The analysis compares the projected annual investment needs against currently allocated capital funding contributions. This involves reviewing existing budgetary allocations, dedicated reserve funds, and anticipated revenue streams earmarked for capital projects.

6.6.3 Financial Affordability Analysis

This section provides the financial strategy for the City of Burlington based on a 10-year capital planning approach, using detailed asset data and lifecycle-based forecasting. The following analysis provides a financial estimate of the City's State of Good Repair (SOGR) needs, as an alternative to the methodology from the EAMS-DSS model, which is driven by Level of Service (LOS) metrics and condition-based scenarios.

The following analysis uses a straight-line approach, applying weighted average estimated service life to determine reinvestment rates for each asset service area. The weighted average service life is calculated using asset replacement values, and by incorporating the past three years of historical capital expenditure (CapEx) reinvestment rates as %CRV/a along with estimated rates required to replace assets at end-of-life, a target reinvestment ratio is derived for each asset category. This ratio is then applied to the replacement cost of each service area to estimate the annual replacement cost allowance.

This approach serves as a **high-level financial benchmark** that complements the **EAMS-DSS model**, which relies on scenario-based evaluations informed by condition-based Level of Service (LOS) metrics and associated reinvestment strategies. While the figures may differ, the two methodologies offer **different but valuable perspectives**, with the straight-line approach providing a planning-level estimate aligned with the 10-year capital outlook, and the EAMS-DSS model offering more refined insights based on asset performance and risk.

6.6.4 Key Inputs and Straight-Line Analysis

The analysis is built on current replacement values (CRVs) for each asset service area and the weighted average estimated service life for each asset group. Rehabilitation reinvestment rates are based on historic rehab cost %CRV/a, and estimated service life were sourced from asset data, which helps identify the target replacement year for each service area. These values were used to determine both the de facto lifecycle replacement year—based on current investment levels—and the target reinvestment ratio, calculated as 100 divided by the service life. This approach allows the City a secondary estimate

on how much funding is required each year to both rehabilitate and replace assets, by maintaining them in a state of good repair.

6.6.5 Annual Infrastructure Reinvestment Deficit

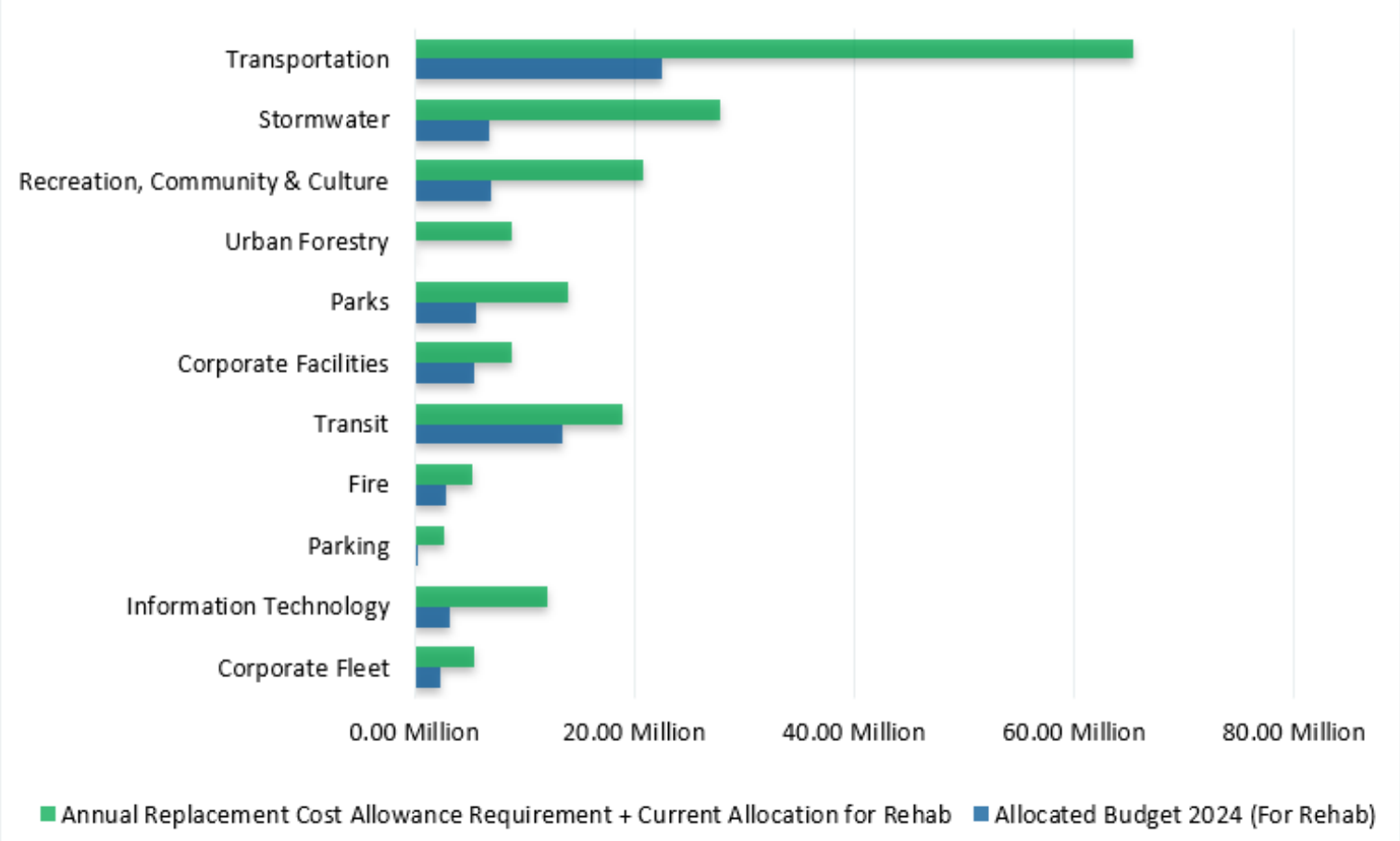
An analysis of the City's asset inventory and estimated average service life reveals the annual reinvestment requirement to maintain these assets sustainably, based on its weighted average estimated service life totals $187.0 million. However, the last three years' historical average capital expenditure at %CRV/a amounts to $66.4 million. This high-level approach to calculating the infrastructure funding gap reveals a significant annual infrastructure funding gap of $120.6 million, representing approximately 65% of the identified need not being met. Transportation and Stormwater systems have seen modest annual reinvestment rates of 0.67% and 0.53%, with actual expenditures of approximately $18.4 million and $7.86 million, respectively. These are critical core assets with large networks, where even a small percentage represents significant capital outlay. See **Table 6-12,** which presents the historic reinvestment rates as %CRV/a per service area.

Table 6-12: Historic Reinvestment as %CRV/a

Service Area	Rehab Reinvestment Rate (%CRV/a)	Current Annual Capital Expenditure (based on 3 years)
Transportation	0.67%	$18,375,000
Stormwater	0.53%	$7,863,000
Recreation, Community and Culture	0.68%	$7,781,000
Urban Forestry	0.02%	$82,000
Parks	1.97%	$7,831,000
Corporate Facilities	1.62%	$4,075,000
Transit	4.04%	$9,938,000
Fire	2.12%	$3,398,000
Parking	0.50%	$737,000
Information Technology Services	3.32%	$2,951,000
Corporate Fleet	6.45%	$3,346,000
Total	**0.93%**	**$66,379,000**

Overall, most service areas face substantial deficits, highlighting a critical need for increased funding to meet the required levels of service while allowing for eventual asset replacement over the aggregate asset service life. This funding gap methodology is based on the historical investment as %CRV/a and the total cost allowance, including the historical investment and the replacement cost allowance based on estimated service life in **Figure 6-9**.

Figure 6-9: Current Reinvestment Gap - Target Reinvestment Compared with Historical Spend

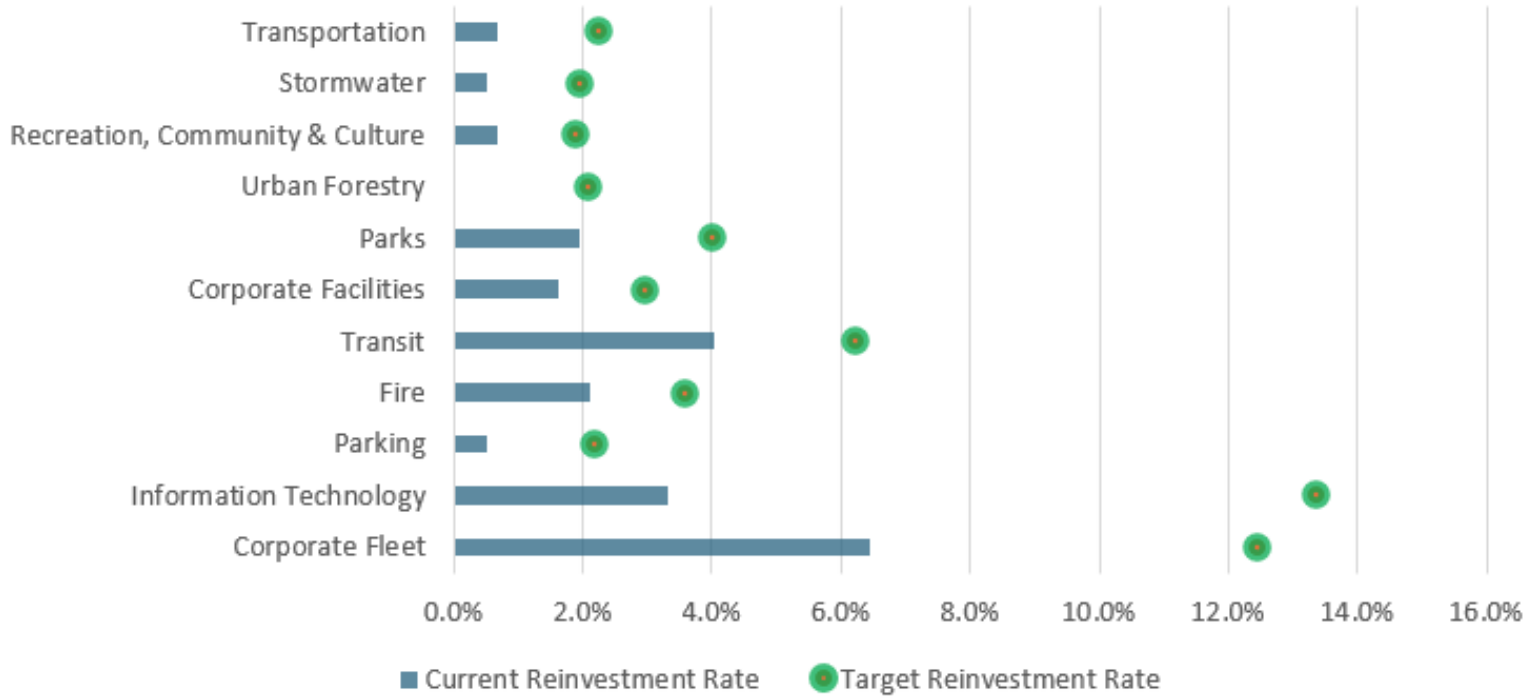


6.6.6 Reinvestment Rate

To determine the target reinvestment rate, the City utilized the estimated service life values from the asset inventory data. For example, if an asset has an estimated service life of 25 years, we calculate the target reinvestment rate as 100 ÷ 25 = 4%.

This reflects the annual capital requirement as a percentage of the total replacement cost. As assets continue to age and deteriorate, ongoing reinvestment is essential to maintain them in a state of good repair and sustain current service levels. By comparing the actual reinvestment rate (based on historic investments) and adding that to the target reinvestment rate, we can identify the funding gaps that may exist and inform future capital needs in **Figure 6-10**.

Figure 6-10: Target Reinvestment Rate and Actual Reinvestment Rate



6.6.7 Capital Budget Allocations 2021 to 2025

The earlier analysis focused on the 2024 capital budget, as 2025 was not yet available. As the City increased the level of investment for infrastructure renewal in 2025, the summary of the approved capital budgets from 2021 to 2025 is

presented in **Table 6-13,** which shows the allocation to infrastructure renewal as well as growth, new/enhanced and green initiatives.

Table 6-13: Capital Budget Allocations (2021 to 2025)

Year	Grand Total	Infrastructure Renewal	% Capital Budget	Growth	New/ Enhanced	Green
2021	$ 72,642,030	$ 50,218,240	69%	$ 15,161,630	$ 7,262,160	$
2022	$ 77,384,020	$ 52,929,539	68%	$ 8,065,776	$ 11,631,613	$ 4,757,092
2023	$ 72,572,264	$ 53,439,367	74%	$ 7,070,475	$ 8,800,225	$ 3,262,197
2024	$ 88,556,830	$ 63,051,877	71%	$ 5,075,826	$ 8,369,898	$ 12,059,229
2025	$ 105,425,163	$ 79,986,427	76%	$ 14,687,843	$ 6,186,910	$ 4,563,983
Total	**$ 416,580,307**	**$ 299,625,450**	**72%**	**$ 50,061,550**	**$ 42,250,806**	**$ 24,642,501**

As the infrastructure renewal budget is most relevant for asset management planning, the renewal ratio is calculated (using 2025 current replacement value), and the effective number of years of expected useful life (before replacement) is presented in **Table 6-14**.

Table 6-14: Renewal Ratio and Effective Lifecycle Replacement (2021 to 2025)

Year	Infrastructure Renewal	Renewal Ratio	Effective Lifecycle Replacement
2021	$ 50,218,240	0.70%	142 years
2022	$ 52,929,539	0.74%	135 years
2023	$ 53,439,367	0.75%	133 years
2024	$ 63,051,877	0.88%	113 years
2025	$ 79,986,427	1.12%	89 years

6.7 Recommended SOGR Investment Strategy

In summary, the EAMS-DSS incorporated the treatment logic for each asset type, scheduling replacement or rehabilitation treatment as required to maintain the state of good repair and deliver the expected performance from the infrastructure assets. Where there is a funding restriction in a given year, the EAMS-DD will incorporate risk in the selection of which treatments to schedule and which to delay.

To stabilize LOS in Year 10, **the recommended SOGR investment over 10 years is $1.2 billion**, with an annual average of $121.79 million, corresponding to an **average annual reinvestment rate of 1.70%.** Considering affordability, the approach is to start slow, with the first two years at the current level of investment, with the ramp up in years 3 to 6, then an additional step up for 7 to 9 and then year 10 onwards. Over the 10-year period, the overall reinvestment rate increases from 1.08% in Year 1 to 2.72% in Year 10, reflecting the growing demand for lifecycle renewal investments as asset networks age and more assets reach critical thresholds for intervention. The increasing trend also reflects the scenario's intent to proactively reduce future backlog and improve the long-term sustainability of service levels.

The total 10 Year Infrastructure Funding Gap between the Planned and Recommended SOGR Investments is $350 million.

See **Table 6-15** and **Figure 6-11** with the Recommended SOGR Investment compared with the Planned SOGR Investment. The Recommended SOGR Investment scenario achieves stabilized LOS in year 10. These investments are presented in current dollars. See **Figure 6-12** for 20-year investments comparing Planned SOGR with Recommended SOGR and **Table A-6-1** (**Appendix A**).

Table 6-15: Planned Compared with Recommended 10-Year Investments and Annual Infrastructure Gap

Year	Planned SOGR Investment	Recommended SOGR Investment	Annual Infrastructure Gap
1	$77,500,000	$77,500,000	-
2	$71,600,000	$71,600,000	-
3	$74,000,000	$97,700,000	$23,700,000
4	$78,800,000	$100,900,000	$22,100,000
5	$83,000,000	$121,100,000	$38,100,000
6	$93,300,000	$115,800,000	$22,500,000
7	$84,500,000	$133,000,000	$48,500,000
8	$97,100,000	$145,300,000	$48,200,000
9	$100,600,000	$160,300,000	$59,700,000
10	$108,000,000	$194,800,000	$86,800,000
Total	**$868,400,000**	**$1,217,700,000**	**$349,300,000**

Figure 6-11: Recommended 10-Year Reinvestment Rates

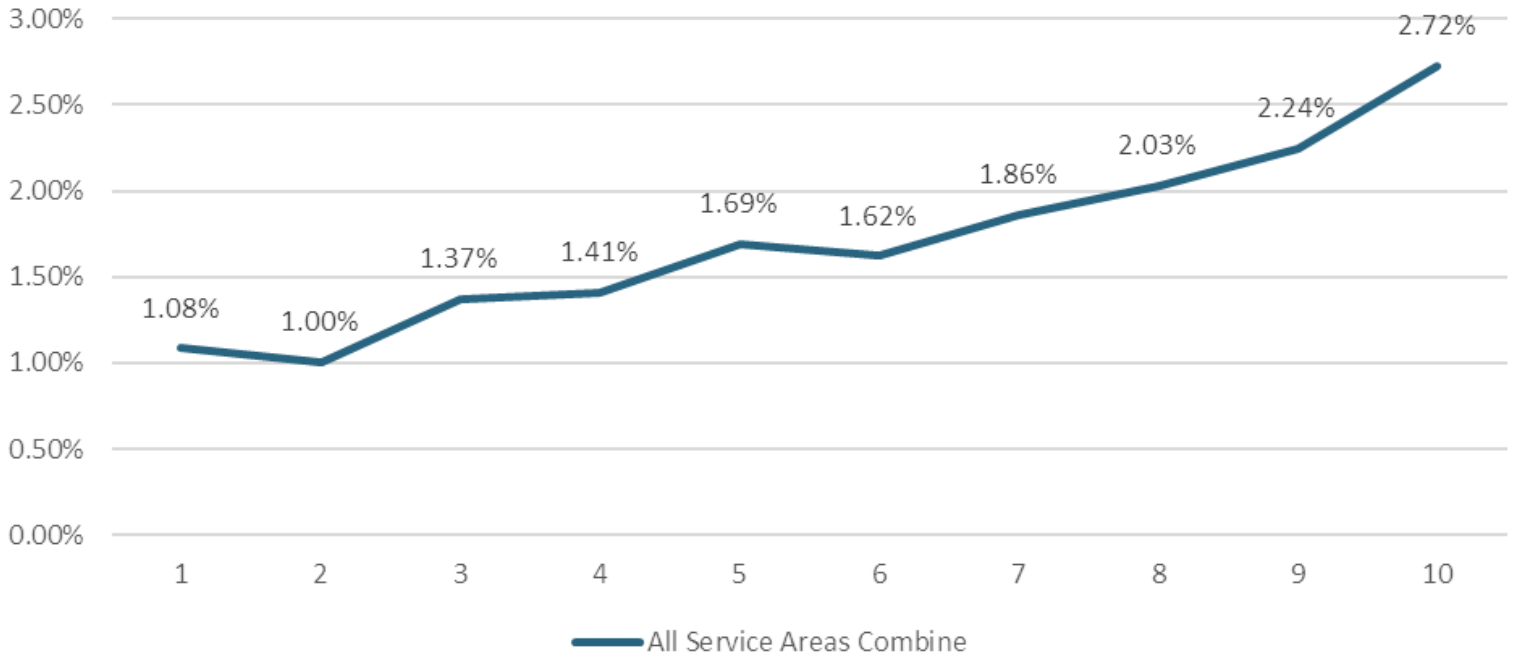
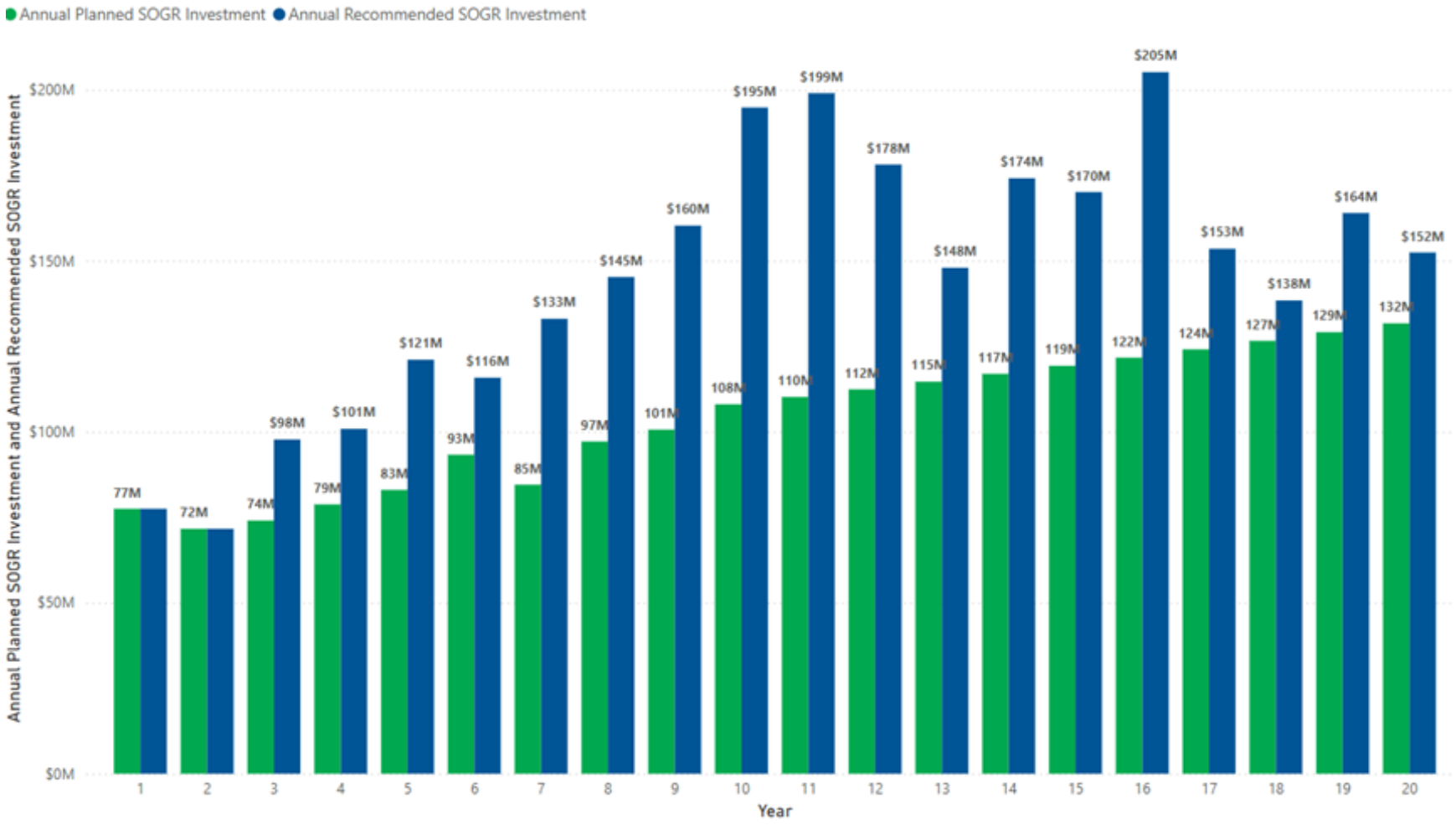


Figure 6-12: Annual Planned SOGR Investment and Annual Recommended SOGR (Year 1 to 20)



6.8 Funding Sources

The City relies on multiple sources to fund infrastructure renewal, but most notably tax revenues by way of the Infrastructure Renewal Levy. In addition, reserve funds are also crucial resources that are used to balance the impact to property taxes. Some reserve funds the City can and have utilized include:

- Burlington Hydro reserve fund
- Capital reserves and reserve funds (various)
- Parks and Recreation Infrastructure reserve funds (various)
- Federal and Provincial Gas Tax allocation

Furthermore, development charges help cover the costs of growth, while utility and regional recoveries support shared service-specific needs. The City actively pursues grants and funding from other levels of government, and general municipal revenue and debt financing also contribute to funding various infrastructure projects and services.

6.9 Risk Assessment

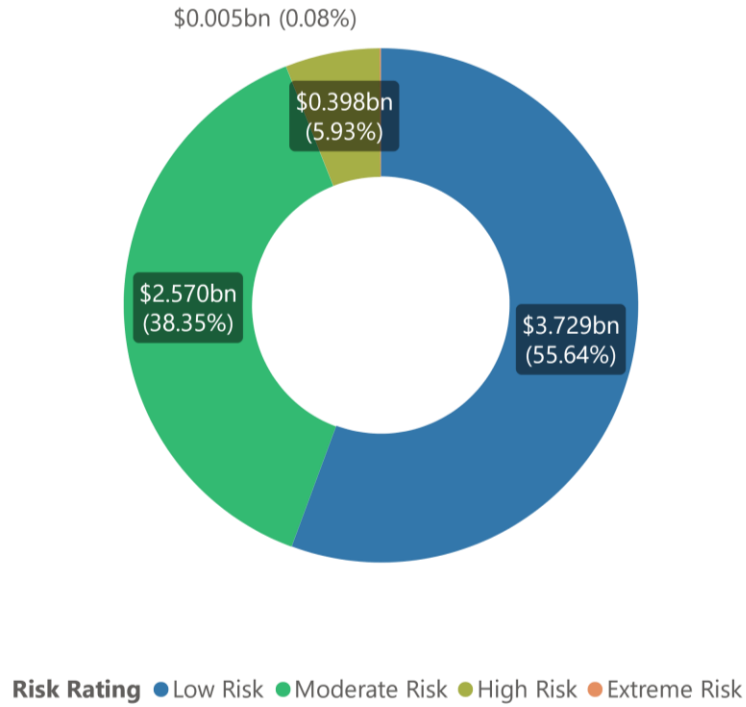
As the City adopts Pathway 2 to maintain the current Level of Service (LOS) across all asset categories, several risks must be considered if investments do not align with long-term asset sustainability.

- **Regulatory Risk:** Maintaining current LOS without adequate reinvestment may lead to non-compliance with O. Reg. 588/17, which requires municipalities to have a clear strategy to manage service levels and asset risks. Failure to address deteriorating conditions could trigger audits, increased provincial oversight, or funding limitations in future grant opportunities.
- **Health and Safety Risk:** Deterioration in asset condition poses increased risks to public safety. For example, degraded roads and sidewalks increase the risk of accidents; aging fire, fleet, and transit infrastructure can compromise emergency response and transportation reliability; and under-maintained recreational or facility assets may present hazards to public users. Proactive risk mitigation becomes harder as assets age without sufficient investment.

- **Financial Risk:** Deferring investment leads to compounding infrastructure backlogs. As assets move from fair to poor condition, the costs of repair or replacement increase exponentially. Without closing the funding gap, the City may face rising emergency repairs, higher insurance claims, and inefficient service delivery.

Under the Recommended SOGR Investment Scenario, the City's risk rating profile is improved, with a reduction in the percentage of assets in Extreme-, High-, and Moderate-risk, lowering from 50.15% to 44.36% by Year 10, and an increase in the percentage of assets in Low Risk from 49.15% to 55.64% by Year 10. See **Figure 6-13**.

Figure 6-13: Risk Rating by Replacement Value – Overall (Year 10)



6.10 Recommendations: Strategies for Addressing the Funding Gap

The City is recommending the implementation of a phased strategy to gradually increase annual capital contributions for infrastructure renewal. This can be achieved through a combination of the following strategies.

6.10.1 Master Plan Restructuring to Reflect Infill Development

Restructure the City's master planning approach to maximize the utilization of existing assets while reducing the usage of new assets/facilities. This master planning restructuring exercise is consistent with the infill nature of future development in Burlington to accommodate residential growth. The previous greenfield development model of adding new assets/facilities using population increase "triggers" is no longer appropriate during the upcoming period of infill/intensification-driven development.

A potential reduction in planned future growth-related assets/facilities will reduce the asset management financial exposure. Master plan restructuring will also reduce the negative financial impacts of Development Charge "leakage" onto the property tax that results from mandatory DC rate discounts imposed by the province. While increased utilization of existing assets/facilities may reduce replacement lifecycles, the savings associated with avoiding/deferring new growth-related assets/facilities should provide a significant net financial benefit.

6.10.2 Business Service Reviews

An option the City can consider is reviewing existing services to explore opportunities where a shared services model can be implemented with other municipalities. Shared service delivery platforms can reduce costs and /or increase revenues depending on whether the City is a "buyer" or a "seller" of shared services. Shared service models are appropriate for both public-facing services as well as administrative support functions.

6.10.3 Prioritized and Targeted Investment Strategy

The City recommends developing a prioritized investment plan that focuses on addressing the most critical and high-risk asset categories, particularly roads and stormwater, to maintain the current LOS. This should involve:

- **Detailed Risk Assessment:** Conduct a comprehensive risk assessment to identify assets with the highest likelihood of failure and the most significant potential impact.
- **Condition-Based Prioritization:** Allocate funding based on the current condition and remaining useful life of assets, prioritizing those in the most critical need of repair or replacement.
- **Optimization of Maintenance Programs:** Enhance preventative maintenance programs to extend the lifespan of existing assets and reduce the need for premature capital expenditures.

6.11 Financing Principles, Opportunities and Strategies

6.11.1 Financing Principles

The City's annual budgets shall balance the AMP priority to stabilize service levels in consideration of acceptable risk and condition. Sustainable, predictable funding is vital to delivering reliable service to residents. The City remains committed to sound fiscal management and transparency of its infrastructure and investment decisions will consider the total cost of asset ownership, including acquisition, operation, maintenance, and disposal, to ensure that assets are managed in a fair and sustainable manner for present and future residents of the City. Matching ongoing expenses with ongoing revenues as much as possible is important to ensuring the sustainability of the financial plan.

The following core guiding principles will support the financial health and sustainability of the asset management program:

- **Intergenerational Equity:** Long-term infrastructure will be financed using tools that share costs with future users.
- **Transparency and Accountability:** Decisions will be documented, justified, and communicated clearly. Budgets and plans will be made available to the public.

- **User-Pay Principle:** Where feasible, users will contribute to costs through user fees, development charges, or utility rates.
- **Asset Renewal Priority:** Renewal and maintenance will be prioritized over new asset acquisition unless justified by growth or strategic value.
- **Risk-Based Approach:** Investments will be guided by risk assessments and the criticality of services.

6.11.2 Financing Opportunities

The City requires significant and sustained investment to meet the needs associated with achieving target service levels. While the City will continue to optimize and make full use of existing funding sources, it will also actively pursue additional funding opportunities. Several revenue options are available (see **Table 6-16**); however, in many cases, these do not represent ongoing or guaranteed sources of funding.

Table 6-16: Revenue Options for Sources of Funding

Revenue Option	Description
Taxation Revenues	• Adjustments to the dedicated Infrastructure Renewal levy, funded from property tax revenue annually to replenish reserve funds. • Consider phased increases to the levy based on the needs as outlined in the AMP.
User Fees and Charges	• Increase cost recovery or apply full-cost pricing principles. • Review the suitability and feasibility of applying new dedicated fees to fund maintenance and enhancements of assets. • Review and adjust existing fees.
Development Charges (DCs)	• DCs are used to fund new growth-related infrastructure per the Development Charges Act.

Revenue Option	Description
	• Future updates to the DC Background Study will align with service-level targets, which will impact AMP priorities.
Grants and Government Transfers	• Grants are received by the City from senior levels of government and include the Provincial Gas Tax, Federal Gas Tax, and Investing in Canada Infrastructure Program. • Continue to actively pursue federal and provincial infrastructure grants and maintain a grant readiness pipeline to align projects with funding opportunities.
Debt Financing	• Using debt financing for large capital projects with long useful lives, and when lifecycle savings or intergenerational fairness are evident. • Strategically balance the needs of the AMP with other municipal priorities to maintain debt within established Council-approved thresholds.
Reserves and Reserve Funds	• Established by the Council, reserves and reserve funds are an essential element of the City's financial plan that assist with long-term financial stability and financial planning. • Used to cushion the impact that major expenditures would otherwise have on tax rates each year. • Reserves are established for future purposes, and the revenues to these funds come from a variety of sources, including property taxes, user fees, and grants. • Establish new dedicated reserve funds to manage specific assets. • Develop reserve policies that define minimum target balances and replenishment strategies. • Annual contributions should align with asset depreciation and renewal forecasts.
Other / Alternative Sources	• Public-Private Partnerships

6.11.3 Financial Strategies

The above scenarios demonstrate the forecasted funding requirements for the City's infrastructure and the effect of the existing budget on the condition of the asset portfolio.

Based on the lifecycle strategies currently defined, the planned budget will **not** be sufficient to meet infrastructure needs over the long term. To meet the unfunded reinvestment needs, the City will consider a variety of strategies to effectively address the deficit.

These strategies may include, but are not limited to, the following:

- **Increasing Access to Revenue:** through increases to existing revenues, exploring access to new revenues, and leveraging maximum dollars from federal and provincial capital funding.
- **Future Adjustments to Levels of Service:** review options to maintain, stabilize or improve existing levels of service and explore where reductions to service levels are possible.
- **Apply an Affordability Lens to Policy Development and Strategic Plans:** to ensure guiding policies and service-specific master / strategic plans (e.g., Integrated Mobility Plan), outline full lifecycle implementation costs and consider what the City can afford.
- **Review Assets in Poor to Very Poor Condition:** to ensure critical infrastructure continues to receive adequate funding to address any Poor to Very Poor condition assets and mitigate the risk of assets deteriorating to this condition.
- **Improve the Alignment Between the Budget Process and Asset Management:** as the asset management program and budget process operate as a system that offers the greatest benefit if processes between each are fully integrated. Ongoing alignments between the asset management program and the budget process will allow for improved decision-making related to capital infrastructure requirements and associated operational budget impacts through the implementation of short-term and near-term actions.

6.12 Uncertainty and Assumptions in Forecasts

There are several uncertainties that can significantly affect the timing and value of asset renewal needs, the availability of funding, and the accuracy of financial forecasts. These uncertainties influence the City's ability to deliver services while balancing service levels, costs, and associated risks. Asset managers must navigate increasing service demands, tight budgets, and the risks tied to those decisions.

Key uncertainties and assumptions include:

- **Climate Change and Weather Variability:** As noted in the City's Strategic Asset Management Policy, climate change continues to influence planning and decision-making. However, unpredictable weather, particularly increased rainfall -creates capacity and performance challenges for stormwater, transportation, and other infrastructure assets. This increases the uncertainty in forecasted costs. Climate variability affects infrastructure in multiple ways, including accelerated deterioration, shortened service life, and reduced asset reliability. This will result in greater demand for reactive maintenance and adjustments in maintenance schedules, renewal plans, and capital investments. The City allocates funding to support climate adaptation where feasible. For example, funding has been set aside for stormwater management to mitigate flooding caused by extreme weather events.
- **Economic Conditions:** Global and local economic shifts can impact the financial assumptions in this AMP. Recent examples include inflationary pressures from tariffs and changing trade policies, which have driven up the cost of materials and supplies - directly affecting the City's financial capacity.
- **Legislative Changes:** While legislative changes that impact expenditures are typically communicated in advance, they may not always align with the 10- or 60-year planning horizons considered in this AMP. Unexpected regulatory changes could therefore affect future funding requirements.
- **Aging Infrastructure:** As infrastructure continues to age and deteriorate, increased investment in lifecycle activities is needed to maintain service levels. While the City's early adoption of asset management practices has helped

reduce costs, ongoing improvements to these practices and the use of innovative technologies are necessary to further minimize long-term asset ownership costs.

- **Human Resources:** The ability to plan and deliver infrastructure projects may be affected by staffing constraints. Limited staff capacity can hinder the City's responsiveness to service expectations and project timelines.
- **New Initiatives:** New initiatives, whether originating from the Council, master plans, or other sources, create additional financial and operational pressures. To manage this, the City should ensure that all proposals for new programs or services include a comprehensive analysis of associated costs and risks. This will help decision-makers fully understand the potential asset impacts before implementation.
- **Levels of Service and New Service Demands:** Current levels of service are primarily based on asset condition, which aligns with O. Reg. 588/17 compliance. However, service levels must also account for other key performance indicators such as safety, availability, connectivity, and public satisfaction. Council inquiries are often reflective of community priorities and are treated as direct feedback on desired service levels.

To meet future regulatory and community expectations, the City is working toward defining service levels that are centered on customer outcomes and service delivery. This includes striking a balance between expectations, affordability, and risk. The City is committed to engaging stakeholders to better understand evolving needs and incorporate them into future updates of the AMP.

6.13 Implementation Roadmap (Future Initiatives)

6.13.1 Long-Term Financial Plan (LTFP)

It is important that the City's financing strategy of the AMP continues to balance service levels with impacts to the City's financial resources. The City will be completing an LTFP to holistically review and consolidate all funding requirements and financial resources across the corporation. The AMP will be one of many inputs used to inform the LTFP and will allow the City to determine funding resources and strategies to support the AMP in stabilizing service levels.

6.13.2 Reserve and Reserve Fund Review

Capital reserves and reserve funds are important components of the City's capital financing planning and are used extensively for the maintenance and renewal of assets. Ensuring they continue to be utilized optimally and appropriately is vital to supporting the service priorities in the AMP. A comprehensive review of all the City's reserves and reserve funds will be completed as part of the long-term financial plan to ensure that funding provisions are strategically aligned with priorities across the corporation.

6.13.3 Asset Investment and Financing Plan Performance Monitoring

The following actions support asset investment and financing plan performance monitoring:

- Track key performance indicators (KPIs) such as:
    - Percentage of the asset funding gap closed annually.
    - Reserve fund balance as a percentage of the target.
    - Asset condition ratings over time.
- Track Asset Renewal Funding Ratio performance:
    - Compare actual asset renewal and replacement expenditure to previously forecast renewals to improve capital renewal forecasting.
- Develop an Asset Sustainability Ratio (ASR):

- Asset replacement expenditure relative to depreciation expense.

6.14 Summary

This AMP has been updated to meet the requirements of O. Reg. 588/17, which requires additional information to meet Clause 6 – Proposed Levels of Service.

Each of the requirements in Clause 6 of the regulation are listed in **Table 6-17**, with the City's response to each requirement.

Table 6-17: Response to the Clause 6 Regulatory Requirements

Requirement	Response
1-For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years	The City's proposed LOS is to maintain the current LOS over the 10-year period, with an overall corporate target to stabilize LOS across the City's assets. The City has selected three corporate LOS metrics: reinvestment rate, backlog and % Poor or Very Poor. The current LOS is presented in the State of Local Infrastructure reports (**Appendix B-1** to **B-11**) for each of the 11 service areas. The overall corporate summary can be found in Section 2 and **Appendix A-5**.
2-An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality	The proposed LOS aligns with the City's strategic plan and is consistent with the City's objective 5 – Delivering and maintaining fiscally sustainable services and infrastructure under Focus Area 4 – Driving Organizational Performance.
3- The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1	The performance of each asset category is measured by the Overall Service Index (OSI), a standardized numerical metric used to indicate an asset's position within its

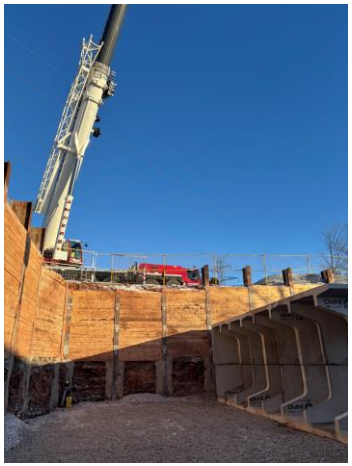
Requirement	Response
	lifecycle. It reflects the overall service status of an asset by incorporating one or more factors, depending on the asset type. For some assets, OSI is based solely on the condition index derived from inspection or inferred from age. For others, it combines age with specialized service indices such as the Pavement Quality Index (PQI) or Facility Condition Index (FCI). OSI scores range from 0 (new) to 6 (end of life), where each whole number marks the threshold between the service condition categories. See **Appendix A-5** for OSI scores for corporate (overall) and each service area for each year of the 10 years.
4- A lifecycle management and financial strategy that sets out the following information	N/A
Lifecycle activities	Lifecycle activities are listed in the **Appendix B-1 to B-11** (State of Local Infrastructure reports) for each service area.
Risks associated with options	Risks are presented in **Section 6.9**.
Estimate of annual costs for each of the 10 years for lifecycle activities, capital expenditures and significant operating costs.	Estimates of Annual SOGR Investments are presented in **Section 6.7,** Recommended SOGR Investments in **Table 6-15** and **Appendix A-6**. Operating costs in **Table 6-10**.
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.	Information provided in **Section 6.0**, Financial Strategy section of the AMP.
If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities, identify which lifecycle activities the municipality	TBD

Requirement	Response
will undertake and an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities.	
6-The estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 are to accommodate projected increases in demand caused by population and employment growth.	Information provided in the **Section 5.4 Growth**, specifically **Table 5-6** and **Appendix A-4** and **Appendix A-6**.
7- An explanation of any other key assumptions underlying the plan that have not previously been explained.	N/A

7.0 Continuous Improvement and Monitoring

The City of Burlington (City) has demonstrated a strong commitment to advancing asset management practices, prioritizing sustainable service delivery, long-term infrastructure planning, and regulatory compliance. To build on this foundation, the City has developed a framework for continuous improvement and monitoring that ensures its asset management strategies remain responsive, efficient, and aligned with community expectations.

Establishing a structured continuous improvement program enables the City to adapt to emerging risks, optimize asset performance, and extract maximum value from infrastructure investments. This approach supports proactive decision-making, enhanced service delivery, and improved transparency.



A tentative reporting and review schedule is provided below in **Table 7-1**.

Table 7-1: Asset Management Review and Reporting Schedule

Activity	Frequency
Update KPIs and service levels.	Annually
Asset condition assessments	3–5 years (asset-specific)
Risk assessment refresh	Every 2 years
AMP update	Every 5 years or as required
Council and Provincial reporting	Annually
Staff training and capacity review	Annually

The City adheres to the continuous improvement plan methodology shown in **Figure 7-1**, which provides a structured approach to advancing asset management practices over time.

Figure 7-1: Continuous Improvement Plan Methodology

7.1 Objectives of Continuous Improvement and Monitoring

- Ensure the long-term sustainability, performance, and efficiency of municipal assets.
- Strengthen data-driven decision-making to support infrastructure planning and budgeting.
- Improve service reliability and enhance risk mitigation.
- Increase accountability and stakeholder engagement.
- Support compliance with Ontario Regulation 588/17 and future regulatory frameworks.

7.1.1 Strategic Focus Areas for Improvement

- **Standardized Data Collection:** Develop and implement consistent data standards for all assets, including replacement value, age, and condition metrics.
- **Enhanced Condition Assessments:** Expand asset condition assessment programs to reduce reliance on age-based assumptions and improve forecasting for lifecycle interventions.
- **Service Level and Performance Updates:** Integrate regular updates to levels of service and performance indicators into the annual reporting process to reflect evolving expectations and regulatory requirements.
- **Integration of Master Plans:** Align asset management planning with master plan recommendations, incorporating new or revised service level targets.
- **Lifecycle Modeling Improvements:** Further analyze and enhance asset lifecycle models within the EAMS DSS.
- **Risk Management Enhancements:** Conduct detailed risk reviews to validate high-risk assets and develop mitigation strategies or prioritized capital projects.
- **Alignment with Annual Budget Process:** Improve coordination between asset management recommendations and the City's capital and operating budget cycles, ensuring that service levels and risk assessments inform funding decisions.

7.1.2 Monitoring and Evaluation Strategies

- **Performance Metrics:** Define key performance indicators (KPIs) for asset condition, lifecycle cost efficiency, service levels, and risk exposure.
- **Data Collection and Analysis:**
  - Implement real-time monitoring tools where feasible.
  - Conduct scheduled inspections and condition assessments.
  - Utilize predictive analytics to forecast future capital and operating needs.
- **Asset Management Maturity Assessment:** Conduct periodic evaluations of the City's asset management maturity to benchmark progress and identify gaps.
- **Council Reporting:** Provide annual updates to the Council, including progress on implementation, performance against targets, and emerging risks or funding pressures.

7.1.3 Continuous Improvement Strategies

- **Annual Review Cycles:** Conduct annual reviews of asset performance, budget alignment, service levels, and the application of emerging technologies.
- **Adaptation to Emerging Trends:** Integrate innovative technologies (e.g., AI) and solutions (e.g., EAMS), explore innovative delivery models, and assess alternative financing and funding approaches.
- **Training and Capacity Building:** Provide ongoing education and training for staff in data management, lifecycle planning, risk analysis, and service optimization.

7.2 Implementation Framework

- **Governance Structure:** Clearly defined roles and responsibilities across departments, senior leadership, and external partners to ensure coordinated action and accountability.
- **Resource Allocation**: Dedicated funding, staffing, and technology investments to support continuous improvement initiatives.

By embedding continuous improvement and monitoring into the asset management program, the City of Burlington will be better positioned to address emerging challenges, extend asset life, and deliver high-quality, reliable services to the community. This approach ensures that infrastructure decisions are transparent, risk-informed, and aligned with long-term strategic goals. See key actions and future initiatives in **Table 7-2**.

Table 7-2: Focus Area, Future Initiatives and Key Actions

Focus Area	Future Initiatives	Key Actions
Strategic Alignment	Inform update to Burlington's 25-year Strategic Plan	Include asset management commitments in the Council's strategic priorities or guiding principles.
Growth and Demand Management	Integrate growth infrastructure into Asset Management Planning	Update AM Plans to include new infrastructure from development. Reflect increased demand in lifecycle cost projections and risk assessments. Housing strategy alignment by ensuring the financial sustainability of growth, prioritizing infrastructure investments in strategic growth areas and coordinating capital delivery with housing development timelines.
Data-Driven Decision Making	Data improvement strategies	Asset inventory validation and addressing data quality and completeness gaps. Centralizing and integrating data systems (GIS / EAMS Work Order / DSS solutions). Asset creation business workflows.
Lifecycle Modelling Enhancements	Improve the accuracy and effectiveness of lifecycle planning	Refine lifecycle activity planning using the EAMS-DSS tool.

Focus Area	Future Initiatives	Key Actions
		Improve forecasting of capital renewal timing and costs across asset classes.
Climate Change Resilience	Embed climate change adaptation into asset strategies	Identify and include costs for climate-resilient upgrades in infrastructure projects (e.g., SWMPs). Forecast impacts of climate-related hazards on maintenance and renewal. Integrate climate as a risk driver in asset risk assessments (likelihood of failure).
Financial Alignment and Optimization	Align capital planning with external funding opportunities and sustainability goals	Track and forecast climate-related operating and capital costs. Align investment priorities with federal/provincial funding programs. Incorporate lifecycle and climate adjustments into budget development processes.


CITY OF
Burlington

City of Burlington

Asset Management Plan 2025

Appendix A

City of Burlington

Asset Management Plan 2025

Appendix A-1

Strategic Asset Management Policy

Corporate Policy

Roadways/Infrastructure

Strategic Asset Management Policy

Approved by Council on: Sept 23, 2019

Report Number: CW-30-19

Effective: July 1, 2019

Reviewed on:

Amended:

Next Review: July 1, 2024

Note:

1.0 Background

Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure in the Infrastructure for Jobs and Prosperity Act, 2015 sets out principles to guide asset management planning in Ontario municipalities.

The Strategic Asset Management Policy replaces the current corporate policy brought forward for Council approval in December 2016 (CW-32-16 – Asset Management Policy and Plan Update report).

2.0 Purpose

The Strategic Asset Management Policy (SAMP) describes the City of Burlington's commitment and direction for asset management and aligns with both the Corporate Strategic Plan and the priorities set out in the Vision to Focus plan . It outlines the principles that guide staff in the development and administration of corporate asset management.

It is intended to compliment and support the City's strategic plan and other core documents by:

- Outlining the guiding principles and requirements for implementing consistent asset management processes throughout the City;

- Affirming the City's ongoing commitment to ensure asset management processes are aligned and integrated into the City's strategic planning process and other key plans and policies; and
- Define asset management responsibilities and accountabilities for Council, leadership, management, and staff;

3.0 Corporate Alignment

The Strategic Asset Management Policy will support the following:

- City of Burlington 25-Year Strategic Plan
- Council and Leadership team workplan ('Vision to Focus')
- Long-term financial plan
- Asset or service-focused master plans
- Community energy plan
- Development Charges Background Study and Bylaw

The City shall take into account any applicable budgets or fiscal plans released under the following:

- Fiscal Transparency and Accountability Act, 2004
- Budgets adopted under part VII of the Municipal Act, 2001
- Ontario's Land Use Planning Framework
- Any relevant policy statements issued under subsection 3(1) of the Planning Act, any provincial plans as defined in the Planning Act and the City's Official Plan.

Most corporate plans rely on physical assets owned by the city and the commitment of staff to ensure their strategic use. This includes the long-term maintenance, repair, and replacement of existing assets along with the acquisition of new assets that meet the evolving needs of the community.

4.0 Scope and Responsibility

This policy applies to those service areas within the City that manage existing and new physical capital assets or asset systems, in the ultimate delivery of services to the citizens of the City of Burlington. Asset management does not replace existing corporate strategy, business planning and capital or operating investment planning processes already in place. Instead, it aims to complement and align to these initiatives, with the intent to provide an asset-centric point of view that supports business strategies, objectives and plans.

The policy requires the commitment of key stakeholders within the city's organizational structure. The following details the responsibilities of key stakeholders within the city.

Council

- Approves by resolution all asset management strategies and plans
- Receives annual updates of the city's asset management progress
- Approves by resolution infrastructure funding through the annual budget process
- Supports ongoing asset management continuous improvements and efforts needed to meet Ontario Regulation 588/17 requirements

Corporate Asset Management Committee / Corporate Infrastructure Committee

- A committee composed of staff leads representing all asset-focused service areas across the city
- The committee is responsible for the asset management planning across the municipality and maintaining compliance with the regulation
- The committee is responsible for the development of corporate asset management tools and practices and oversees their application across the organization
- The committee provides a forum for discussion of asset management strategy, integration and best practices

Asset Category Leads

- Oversees asset decision support activities that fall within their service area and in support of others.

Corporate Finance

- Oversees the management of the city's asset management financing plan to ensure its alignment with the city's long term financial plan
- Satisfies financial reporting requirements for assets based on capitalization thresholds which are separate from the asset management planning process
- Coordinates asset investment planning (budget development)

5.0 Policy

5.1 The City owns, operates, and maintains a number of infrastructure assets. Good asset management planning ensures that as infrastructure ages and deteriorates over time, assets will continue to meet defined levels of service over the long term, and will be managed for present and future users in a sustainable manner.

5.2 In order to meet organizational goals and objectives, the City of Burlington will aim to incorporate the following principles into service delivery and asset management practices:

5.2.1 **Holistic** – The City shall take a comprehensive approach to asset decision support and investment planning that considers the "big picture" and the combined impact of the whole asset life cycle. The City shall consider all assets in a service context and take into account the relationships between different asset types/classes to better optimize decision-making.

5.2.2 **Strategic and Forward Looking** – To meet future challenges the City shall take a long-term view when making decisions about infrastructure, including consideration of changing demographic and economic trends and future legislative requirements.

5.2.3 **Health & Safety Focus** – The City shall ensure that the health and safety of employees involved in the construction, renewal an maintenance of infrastructure is protected.

5.2.4 **Customer Service Focus** – The City shall have clearly defined levels of service that are focused on both customer outcomes and service delivery while balancing customer expectations with risk and affordability. The City will actively encourage community and stakeholder collaboration to better understand current and future stakeholder needs, to ensure they are incorporated into our asset management plans.

5.2.5 **Systematic** – The City shall adopt a formal, consistent and repeatable approach to asset management that is transparent and leverages data for evidence-based decision-making.

5.2.6 **Risk-based** – The City shall manage the risk associated with attaining defined levels of service by ensuring that resources, expenditures, and priorities are allocated based upon risk and associated cost/benefit and risk tolerance.

5.2.7 **Value-based affordable** – The City shall make asset investment decisions based on balancing service, risk and whole life cost. Asset life-cycle treatments chosen will aim to reduce the overall costs to the City while still meeting defined levels of service. The City shall apply full lifecycle costing principles when evaluating capital and operating asset investments.

5.2.8 **Sustainable** – The approach to service delivery is financially achievable over the long term, is not wasteful of resources, and minimizes the impact of infrastructure on the environment by augmenting resilience to the effects of climate change. The City shall take a "triple bottom line" approach to managing assets and making both short and long term infrastructure investment decisions.

5.2.9 **Environmentally conscious** – The City shall minimize the impact of infrastructure on the environment and manage the risks, and the increased cost required to manage risks, due to climate change. The City shall develop an approach for integrating climate change considerations throughout the asset management

process, and seek opportunities to increase community resilience to the impacts of climate change.

5.2.10 **Integrated** - The City shall continue to engage and coordinate our asset management activities with the Region of Halton (water, waste water, transportation services) and other neighboring municipalities to share best practices and information.

5.2.11 **Innovation and Continuous Improvement** – The City shall continually improve its asset management approach by making use of innovative technologies, services and practices.

6.0 Key Terms and Definitions

Asset: An item, thing or entity that has potential or actual value to an organization

Asset Life Cycle: The time interval that commences with the identification of the need of an asset and terminates with the decommissioning of the asset or any associated liabilities

Asset Management: The coordinated activity of an organization to realize value from assets. Involves the balancing of costs, opportunities and risks against desired performance of assets in order to achieve organizational objectives.

Asset Management Plan: A plan, or series of plans, developed by the City that specify the activities, resources and timescales required for an individual asset, or grouping of assets, to achieve defined level of service objectives.

Level of Service (LOS): The parameters of combination of parameters that reflect the social, political, economic, and environmental outcomes that the organization delivers. Levels of service statements describe the outputs or objectives an organization or activity intends to deliver to customers

City of Burlington

Asset Management Plan 2025

Appendix A-2 Condition Rating Scales

Condition Rating Scales

Table A-2-1: Condition Rating Scales

Condition Rating	Overall Service Index	Condition Score	Condition Score	FCI	PQI	BCI	Performance or Life Remaining	Definition
Very Good	1	100-80	5	0.01 - 0.02	80 - 100	86 - 100	"Very Good" or >80% of life remaining	The infrastructure in the system or network is generally in very good condition, typically new or recently rehabilitated. A few elements show general signs of deterioration that require attention.
Good	2	60-79.9	4	0.03 - 0.05	67 - 79	71 - 85	"Good" or 60 – 80% of life remaining	The infrastructure in the system or network is in good condition; some elements show general signs of deterioration that require attention. A few elements exhibit significant deficiencies.
Fair	3	40-59.9	3	0.06 - 0.1	55 - 66	61 - 70	"Fair" or 40 – 60% of life remaining	The infrastructure in the system or network is in fair condition; it shows general signs of deterioration and requires attention. Some elements exhibit significant deficiencies.

Condition Rating	Overall Service Index	Condition Score	Condition Score	FCI	PQI	BCI	Performance or Life Remaining	Definition
Poor	4	20-39.9	2	0.11 - 0.49	35 - 54	41 - 60	"Poor" or 20 – 40% of life remaining	The infrastructure in the system or network is in poor condition and mostly below standard, with many elements approaching the end of their service life. A large portion of the system exhibits significant deterioration.
Very Poor	5	0-19.9	1	0.5 - 1	0 - 34	0 - 40	"Very Poor" or <20% of life remaining	The infrastructure in the system or network is in unacceptable condition with widespread signs of advanced deterioration. Many components in the system exhibit signs of imminent failure, which is affecting service.
Unknown								This category is reserved for assets where data is either missing, not updated, or cannot be considered reliable. Flagging this data helps the departments identify where gaps in information exist and allows them to develop assessment plans to improve future data reliability and accuracy.

Legend:

FCI – Facility Condition Index (range from 0 to 1.0)

PQI – Pavement Quality Index (range from 0 to 100)

BCI – Bridge Condition Index (range from 0 to 100)

City of Burlington

Asset Management Plan 2025

Appendix A-3

Online Survey Results

Project Report

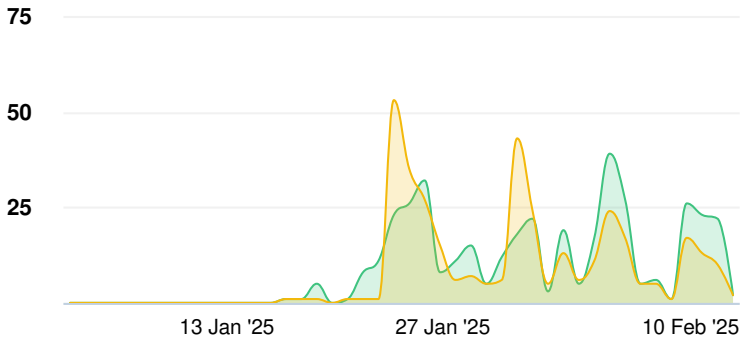
01 January 2025 - 13 February 2025

Get Involved Burlington

Asset Management Plan

GRANICUS

Visitors Summary



Highlights

TOTAL VISITS
385

MAX VISITORS PER DAY
53

NEW REGISTRATIONS
0

ENGAGED VISITORS
181

INFORMED VISITORS
206

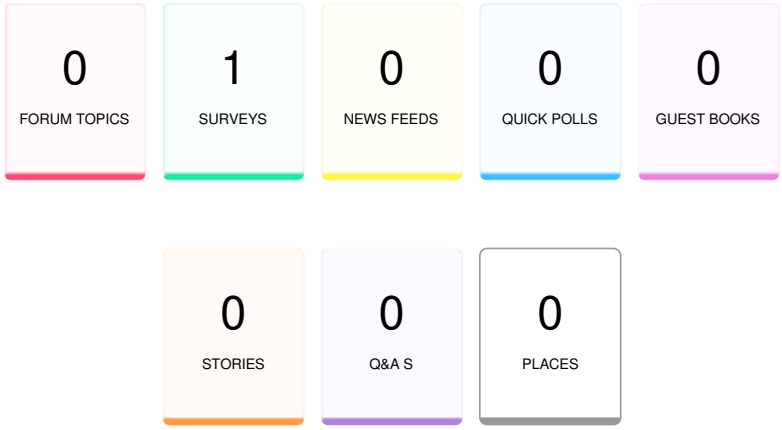
AWARE VISITORS
327

Aware Participants	327
Aware Actions Performed	**Participants**
Visited a Project or Tool Page	327

Informed Participants	206
Informed Actions Performed	**Participants**
Viewed a video	1
Viewed a photo	0
Downloaded a document	2
Visited the Key Dates page	0
Visited an FAQ list Page	0
Visited Instagram Page	0
Visited Multiple Project Pages	22
Contributed to a tool (engaged)	181

Engaged Participants	181		
Engaged Actions Performed	**Registered**	**Unverified**	**Anonymous**
Contributed on Forums	0	0	0
Participated in Surveys	5	0	176
Contributed to Newsfeeds	0	0	0
Participated in Quick Polls	0	0	0
Posted on Guestbooks	0	0	0
Contributed to Stories	0	0	0
Asked Questions	0	0	0
Placed Pins on Places	0	0	0
Contributed to Ideas	0	0	0

ENGAGEMENT TOOLS SUMMARY



Tool Type	Engagement Tool Name	Tool Status	Visitors	Contributors		
				Registered	Unverified	Anonymous
Survey Tool	Asset Management Plan Survey	Draft	220	5	0	176

INFORMATION WIDGET SUMMARY

1	0	2	0	0
DOCUMENTS	PHOTOS	VIDEOS	FAQS	KEY DATES

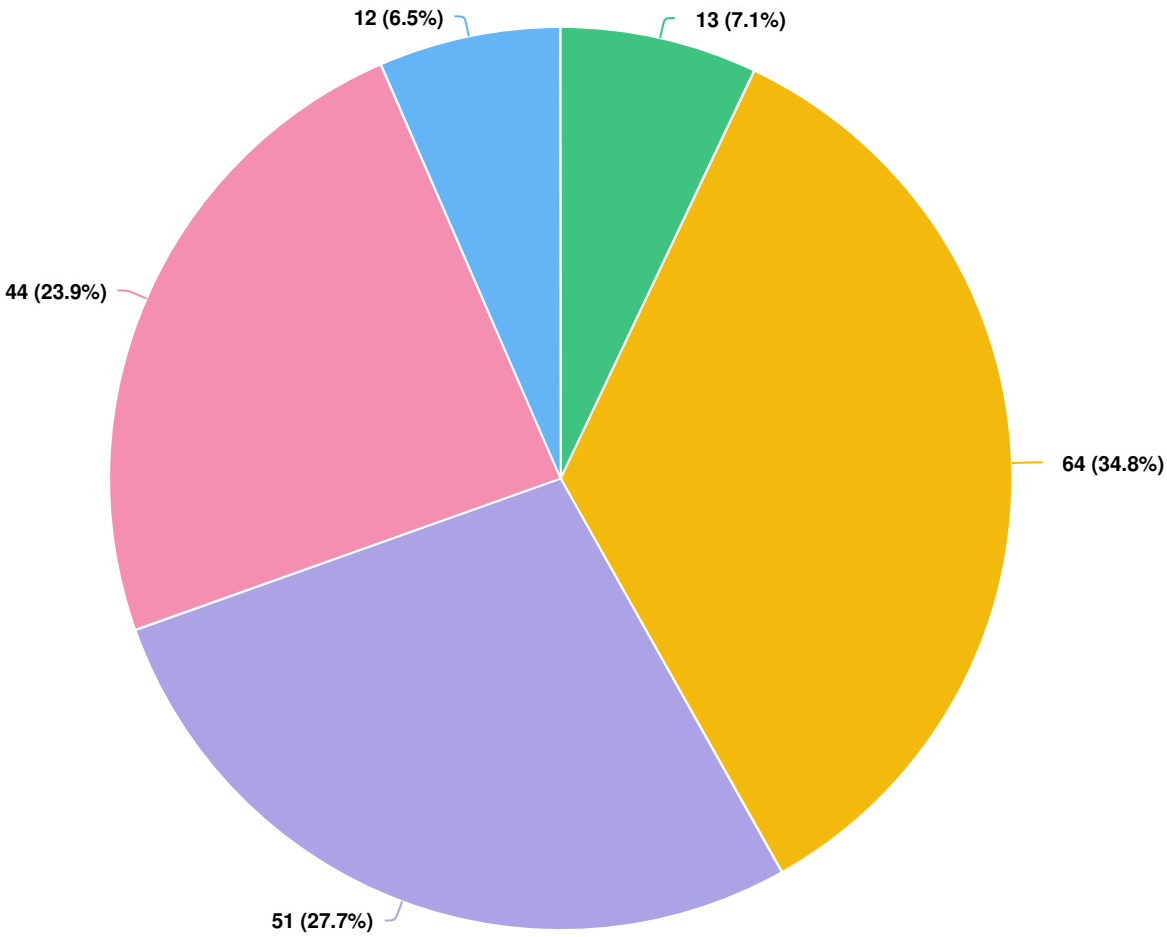
Widget Type	Engagement Tool Name	Visitors	Views/Downloads
Document	2021-Burlington-Asset-Management-Plan.pdf	2	2
Video	Implementing Asset Management	1	1
Video	Why invest in Asset Management?	0	0

ENGAGEMENT TOOL: SURVEY TOOL

Asset Management Plan Survey

Visitors 220	Contributors 181	CONTRIBUTIONS 184

How satisfied are you with transportation infrastructure?



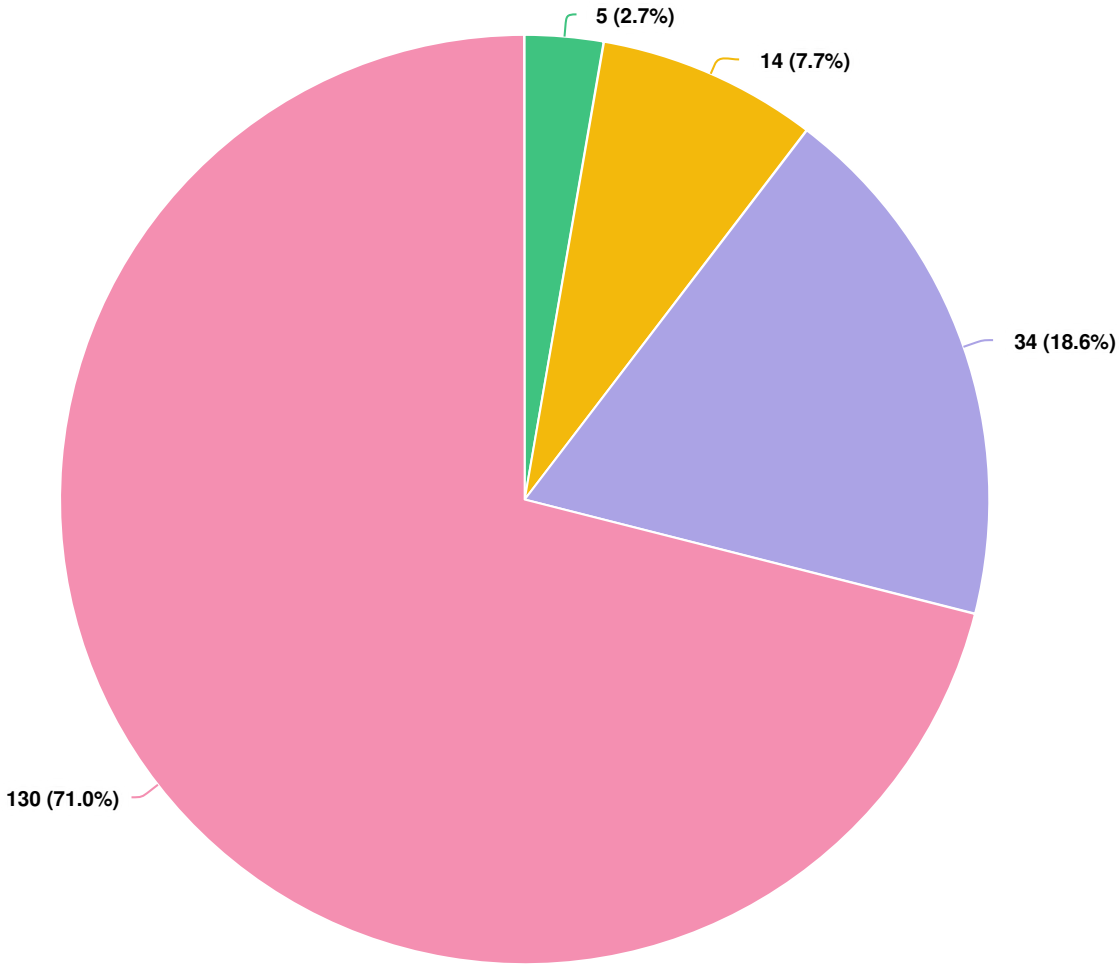
Question options

Very satisfied · Satisfied · Neutral · Dissatisfied · Very dissatisfied

Optional question (184 response(s), 0 skipped)

Question type: Radio Button Question

How often do you use transit infrastructure?



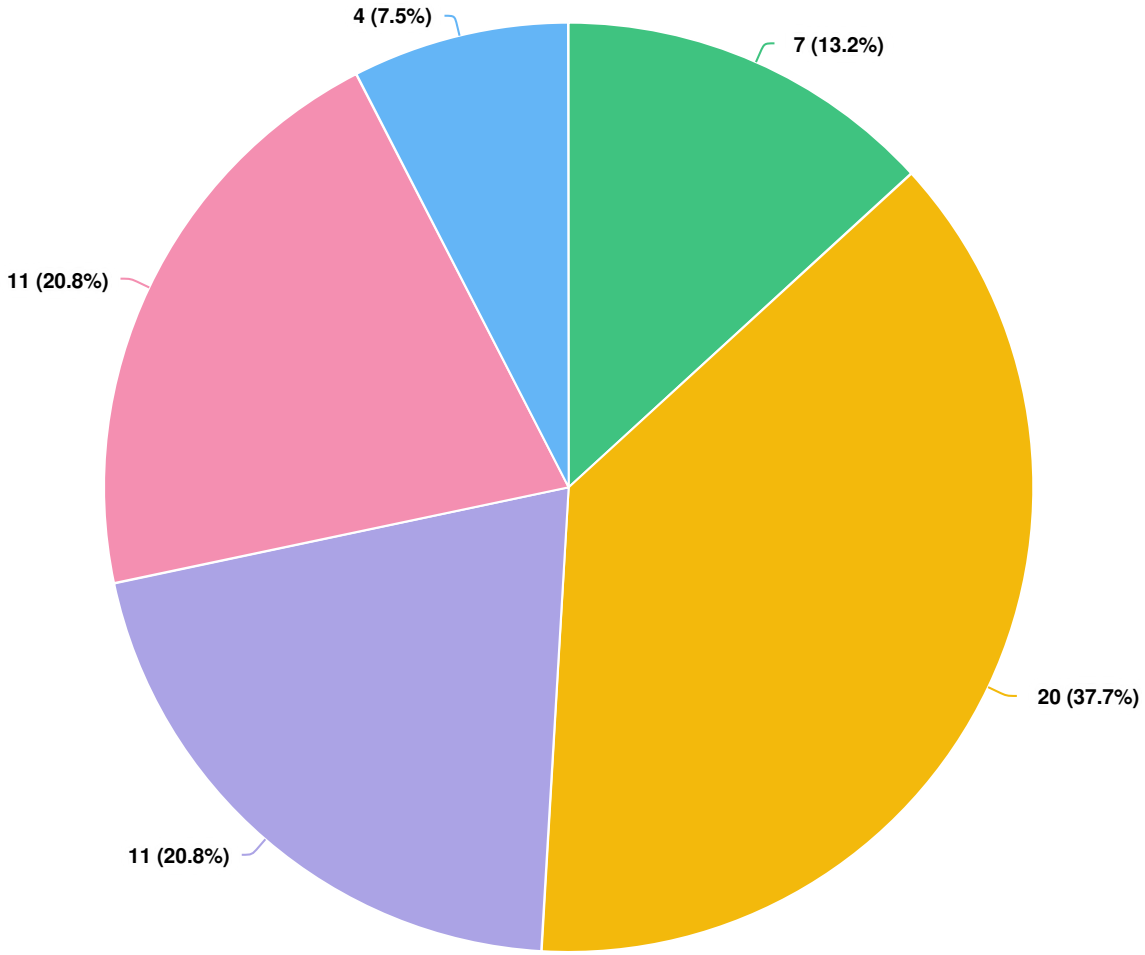
Question options

Daily Weekly Monthly Never

Optional question (183 response(s), 1 skipped)

Question type: Radio Button Question

How satisfied are you with the City's transit infrastructure?



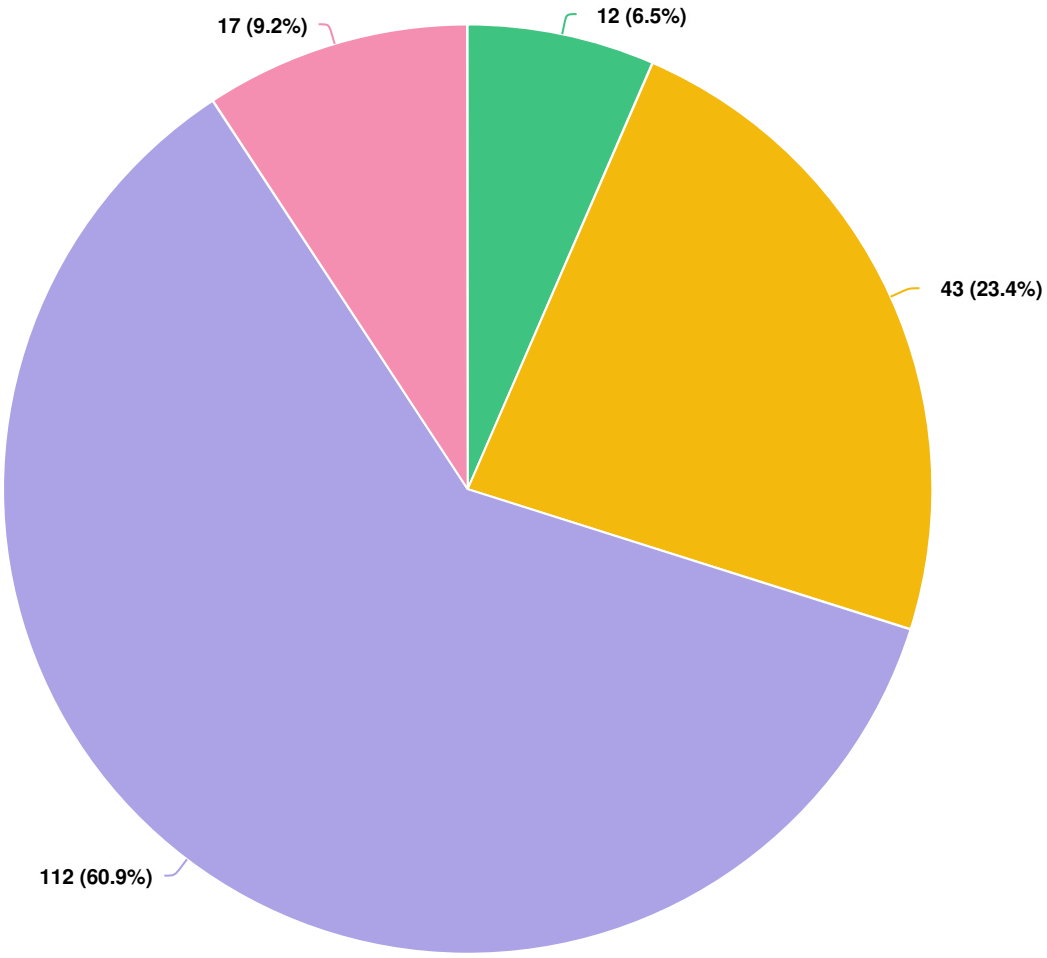
Question options

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Optional question (53 response(s), 131 skipped)

Question type: Radio Button Question

How often do you use parking infrastructure?



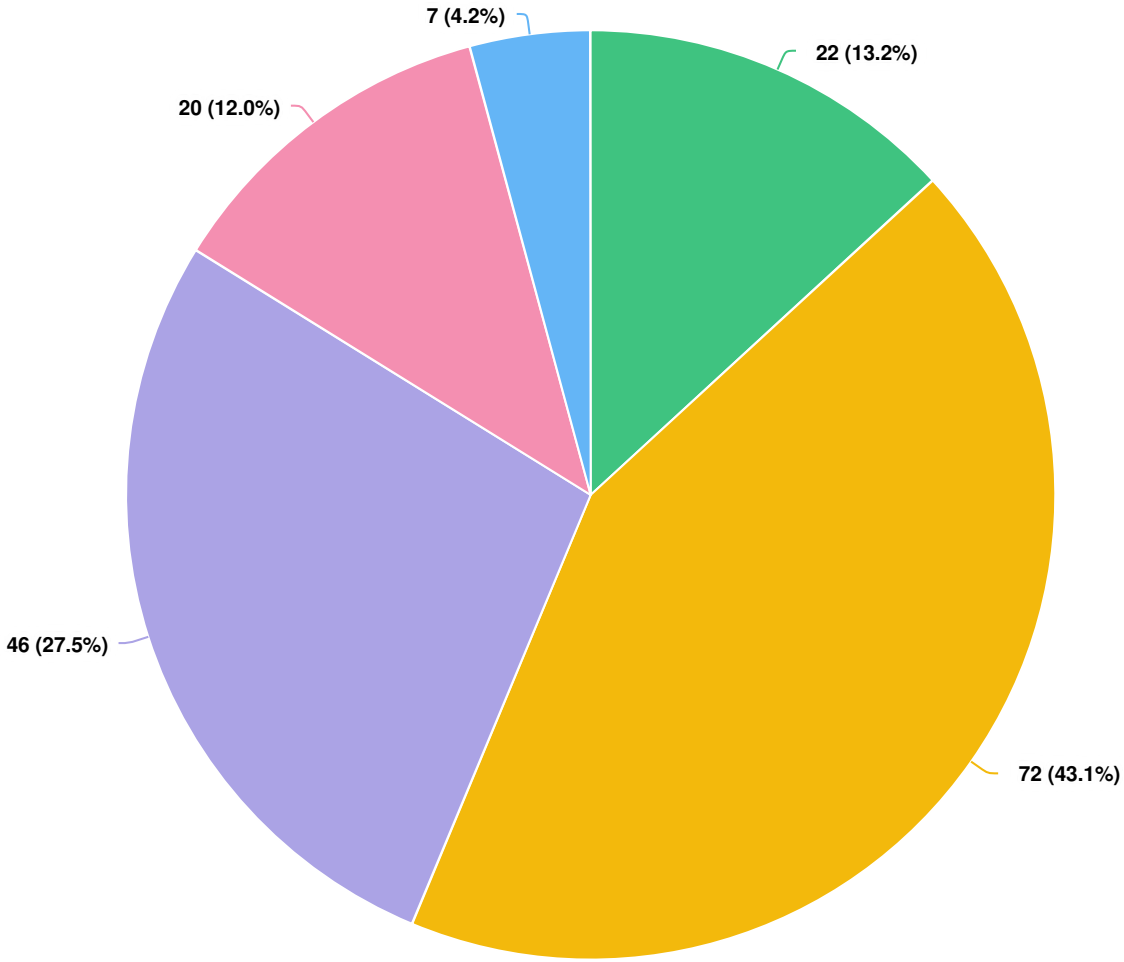
Question options

Daily Weekly Monthly Never

Optional question (184 response(s), 0 skipped)

Question type: Radio Button Question

How satisfied are you with the City's parking infrastructure?



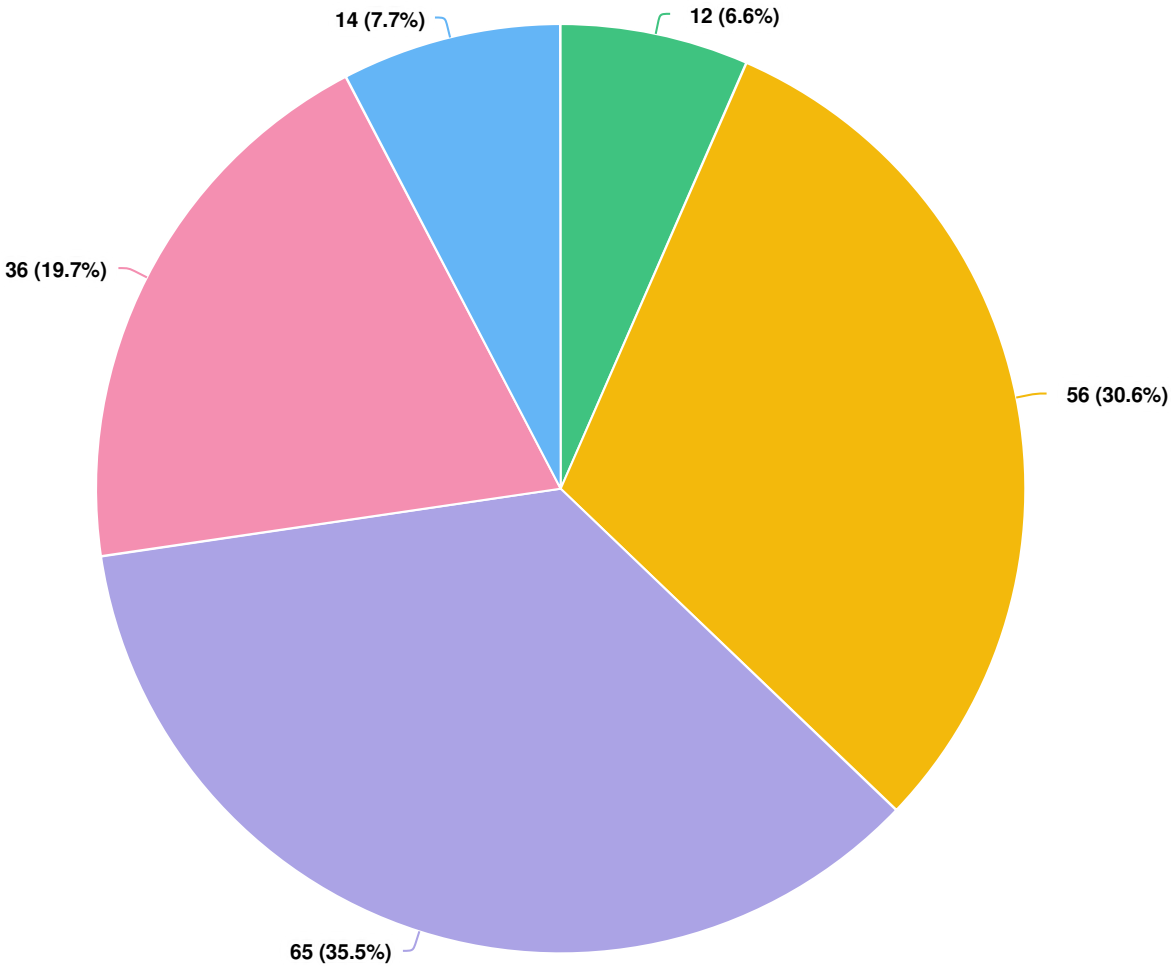
Question options

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Optional question (167 response(s), 17 skipped)

Question type: Radio Button Question

How satisfied are you with the City's stormwater infrastructure?



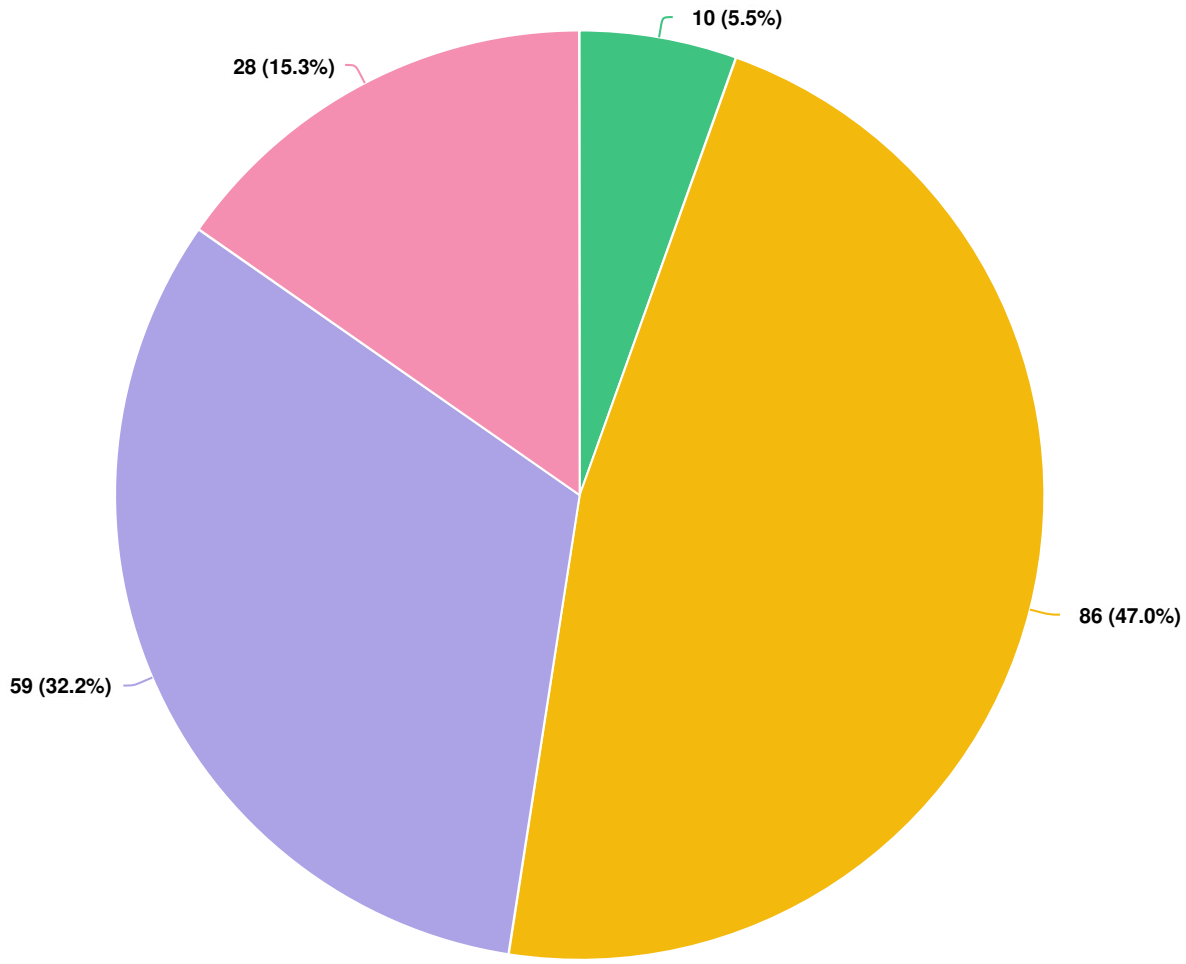
Question options

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Optional question (183 response(s), 1 skipped)

Question type: Radio Button Question

How often do you use recreation,community and culture facilities?



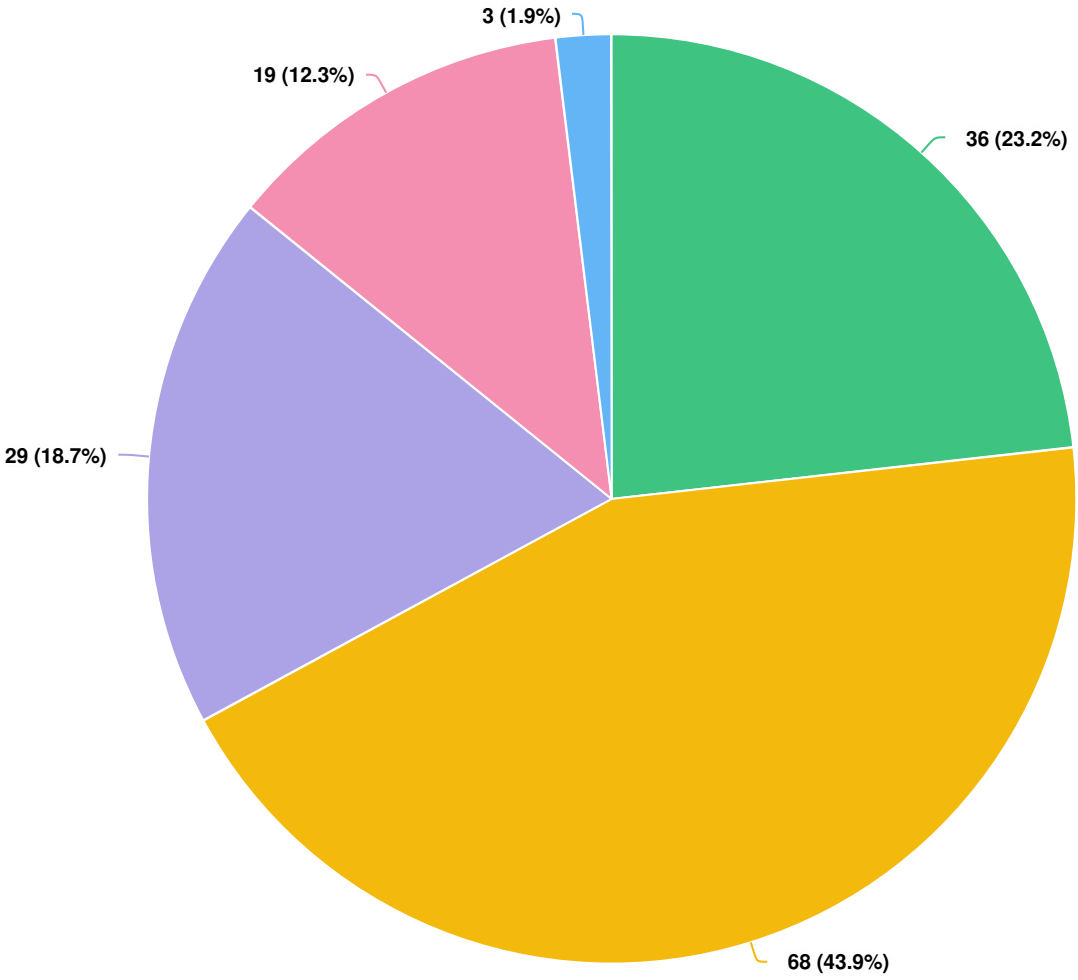
Question options

Daily Weekly Monthly Never

Optional question (183 response(s), 1 skipped)

Question type: Radio Button Question

How satisfied are you with the City's recreation, community and cultural facilitites?



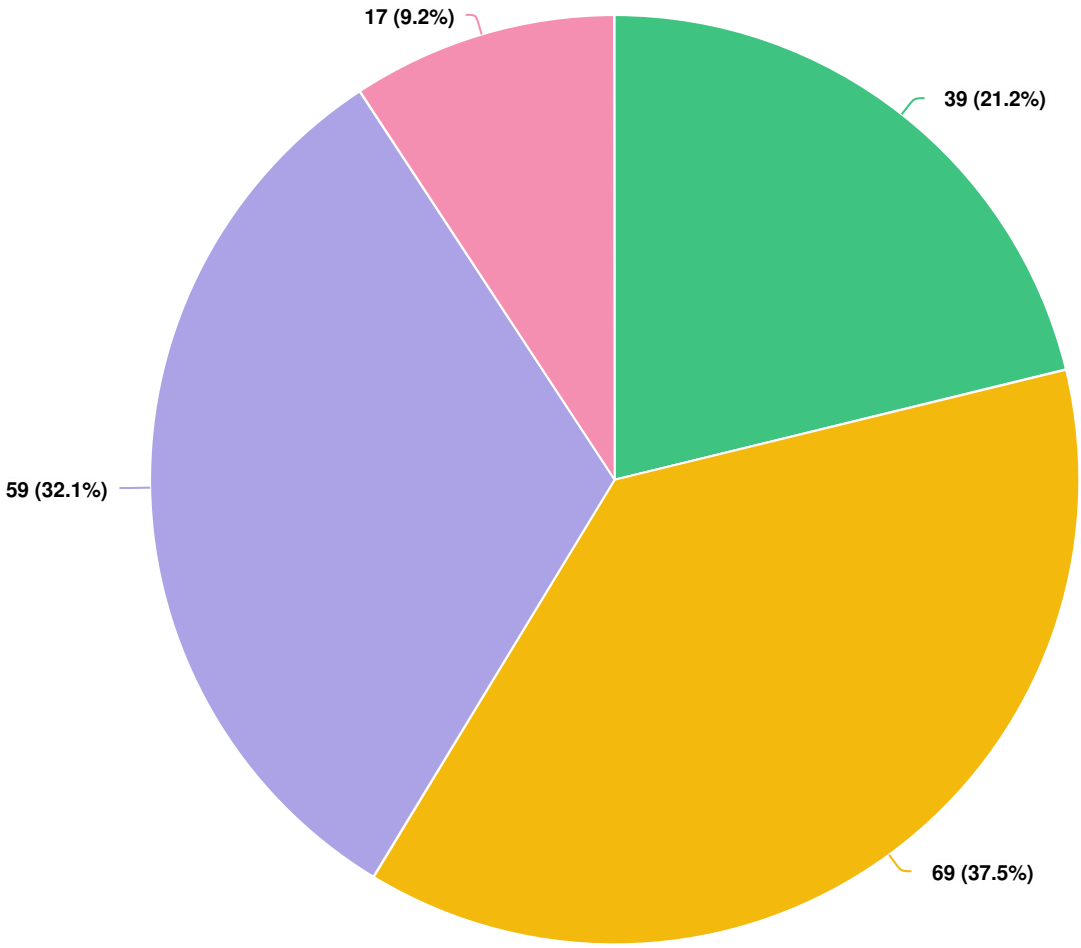
Question options

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Optional question (155 response(s), 29 skipped)

Question type: Radio Button Question

How often do you use assets in City Parks?



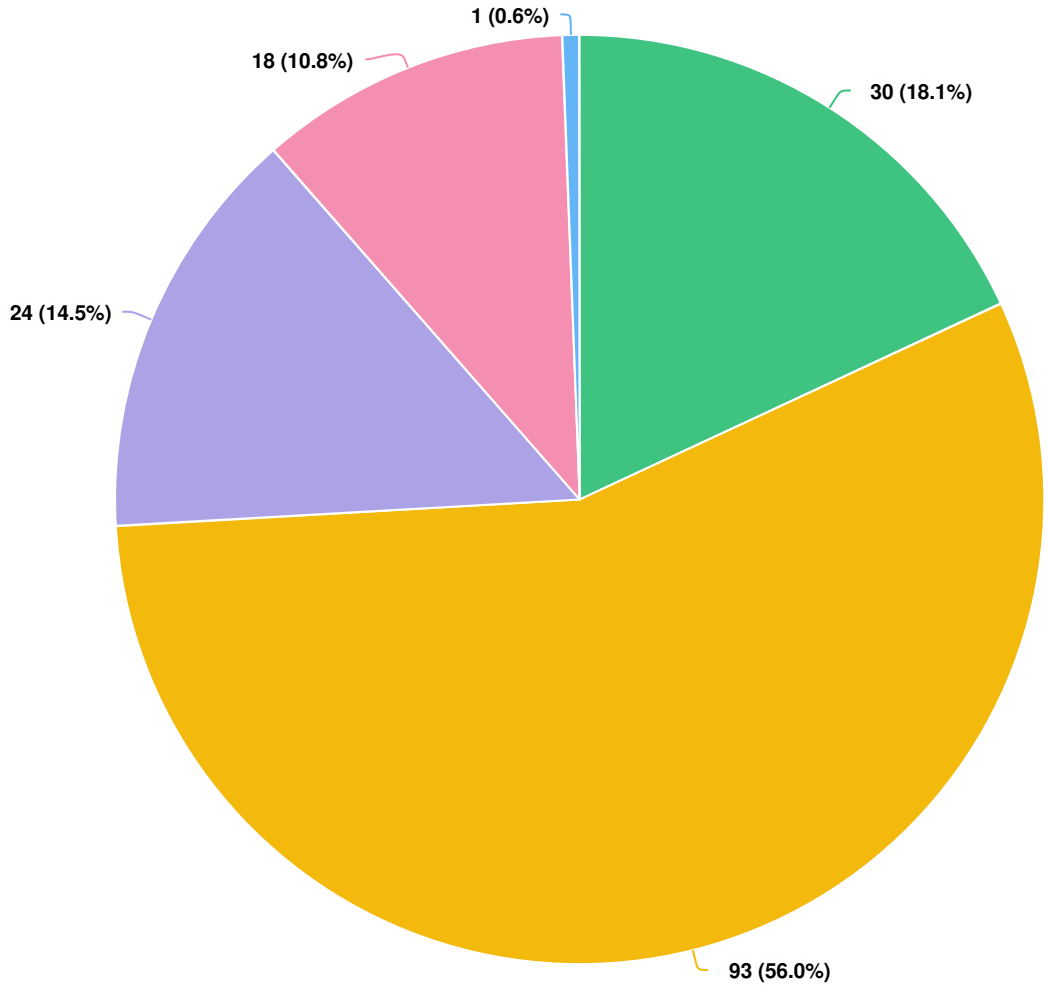
Question options

Daily Weekly Monthly Never

Optional question (184 response(s), 0 skipped)

Question type: Radio Button Question

How satisfied are you with the assets within the City's parks?



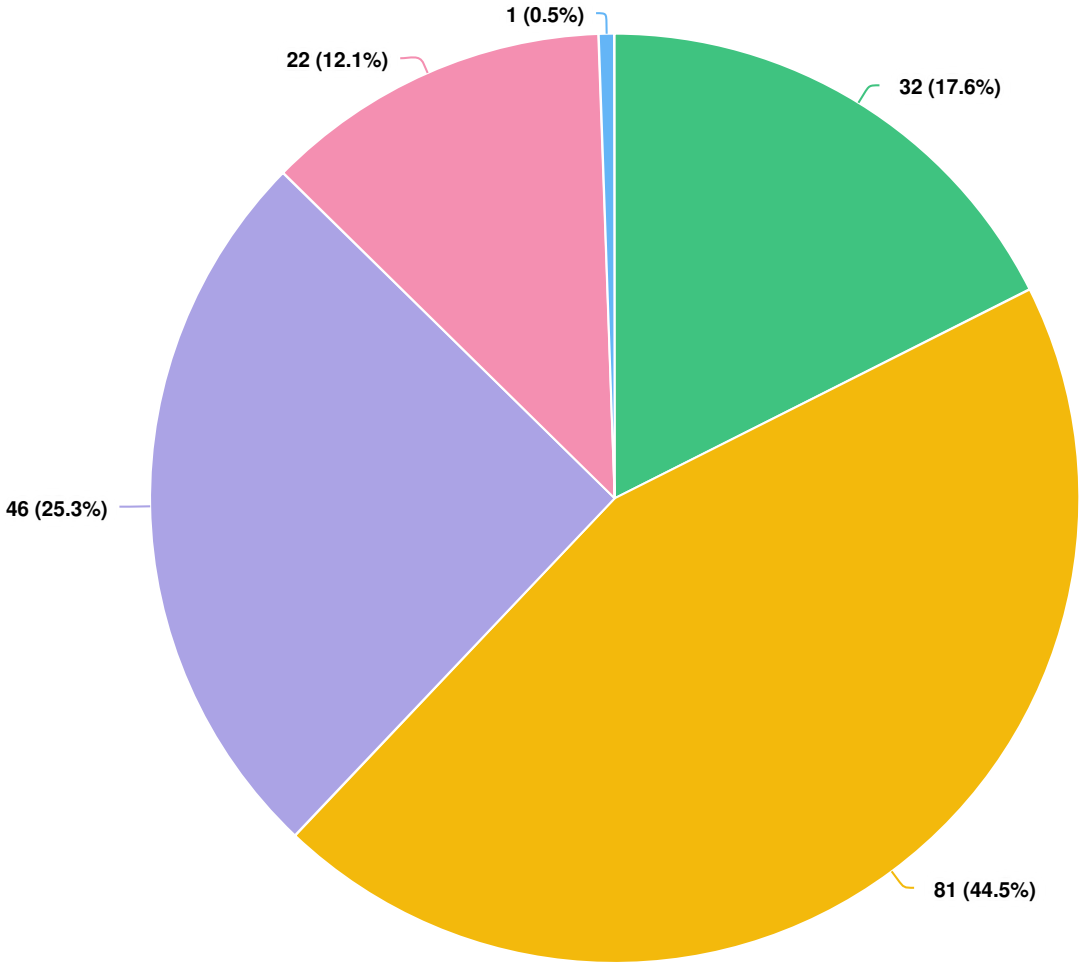
Question options

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Optional question (166 response(s), 18 skipped)

Question type: Radio Button Question

How satisfied are you with the City's trees and woodlots?



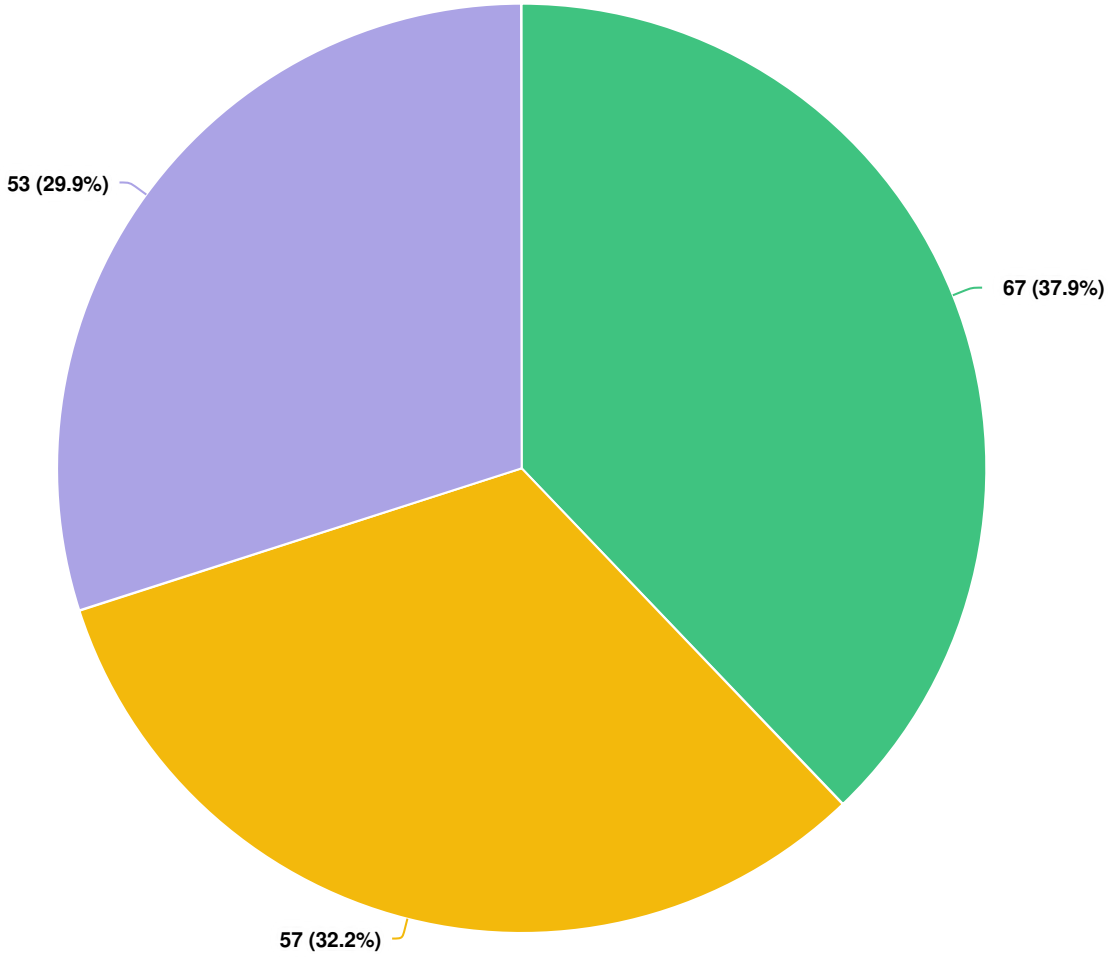
Question options

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Optional question (182 response(s), 2 skipped)

Question type: Radio Button Question

Based on your use/experience with the City's infrastructure, do you feel the City is investing enough in maintaining its municipal infrastructure?



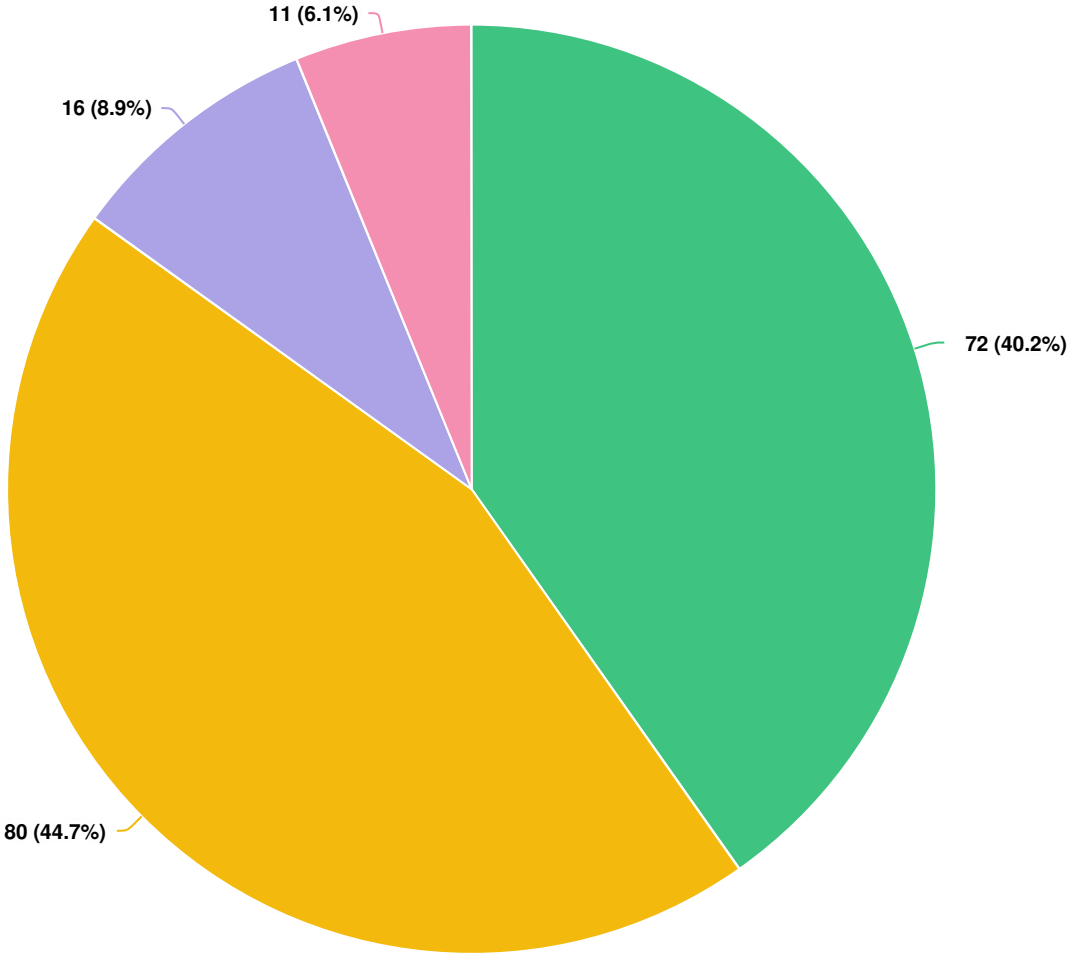
Question options

Yes No Unsure

Optional question (177 response(s), 7 skipped)

Question type: Radio Button Question

Which of the following options best reflects your willingness to pay in support of infrastructure management in the City?



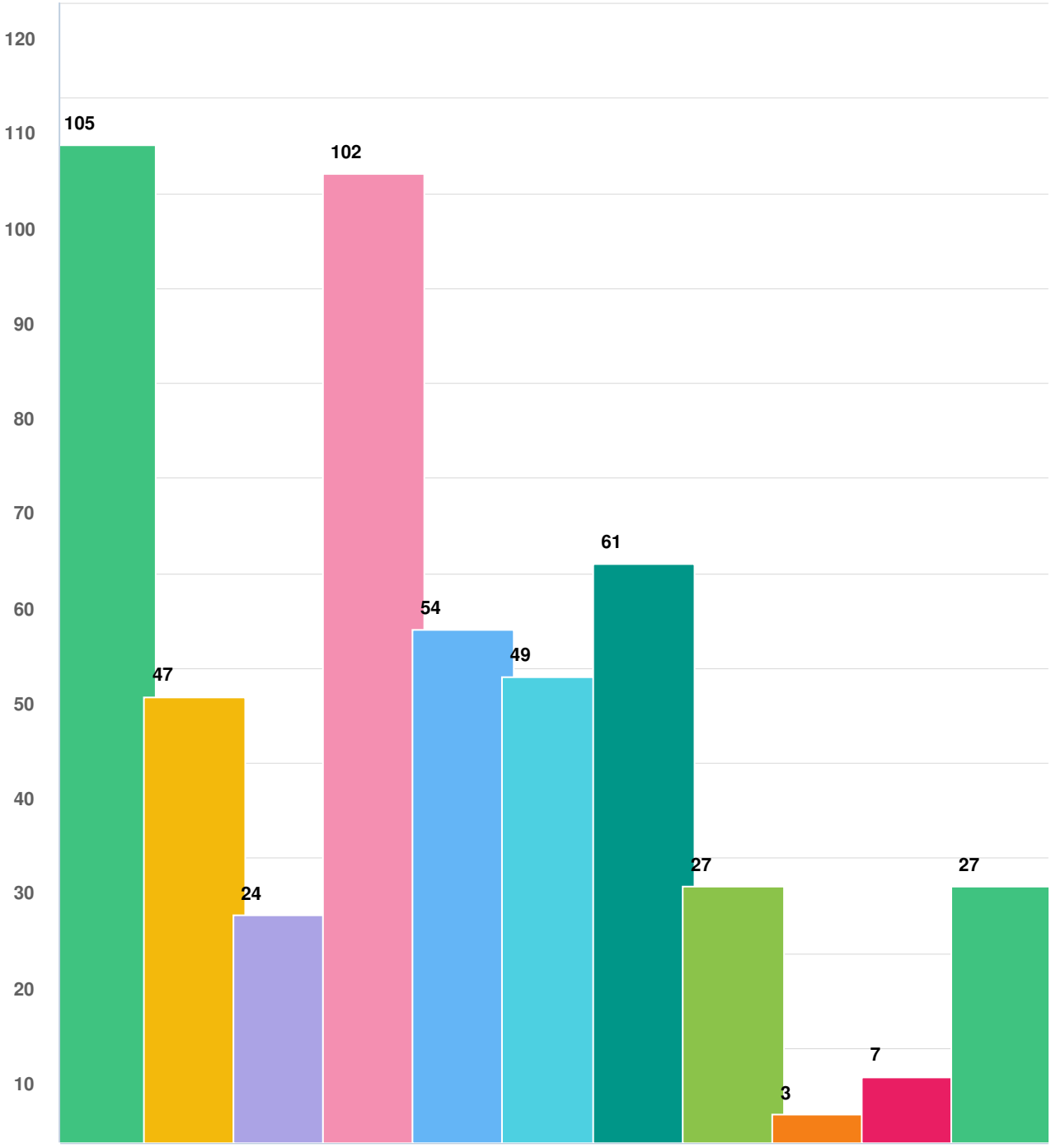
Question options

- The city maintain its current investment in infrastructure.
- The city increase investment in infrastructure, enhancing reliability/quality of the city's infrastructure.
- The city reduce investment in infrastructure, decreasing reliability/ quality of the city's infrastructure.
- Unsure

Optional question (179 response(s), 5 skipped)

Question type: Radio Button Question

The City needs to make difficult decisions on how to prioritize and allocate limited resources. Based on your use or experience with the City's infrastructure, please check off which of the following you would like to see improved or enhanced. (sel...



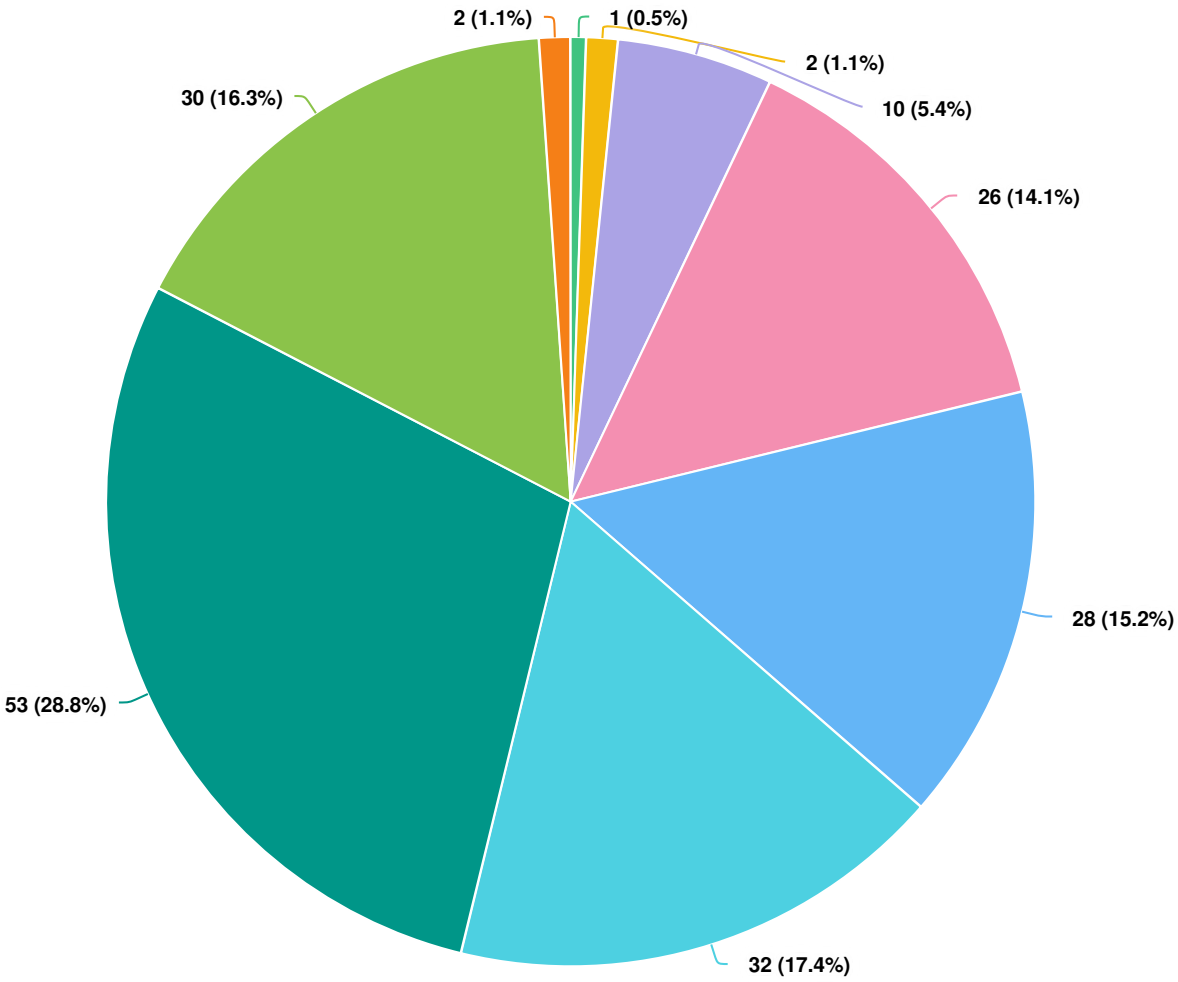
Question options

Roads and transportation infrastructure
Transit infrastructure
Parking infrastructure
Stormwater infrastructure
Recreation, community and cultural facilities
City park infrastructure
Urban forestry
Fire fleet and facilities
Corporate fleet
Corporate (administrative/operations) facilities
Information technology infrastructure

Optional question (173 response(s), 11 skipped)

Question type: Checkbox Question

Please select your age range.



Question options

Under 18 | 18 - 24 years | 25 - 34 years | 35 - 44 years | 45 - 54 years | 55 - 64 years | 65 - 74 years | 75 - 84 years | 85+ years

Optional question (184 response(s), 0 skipped)

Question type: Radio Button Question

City of Burlington

Asset Management Plan 2025

Appendix A-4 Growth Tables

Growth Tables

Table A-4-1: Growth-Related Cumulative Asset Replacement Value

Service Area	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Transportation	$34,892,468	$55,914,707	$71,834,207	$86,139,232	$90,206,857	$94,663,457	$107,481,207	$138,728,207	$178,818,207	$188,705,707
Stormwater	$18,505,147	$20,624,065	$22,067,508	$23,939,662	$25,429,662	$28,583,662	$31,058,662	$32,172,662	$32,172,662	$32,172,662
Recreation, Community and Culture	$22,900,000	$72,900,000	$91,900,000	$178,900,000	$233,400,000	$278,400,000	$328,400,000	$328,400,000	$328,400,000	$328,400,000
Urban Forestry	$37,679,096	$37,679,096	$37,679,096	$37,679,096	$75,358,191	$75,358,191	$75,358,191	$75,358,191	$75,358,191	$113,037,287
Parks	$33,980,374	$39,859,374	$40,259,374	$45,469,756	$50,310,510	$68,538,499	$71,153,231	$75,353,231	$78,234,765	$78,234,765
Corporate Facilities	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Transit	$98,000	$1,187,000	$1,635,000	$1,831,000	$60,826,000	$86,960,000	$86,960,000	$86,960,000	$86,960,000	$86,960,000
Fire	$12,013,603	$27,969,821	$28,019,821	$28,359,821	$42,220,440	$42,255,440	$54,387,003	$55,912,003	$55,912,003	$55,912,003
Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Information Technology	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Corporate Fleet	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cumulative Increase from Baseline	**$160,068,688**	**$256,134,063**	**$293,395,006**	**$402,318,567**	**$577,751,660**	**$674,759,249**	**$754,798,294**	**$792,884,294**	**$835,855,828**	**$883,422,424**

Table A-4-2: Growth-Related Operating Expenditure Lifecycle Costs

Service Area	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Transportation	$147,271	$235,999	$303,191	$363,568	$380,736	$399,546	$453,646	$585,530	$754,738	$796,471
Stormwater	$19,478	$21,708	$23,227	$25,198	$26,766	$30,086	$32,691	$33,863	$33,863	$33,863
Recreation, Community and Culture	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Urban Forestry	$357,022	$357,022	$357,022	$357,022	$714,045	$714,045	$714,045	$714,045	$714,045	$1,071,067
Parks	$566,179	$664,134	$670,799	$757,614	$838,271	$1,141,984	$1,185,551	$1,255,531	$1,303,543	$1,303,543
Corporate Facilities	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Transit	$4,036	$48,890	$67,343	$75,416	$2,505,311	$3,581,723	$3,581,723	$3,581,723	$3,581,723	$3,581,723
Fire	$143,106	$333,177	$333,773	$337,823	$502,931	$503,348	$647,860	$666,025	$666,025	$666,025
Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Information Technology	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Corporate Fleet	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Annual Operating Investment (Growth)	**$1,237,093**	**$1,660,932**	**$1,755,355**	**$1,916,641**	**$4,968,060**	**$6,370,732**	**$6,615,515**	**$6,836,718**	**$7,053,938**	**$7,452,692**

Table A-4-3: Growth-Related Capital Lifecycle Costs

Service Area	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Transportation	$784,382	$1,256,961	$1,614,831	$1,936,408	$2,027,848	$2,128,032	$2,416,175	$3,118,607	$4,019,829	$4,242,100
Stormwater	$359,082	$400,198	$428,207	$464,535	$493,448	$554,649	$602,675	$624,292	$624,292	$624,292
Recreation, Community and Culture	$430,979	$1,371,981	$1,729,561	$3,366,905	$4,392,597	$5,239,498	$6,180,500	$6,180,500	$6,180,500	$6,180,500
Urban Forestry	$781,299	$781,299	$781,299	$781,299	$1,562,597	$1,562,597	$1,562,597	$1,562,597	$1,562,597	$2,343,896
Parks	$1,361,214	$1,596,720	$1,612,744	$1,821,466	$2,015,381	$2,745,573	$2,850,316	$3,018,563	$3,133,994	$3,133,994
Corporate Facilities	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Transit	$6,094	$73,818	$101,678	$113,867	$3,782,677	$5,407,911	$5,407,911	$5,407,911	$5,407,911	$5,407,911
Fire	$430,932	$1,003,286	$1,005,079	$1,017,275	$1,514,460	$1,515,715	$1,950,878	$2,005,580	$2,005,580	$2,005,580
Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Information Technology	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Corporate Fleet	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Annual Capital Investment (Growth)	**$4,153,981**	**$6,484,263**	**$7,273,400**	**$9,501,755**	**$15,789,008**	**$19,153,977**	**$20,971,053**	**$21,918,051**	**$22,934,704**	**$23,938,274**

City of Burlington

Asset Management Plan 2025

Appendix A-5 Proposed LOS

Proposed LOS per Service Area

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
1	**Total**	**$454,680,807**	**16.74%**	**1.08%**
	Corporate Facilities	$1,881,293	0.19%	1.17%
	Corporate Fleet	$1,593,100	29.72%	7.11%
	Fire	$6,523,138	16.24%	2.42%
	Information Technology	$3,754,000	9.79%	3.11%
	Parking	$7,652,688	14.64%	1.13%
	Parks	$56,490,348	30.30%	2.28%
	Recreation, Community and Culture	$12,248,018	31.04%	0.79%
	Stormwater	$12,856,890	25.80%	0.50%
	Transit	$7,350,032	10.97%	4.90%
	Transportation	$335,718,935	7.83%	0.89%
	Urban Forestry	$8,612,365	4.57%	0.06%
2	**Total**	**$399,835,877**	**14.72%**	**1.08%**
	Corporate Facilities		33.56%	1.86%
	Corporate Fleet		26.16%	8.90%
	Fire	$4,060,996	15.00%	2.25%
	Information Technology	$2,750,000	25.17%	5.20%

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
	Parking	$6,478,599	13.98%	0.81%
	Parks	$47,351,385	28.04%	1.92%
	Recreation, Community and Culture	$6,526,150	12.60%	0.72%
	Stormwater	$5,916,987	24.47%	0.46%
	Transit	$1,758,032	10.83%	1.86%
	Transportation	$316,656,802	7.99%	0.93%
	Urban Forestry	$8,336,925	4.57%	0.01%
3	**Total**	**$392,890,657**	**15.01%**	**1.37%**
	Corporate Facilities	$423,025	33.56%	1.51%
	Corporate Fleet		25.92%	3.87%
	Fire	$6,853,678	13.79%	2.48%
	Information Technology	$1,925,000	13.06%	6.11%
	Parking	$6,422,599	14.04%	1.16%
	Parks	$40,232,804	26.57%	2.19%
	Recreation, Community and Culture	$18,122,747	12.59%	0.98%
	Stormwater	$2,783,173	24.90%	0.84%
	Transit	$5,564,576	11.03%	3.77%
	Transportation	$302,011,663	9.19%	1.28%

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
	Urban Forestry	$8,551,392	4.57%	0.93%
4	**Total**	**$372,010,242**	**15.56%**	**1.41%**
	Corporate Facilities		33.56%	1.15%
	Corporate Fleet		44.20%	7.12%
	Fire	$4,615,179	12.75%	3.63%
	Information Technology	$1,925,000	13.06%	6.83%
	Parking	$4,808,078	12.95%	0.59%
	Parks	$34,734,327	28.41%	2.19%
	Recreation, Community and Culture	$9,058,835	11.08%	0.89%
	Stormwater	$3,454,797	26.10%	1.03%
	Transit	$4,299,476	10.41%	3.11%
	Transportation	$304,502,181	10.17%	1.30%
	Urban Forestry	$4,612,370	4.57%	0.93%
5	**Total**	**$371,522,019**	**16.24%**	**1.69%**
	Corporate Facilities		33.56%	0.21%
	Corporate Fleet		47.44%	11.06%
	Fire	$4,845,188	22.13%	3.02%
	Information Technology	$8,675,000	53.78%	6.83%
	Parking	$7,989,733	13.05%	0.39%
	Parks	$32,468,896	27.11%	2.42%

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
	Recreation, Community and Culture	$3,874,206	9.43%	2.26%
	Stormwater	$2,345,278	28.04%	1.04%
	Transit	$1,664,576	7.88%	3.24%
	Transportation	$305,046,797	10.07%	1.47%
	Urban Forestry	$4,612,345	4.57%	0.93%
6	**Total**	**$359,559,555**	**16.88%**	**1.62%**
	Corporate Facilities		33.96%	0.78%
	Corporate Fleet		54.67%	9.70%
	Fire	$2,179,171	22.83%	3.24%
	Information Technology	$6,475,000	52.25%	10.13%
	Parking	$7,715,270	12.73%	1.44%
	Parks	$28,125,323	25.90%	2.25%
	Recreation, Community and Culture	$1,480,635	9.44%	1.31%
	Stormwater		28.00%	1.11%
	Transit	$1,664,576	19.68%	3.39%
	Transportation	$307,307,212	10.73%	1.45%
	Urban Forestry	$4,612,367	4.57%	0.93%
7	**Total**	**$369,613,197**	**17.23%**	**1.86%**
	Corporate Facilities		33.98%	0.31%
	Corporate Fleet		42.16%	12.85%

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
	Fire	$2,179,171	22.67%	1.68%
	Information Technology	$6,475,000	53.94%	10.58%
	Parking	$6,645,724	12.09%	0.08%
	Parks	$24,286,402	27.11%	2.20%
	Recreation, Community and Culture	$2,243,959	8.85%	0.94%
	Stormwater		27.26%	1.10%
	Transit	$1,778,576	19.98%	4.99%
	Transportation	$321,391,998	12.31%	2.09%
	Urban Forestry	$4,612,367	4.57%	1.86%
8	**Total**	**$348,351,959**	**17.02%**	**2.03%**
	Corporate Facilities		33.98%	0.17%
	Corporate Fleet		55.06%	10.45%
	Fire	$2,179,171	23.98%	4.40%
	Information Technology	$4,000,000	48.67%	16.44%
	Parking	$6,847,261	12.09%	0.08%
	Parks	$21,666,061	26.32%	3.05%
	Recreation, Community and Culture	$1,065,101	10.07%	1.26%
	Stormwater		26.48%	1.13%
	Transit	$1,778,576	8.29%	5.04%
	Transportation	$310,203,424	12.71%	1.96%

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
	Urban Forestry	$612,364	4.57%	1.86%
9	**Total**	**$379,253,808**	**16.91%**	**2.24%**
	Corporate Facilities		33.96%	0.85%
	Corporate Fleet		61.05%	15.70%
	Fire		22.87%	4.11%
	Information Technology	$22,195,000	74.34%	16.14%
	Parking	$8,835,949	12.34%	0.08%
	Parks	$18,875,290	25.23%	3.32%
	Recreation, Community and Culture	$821,400	10.08%	1.26%
	Stormwater	$3,625,087	23.89%	1.21%
	Transit	$3,568,876	7.68%	5.05%
	Transportation	$320,719,843	13.13%	2.30%
	Urban Forestry	$612,363	4.57%	1.86%
10	**Total**	**$380,489,447**	**17.40%**	**2.72%**
	Corporate Facilities		33.96%	0.22%
	Corporate Fleet		42.72%	10.89%
	Fire	$3,791,050	24.11%	10.95%
	Information Technology	$21,595,000	62.81%	19.10%
	Parking	$8,701,830	12.33%	0.08%
	Parks	$19,678,953	23.97%	3.46%

Table A-5-1: Proposed LOS per Service Area (Years 1 through 10)

Year	Service Area	Backlog Treatment Cost	% Poor or Very Poor (Weighted)	Reinvestment Rate
	Recreation, Community and Culture	$2,312,739	10.07%	1.29%
	Stormwater		23.25%	1.54%
	Transit	$4,393,576	30.36%	10.33%
	Transportation	$319,498,306	13.75%	2.52%
	Urban Forestry	$517,993	3.47%	1.86%

City of Burlington

Asset Management Plan 2025

Appendix A-6 20 Year Investment Table

Annual Investments Comparing Planned with Recommended SOGR

Table A-6-1: Annual Investments Comparing Planned with Recommended SOGR (Year 1 to 20)

Year	Planned SOGR Investment	Recommended SOGR Investment
1	$77,466,000	$77,466,000
2	$71,626,000	$71,626,000
3	$74,028,000	$97,733,000
4	$78,764,000	$100,851,000
5	$83,013,000	$121,066,000
6	$93,286,000	$115,810,000
7	$84,532,000	$133,027,000
8	$97,141,000	$145,260,000
9	$100,624,000	$160,270,000
10	$108,035,000	$194,801,000
11	$110,196,000	$199,013,000
12	$112,400,000	$178,139,000
13	$114,648,000	$147,956,000
14	$116,941,000	$174,123,000
15	$119,279,000	$170,083,000
16	$121,665,000	$205,136,000

A-6 20 Year Investment Table

Year	Planned SOGR Investment	Recommended SOGR Investment
17	$124,098,000	$153,500,000
18	$126,580,000	$138,396,000
19	$129,112,000	$163,979,000
20	$131,694,000	$152,407,000
Total	$2,075,128,000	$2,900,642,000

City of Burlington

Asset Management Plan 2025

Appendix B

City of Burlington

Asset Management Plan 2025

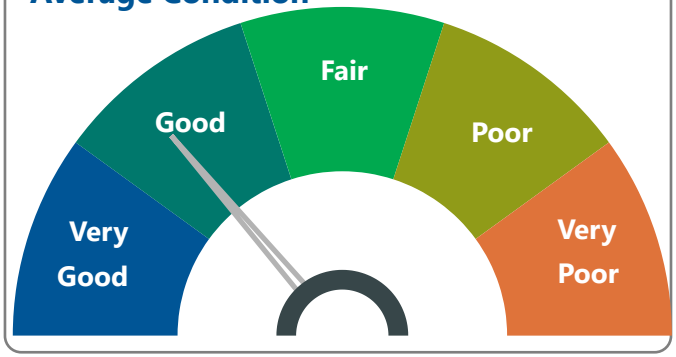
Appendix B-1 Transportation

State of Transportation Infrastructure

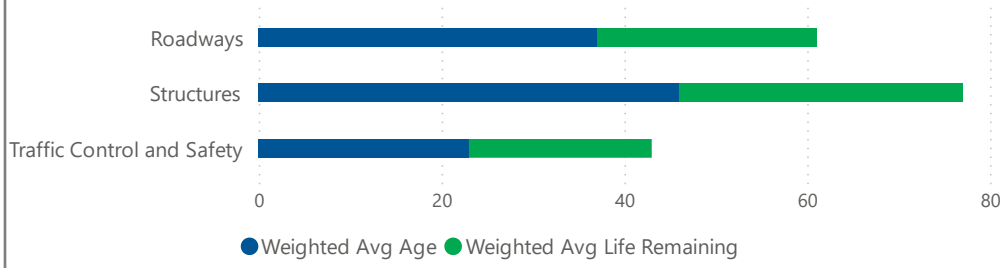
The City of Burlington is committed to providing a safe and reliable transportation network that supports all modes of transportation.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$2.73bn	Good	**Low**	Roadways	A-	38 | 64 years
			Structures	A	
			Traffic Control and Safety	C	

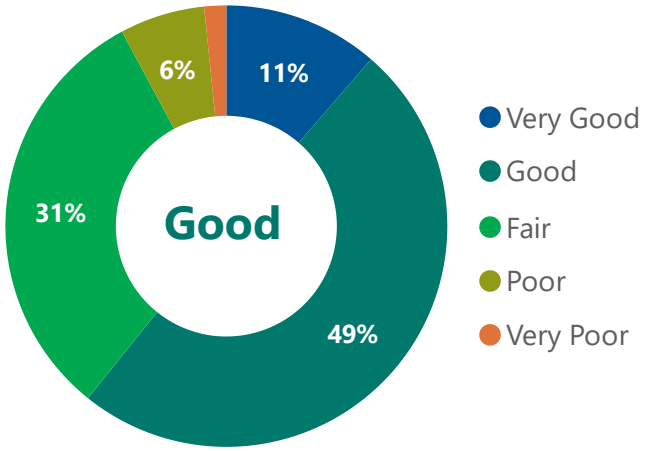
Average Condition



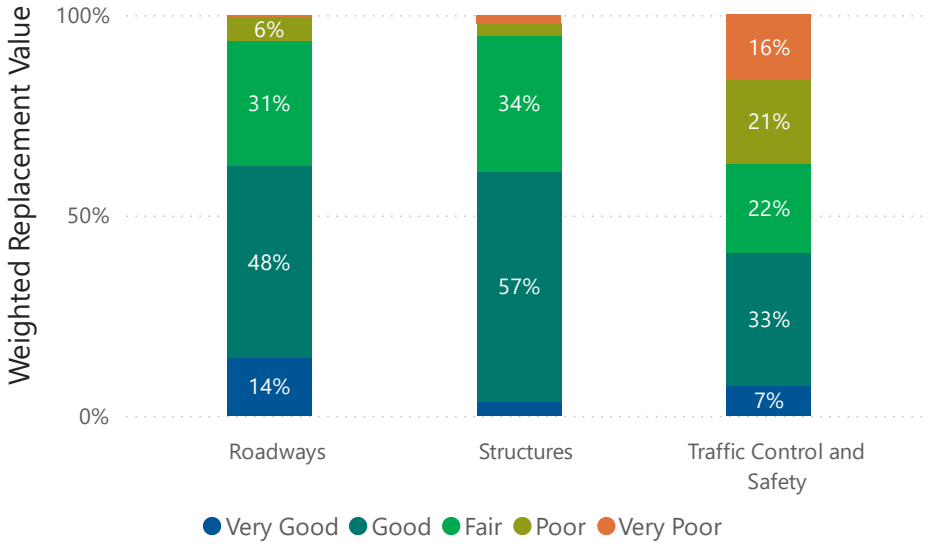
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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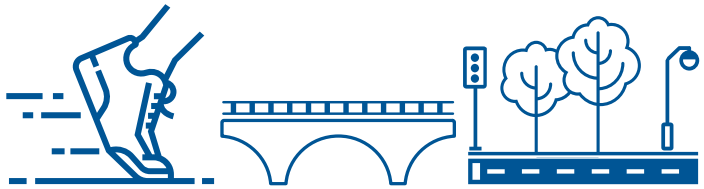


Transportation

Transportation infrastructure, including Roadways, Structures, and Traffic Control and Safety assets, plays an integral role in the daily life of the City's citizens, promoting business, creating employment, providing social opportunities, creating markets and saving lives. As such, efficient transportation infrastructure is crucial to building a strong economy and improving the quality of life for citizens.

Transportation infrastructure makes up the largest group of assets in terms of quantity and overall replacement cost. State of Good Repair (SOGR) needs will be planned to ensure long-term asset sustainability focused on user safety and reliability. Future Transportation infrastructure growth requirements will be guided by the City's Infrastructure Mobility Plan (IMP). The IMP will aim to provide:

- A wider range of transportation options, regardless of age, means or ability.
- The efficient transportation of more people with compact modes of transportation (such as buses, bicycles, and walking).
- A transportation system that is well-connected to other Regions.
- Fast, reliable and frequent transit.
- The improvement of facilities for cyclists and pedestrians.

1.0 State of Local Infrastructure

An efficient, dependable, and safe transportation network is a fundamental expectation of many members of the community. The City's portfolio of infrastructure assets for Transportation Services is valued at over $2.7 billion. This value comprises roadway assets valued at $1.9 billion, structure assets valued at $678 million, and traffic control and safety assets valued at $143 million.

Assets pertaining to the Roadways category include Local Streets, Active Transportation including sidewalks, pathways and cycling infrastructure, Primary and Secondary Collectors, and Arterials, with assets including the road base, drainage, asphalt, curb and gutter, islands, street furniture and others.

Assets pertaining to the Structures category include Bridges, Major Road Culverts, Noise Walls, and Retaining Walls.

To meet the City's transportation needs, the City also owns and operates many Traffic, Control and Safety infrastructure, with assets including Streetlights, Traffic Signs, Traffic Signals, and Guiderails.

The total replacement value for the Transportation infrastructure is $2,726.5 million, the average age is 38 years, and the average OSI condition is Good. See See **Table 1** for the asset inventory and valuation for each asset class as well as average age, average service life and average OSI condition.

Table 1: Asset Inventory and Valuation – Transportation

Asset Class	Asset Categories	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Roadways	Pedestrian Network	817 km	$167.8 M	32	60	Good
Roadways	Roads	1,600 lane km	$1,736.8 M	37	60	Good
Structures	Bridges	47	$284.0 M	52	80	Good
Structures	Major Road Culverts	107	$365.2 M	42	75	Good
Structures	Noise Walls	31	$11.9 M	32	60	Poor
Structures	Retaining Walls	199	$17.4 M	32	60	Fair
Traffic Control and Safety	Guiderails	22 km	$15.9 M	15	25	Fair
Traffic Control and Safety	Signs	34,999	$10.7 M	N/A	10	Good
Traffic Control and Safety	Streetlights	26,718	$91.7 M	27	48	Fair
Traffic Control and Safety	Traffic Signals	167	$25.1 M	27	58	Good

These replacement values were developed using historic construction costs and a standardized costing index.

Asset condition ratings are based on the Overall Service Index (OSI) for each asset. The OSI for roadways is based on both the age of the roadway and the Pavement Quality Index (PQI), which is calculated from recent road inspections observing the type and quantity of pavement distresses. The OSI for bridges and culverts is based on both the age of the structure and the Bridge Condition Index (BCI), which is determined by assessments completed every two years by City-retained consultants. The OSI for traffic control and safety assets is based on age or condition assessments, depending on the type of asset.

2.0 Levels of Service

O. Reg. 588/17 requires specific reporting on community and technical levels of service (LOS) for Transportation infrastructure, and these are noted in the following tables with an asterisk. In addition to the required reporting, the City has identified Operational Levels of Service, which is also reported. These metrics define the scope of the service delivered by Transportation infrastructure and the current performance of these assets.

The City has selected three standardized corporate LOS metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2025) for the Transportation service area.

Table 2: Standardized Corporate LOS Metrics – Current (2024) – Transportation

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	0.89%
Technical LOS	SOGR Backlog	$335,719,000
Community LOS	% Poor or Very Poor	7.83%

2.1 Levels of Service – Roadways

The City's roadway network includes 1,600 lane kilometres of roads and 817 km of pedestrian network. For the Community Levels of Service, see the map of the connectivity of the road network in **Figure 1**, which illustrates the scope of the service and the quality of the network presented in **Table 3**. The Technical Levels of Service are presented in **Table 4**, identified by the City.

Figure 1: Map of the Road Network in the City and the Level of Connectivity*

Table 3: Community Levels of Service – Roadways

PQI Condition Rating	Quality of Roads (photo)*	Current Performance 2024
Very Good PQI 80 - 100		39.9%
Good PQI 67 – 79.9		25.9%
Fair PCI 55 – 66.9		13.18%
Poor PCI 35 – 54.9		15.72%
Very Poor PCI 0 – 34.9		5.31%

* as required in O. Reg. 588/17 Table 4 (Roads)

Table 4: Technical Levels of Service – Roadways

Service Attribute	Performance Metric	Current Performance 2024
Scope	Number of lane-kilometres/km^2*	Arterial 1.92 Collector 1.59 Local 4.19
Reliability	Percentage of roads in Very Poor or unknown condition	5.31%
Quality	For paved roads in the municipality, the average pavement condition index value. *	72.6%
Quality	For unpaved roads in the municipality, the average surface condition (e.g., excellent, good, fair, or poor). *	N/A
Quality	Percentage of roads and sidewalks that meet the target condition level of Good or Very Good	63.31%
Scope	Percentage of spine cycling network completed, as identified in the IMP	27%
Quality	Percentage of urban class street network with a safe pedestrian facility	75.24%

* as required in O. Reg. 588/17 Table 4 (Roads)

2.2 Levels of Service – Structures

The City's transportation structures include 47 bridges, 107 major road culverts, 31 noise walls and 199 retaining walls. For the Community Levels of Service, see **Table 5,** which presents the quality of bridges and the current performance. The Technical Levels of Service are presented in **Table 6,** which is identified by the City**.**

Table 5: Community Levels of Service – Structures

BCI Condition Rating	Quality of Bridge (photo)*	Current Performance 2024
Very Good BCI 86 - 100		3.23%
Good BCI 71 – 85.9		66.24%
Fair BCI 61 – 70.9		27.87%

BCI Condition Rating	Quality of Bridge (photo)*	Current Performance 2024
Poor 41 – 60.9		2.66%
Very Poor 0 – 40.9		0%

* as required in O. Reg. 588/17 Table 5 (Bridges and Culverts)

Table 6: Technical Levels of Service – Structures

Service Attribute	Performance Metric	Current Performance 2024
Quality	Percentage of bridges and major culverts that meet the target condition level of Good or Very Good	61.66%
Reliability	Percentage of bridges and major culverts in Very Poor or unknown condition	0.29%
Quality	Percentage of bridges requiring minor or major repairs within the next 10 years	23.38%
Quality	Percentage of bridges requiring replacement within the next 10 years	7.79%
Scope	Percentage of bridges in the municipality with loading or dimensional restrictions. *	0%
Quality	For bridges in the municipality, the average bridge condition index value. *	70.55%
Quality	For structural culverts in the municipality, the average bridge condition index value. *	69%

* as required in O. Reg. 588/17 Table 5 (Bridges and Culverts)

2.3 Levels of Service – Traffic Control and Safety

The City's traffic control and safety infrastructure includes 22 km of guiderails, 34,999 signs, 26,718 streetlights and 167 traffic signals. The Technical Levels of Service are presented in **Table 7,** which includes the Operational Levels of Service identified by the City.

Table 7: Technical Levels of Service – Traffic Control and Safety

Service Attribute	Performance Metric	Current Performance 2024
Quality	Percentage of streetlights that meet the target condition level of Good or Very Good	47.58%
Quality	Percentage of traffic assets (signs, signals) that meet the target condition level of Good or Very Good	30.96%
Reliability	Percentage of traffic assets (signs, signals, lighting, guiderails) in Very Poor or unknown condition	16.22%

3.0 Asset Management Strategy

Table 8: Lifecycle Activities – Roadways

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	**Roadways:** Road Inspections per the Minimum Maintenance Standards (MMS) Sweeping Additional maintenance as per findings of MMS. Snow and ice removal maintenance - sanding and icing Road Clearing Pothole filling and curb repairs **Pedestrian Network:** Inspection as part of MMS Pedestrian Network clearing and sweeping	Deficiencies are not identified through patrols. Increased lifecycle costs if maintenance is done improperly or not as scheduled. It may contribute to premature asset failure service disruptions or pose health and safety risks. Customer dissatisfaction with road congestion, road closures and other disruptions. Liability due to failures or response times. Noncompliance with minimum maintenance standards. Aesthetic issues.
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	**Roadways:** Surface Treatment (Rural Roads) Localized Resurfacing - Minor mill and pave Minor Reconstruction Resurfacing Crack seal **Pedestrian Network:**	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Grinding Spot repairs Asphalt Patching Partial segment replacement Mud Jacking	Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	**Roadways:** Major Reconstruction **Pedestrian Network:** Full block replacements Replacements for accessibility (tactile plates, ramps, etc.) Replacement for utilities and developments As part of construction projects	Delays in construction projects may result in health and safety risks, higher costs, longer service disruption and customer dissatisfaction.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Roadways:** Integrated Mobility Plan (in development) Traffic Studies/Counts Monitoring active transportation volumes Visual inspections by road patrol Pavement Condition Assessment Safety/Collision reviews (i.e., if assets are being repeatedly struck) Pedestrian Network: Annual MMS inspections Integrated Mobility Plan Connectivity review as part of capital projects	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Visual inspections by road patrol Official Plan	
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality, and system reliability	**Roadways:** Official plan targets Master Plan/Integrated Mobility Plan MTSA (Major Transit Station Area) Studies Development requirements/requests Updated pavement and materials design processes Improvements or new infrastructure because of Regional Ministry of Transportation/Rail requirements Health and Safety requirements **Pedestrian Network:** As required through development As identified through the connectivity review and capital project development Targets from the official plan New City infrastructure because of Regional Bridges/MTO/Rail Based on accessibility requirements during replacement or at intersections Sidewalks that were not able to be built during development	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth. Master Plans may overestimate or underestimate required road expansions to accommodate for growth. Increased lifecycle costs. Health and Safety Improper renewal/rehabilitation can lead to decreased asset life, premature asset failure, unplanned failures, and service outages. Road disruption and congestion.
Disposal Activities Activities associated with disposing of an asset once it	**Roadways:** Asphalt Re-Use as backfill from milling	Improper disposal can lead to environmental impacts and expenses.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
has reached the end of its estimated service life or is otherwise no longer needed by the municipality	Re-use of asphalt in granular A and B in reconstruction Contaminated soils disposal **Pedestrian Network:** Disposed during construction	

Table 9: Lifecycle Activities – Structures

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	**Bridges and Culverts:** Expansion joint cleaning Culvert and grate cleaning and debris removal Inspections Waterway clearing Deck drain cleaning Erosion control repairs Retaining Walls and Noise Walls: Checked for damage as part of maintenance management system (MMS) Capping repairs or minor repairs	Deficiencies are not identified through inspections. Increased lifecycle costs if maintenance is done improperly or not as scheduled. It may contribute to premature asset failure, service disruptions or pose health and safety risks. Customer dissatisfaction with bridge closures and other disruptions.
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	**Bridges and Culverts:** Deck resurfacing and waterproofing Minor Bridge/Culvert Rehabilitation Major Bridge/Culvert Rehabilitation Capital Bridge/Culvert Repairs **Retaining Walls and Noise Walls:** Adjustments to meet current design standards Noise wall panel repair and replacements Repairs when damaged or defects	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Changes to asset use, modernizing systems and adjusting to increasing levels of customer and employee service.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	**Bridges and Culverts:** Bridge/Culvert Replacement **Retaining Walls and Noise Walls:** Replacements of retaining walls and noise walls based on condition assessments, project coordination, and updated design standards Replaced if the damaged extension is considerable or defects	Risk of road collapse if the deteriorated culvert is not replaced, increasing risk to public safety, transportation. Delays in construction projects may result in health and safety risks, higher costs, longer service disruption and customer dissatisfaction.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Bridges and Culverts:** Environmental Assessments and/or capacity studies OSIM Inspections and/or additional investigations Review of all components (code compliance) Visual inspections by road patrol Integrated Mobility Plans **Retaining Walls and Noise Walls:** OSIM inspections on walls Visual inspections by road patrol Noise studies (for noise walls)	**All Assets:** Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding.
Expansion / Service Enhancements Planned activities to improve an asset's capacity,	**Bridges and Culverts:** Requests from Council/Community (Typically AT structures and grade separations)	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
quality, and system reliability	Sidewalk and structure modifications, as identified through the IMP Adjustments due to capacity requirements Addition of lighting, beacons, and signals New City infrastructure due to Regional Bridges/MTO/Rail **Retaining Walls and Noise Walls:** New roads/road reconstruction Installation of noise walls Infill development can trigger new noise walls Based on individual studies/hazards	Master Plans may overestimate or underestimate required road expansions to accommodate for growth.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	**Bridges and Culverts:** Through construction **Retaining Walls and Noise Walls:** Dispose during construction or replacement as needed	Improper disposal can lead to environmental impacts and expenses.

Table 10: Lifecycle Activities – Traffic Control and Safety

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	**Streetlights, Traffic Signals, Signs and Guard Rails:** Issues reported and repaired as part of MMS Defective signs/signals/lights Reports/complaints Accident reports Annual sign retro-reflectivity review (MMS) Annual Streetlight night patrols (MMS) Periodic patrols of bollards/flex posts Downtown Pole painting Traffic Signal inspections (MMS) Signal conflict monitor testing (MMS) Signal System outputs Street light Pole condition assessments	Deficiencies are not identified through inspections. Increased lifecycle costs if maintenance is done improperly or not as scheduled. May contribute to premature asset failure, service disruptions, or pose health and safety risks. Customer dissatisfaction with road congestion, road closures and other disruptions. Aesthetic concerns (i.e., pole painting)
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	**Streetlights, Traffic Signals, Signs and Guard Rails:** Replacement of signal components (Controller, Heads, Wiring, Poles) Replacement of streetlighting (LED fixtures, decorative lighting) Annual pavement marking retrace Traffic signals/streetlighting renewal budgets	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Health and safety risks due to missing or falling signage or malfunctioning streetlights /signals.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
		Changes to asset use, modernizing systems and adjusting to increasing levels of customer and employee service.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	**Streetlights, Traffic Signals, Signs and Guard Rails:** When damaged or when retro reflectivity does not meet requirements Utility relocation Changes to legislation Replacement as part of reconstruction or other projects (i.e., roads project)	Delays in construction projects may result in health and safety risks, higher costs, longer service disruption and customer dissatisfaction. Health and safety risks due to missing or falling signage or malfunctioning streetlights. Delayed traffic signal replacements will lead to increased traffic congestion at intersections and further service disruption.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Streetlights, Traffic Signals, Signs and Guard Rails:** Retroreflectivity Assessment Program Visual inspections by road patrol Traffic signalization and optimization studies	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding. Energy consumption and costs are not reduced. Inefficient signal timing leading to traffic congestion at intersections. Incorrectly updated signal timings may pose health and safety risks.
Expansion / Service Enhancements Planned activities to improve an asset's capacity,	**Streetlights, Traffic Signals, Signs and Guard Rails:** Added based on studies or new development	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
quality, and system reliability	Proper budgeting through capital works for operating and maintenance of new infrastructure	Master Plans may overestimate or underestimate required road expansions to accommodate for growth. Health and safety risks due to lack of signage or proper lighting.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	**Streetlights, Traffic Signals, Signs and Guard Rails:** Dispose during construction or replacement as needed	Improper disposal can lead to environmental impacts and expenses.

4.0 Risk

4.1 Internal Risk

Risk, as discussed in Section 5, is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure x Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

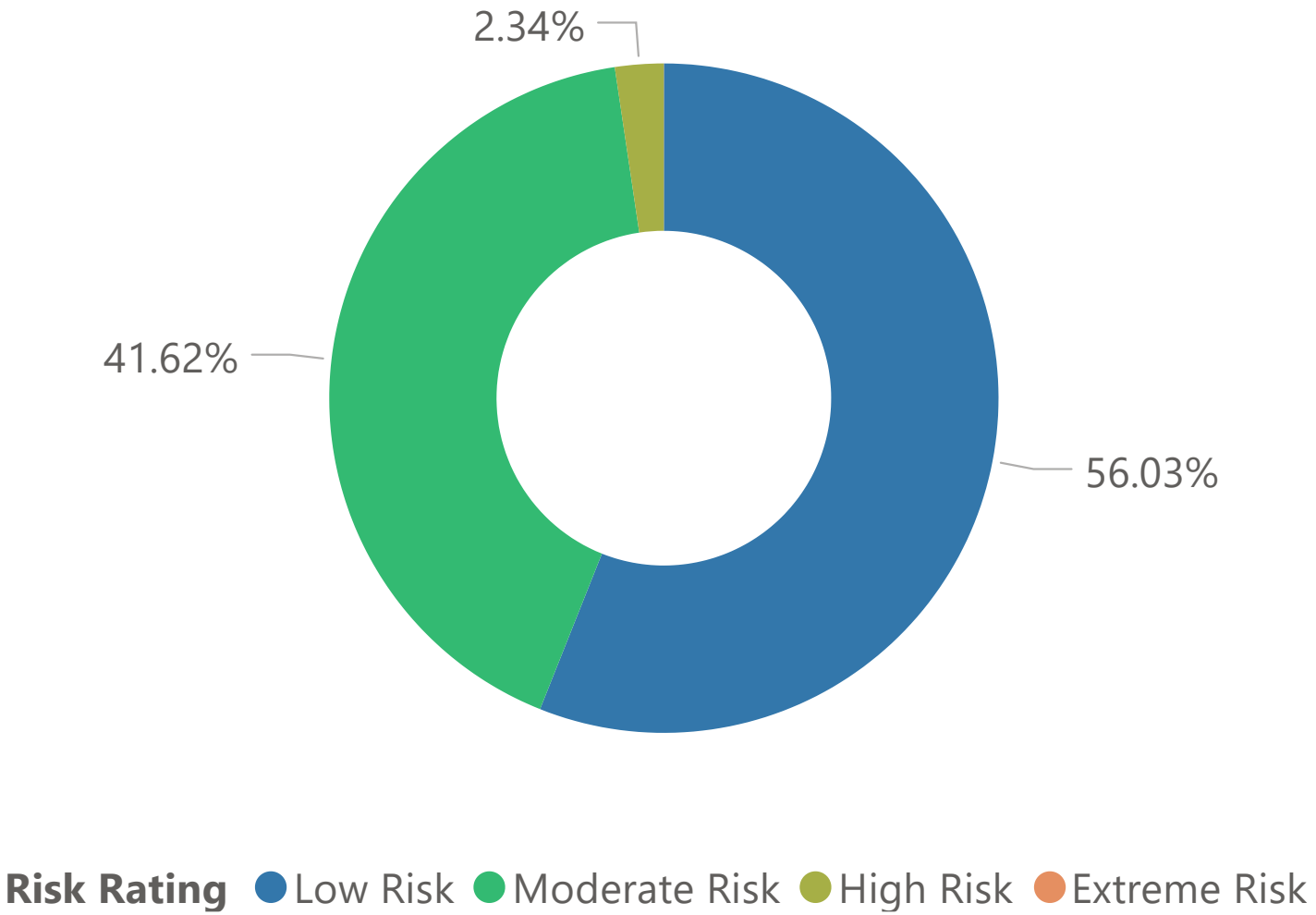
The triple bottom line **consequence of failure** factors are presented in **Table 11** for social, financial and environmental consequences.

Table 11: Consequence of Failure Factors – Transportation

Social	Financial	Environmental
• Road Classification • Route criticality • Asset has regulated inspection requirements • Within the CH Regulation Limit	• Replacement Value	• Proximity to water

See **Figure 2,** which presents the percentage of assets (weighted), showing the majority of assets with risk scores of low to moderate, only 2.34% with high risk and none with extreme risk.

Figure 2: Risk Rating by Replacement Value – Transportation



4.2 External Risk

The following external risks have been identified for the Transportation service area:

- Accelerated asset degradation due to climate change (heavy snow/precipitation, freeze/thaw events, heat waves, etc.);
- Inflation, tariffs;
- Decreased asset capacity/performance due to growth; and
- Demand drivers for multi-modal transportation.

City of Burlington

Asset Management Plan 2025

Appendix B-2 Stormwater

State of Stormwater Infrastructure

The City of Burlington is committed to managing surface water drainage with the goal of reducing the risk of flooding to better support sustainable infrastructure and resilient environment.

Replacement Value
$1.49bn

Average Condition
Good

Risk Rating
Low

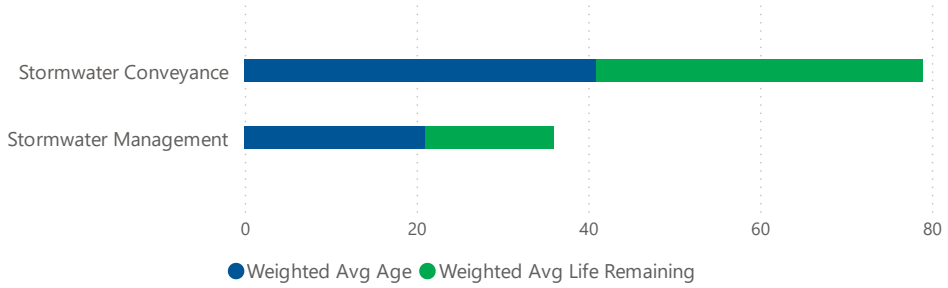
Data Confidence

Stormwater Conveyance	B
Stormwater Management	B-

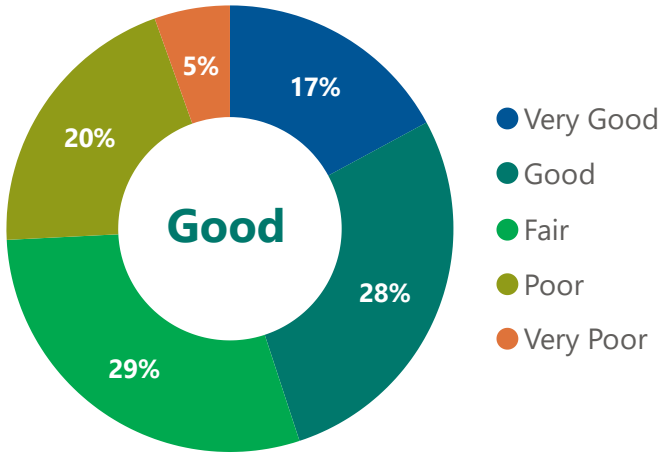
Average Age | Service Life
37 | 71 years

Average Condition

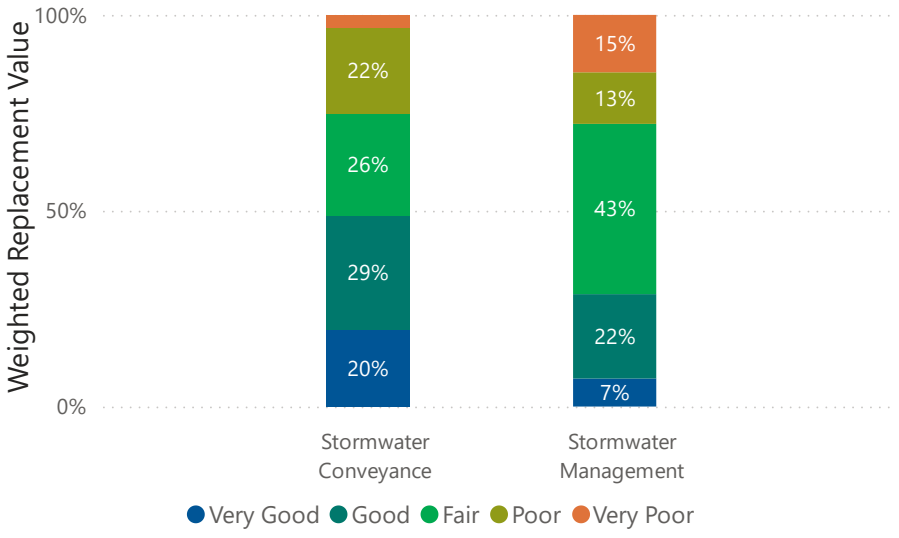
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Stormwater

The City of Burlington's Stormwater infrastructure functions to collect, convey, treat and discharge stormwater in order to protect the public and the City's natural and built environments. Stormwater, derived from rain and snowmelt, enters the storm system through catch basins, creeks, ditches, and other stormwater channels. The Stormwater system drains stormwater away from buildings, roads and impervious surfaces.

Due to the increased intensity and frequency of storm events as a result of climate change, stormwater management is becoming increasingly crucial. Higher precipitation rates will reduce the capacity of the surrounding area to retain stormwater. Further, if the stormwater infrastructure is not well maintained, appropriately sized, or in a state of good repair to accommodate these extra flows, this can increase the risk of overland flooding.

A stormwater master servicing plan has currently been initiated. The outcome of this plan will be a critical input into future AMPs. The identification of all existing and proposed stormwater infrastructure (conveyance and management) will feed directly into the AMP inventory, improving accuracy and completeness.

As the City continues to grow, more emphasis will be placed on Stormwater Management Infrastructure to manage changes in social, economic and environmental expectations.

1.0 State of Local Infrastructure

The City operates and maintains an extensive network of Stormwater infrastructure and equipment, divided into two asset categories – Stormwater Management and Stormwater Conveyance. The Stormwater Management network is comprised of open conveyance, stormwater management facilities and minor treatment equipment such as oil/grit separators. The Stormwater Conveyance network consists of storm sewers, minor culverts, and their associated structures, such as catch basins and maintenance holes.

The total replacement value for the Stormwater infrastructure is $1,488.9 million, the average age is 37 years, the average service life is 71 years, and the average OSI condition is Good. See **Table 1** for the asset inventory and valuation for each asset class and asset type, as well as average age, average service life and average OSI condition.

Table 1: Asset Inventory and Valuation – Stormwater

Asset Class	Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Stormwater Conveyance	Catch basins, Maintenance Holes and Structures	27,962	$191.9 M	40	80	Good
	Minor Road Culverts	2,756	$107.6 M	37	75	Good
	Storm Sewer Pipes	851 km	$901.9 M	42	80	Good
Stormwater Management	Minor Treatment	20	$1.3 M	11	56	Very Good
	Open Conveyance	various	$91.8 M	35	68	Fair
	Stormwater Management Facilities	30	$194.4 M	14	19	Fair

These replacement values were developed using historic construction costs and a standardized costing index.

Asset condition ratings are based on the Overall Service Index (OSI) for each asset. The OSI for stormwater is based on the age of the asset. Stormwater infrastructure condition is inferred by the age of the asset and its expected useful life.

1.1 Green Infrastructure and Natural Asset Management

The City recognizes the importance of natural and green assets that provide stormwater benefits such as flood control, erosion protection, and water quality protection. These include, but are not limited to:

- Parks and naturalized areas;
- Trees and forests, and
- Beaches and shoreline protection.

In 2024, the City began developing a Natural Assets Roadmap that will assess our current natural asset management practices and identify opportunities to improve or implement policies and procedures that will further enhance our knowledge and management of City-owned natural assets.

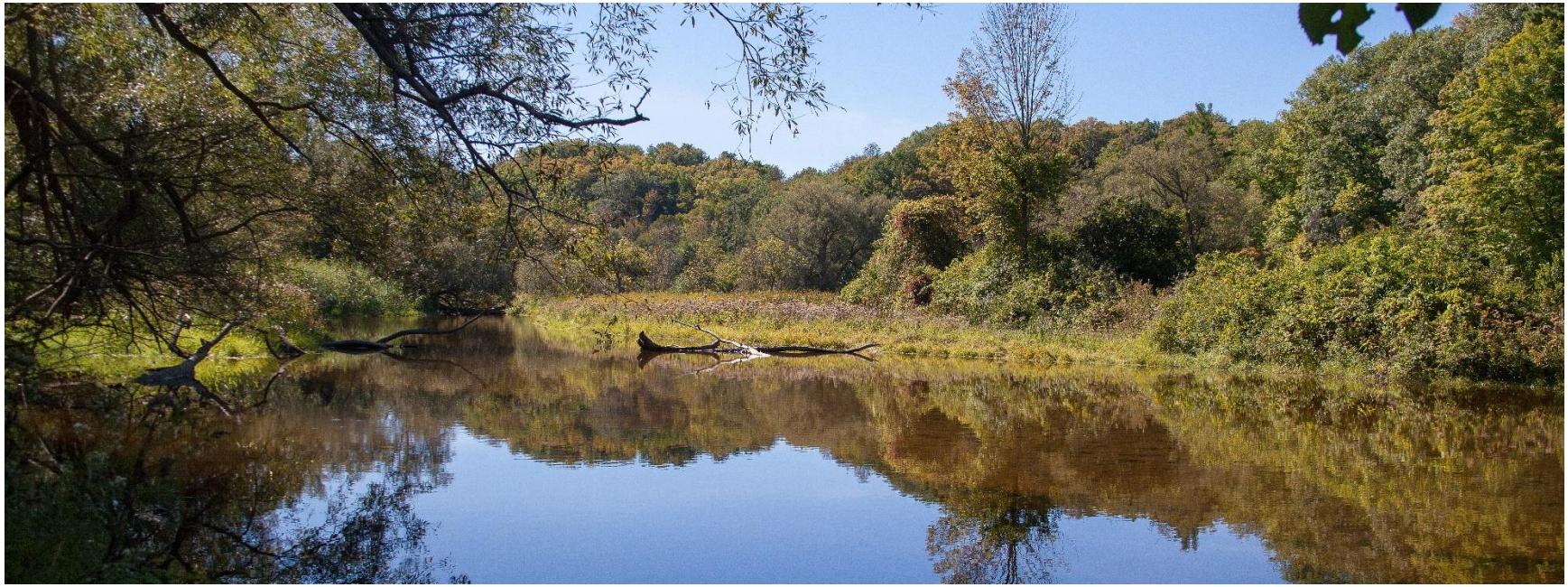
The City owns and maintains:

- 3.2 km of shoreline protection;
- 30 stormwater management facilities (ponds);
- 1.5 km of natural sand beach (not included within this AMP);
- 93 km of creeks, including 10 km of erosion and flood protection infrastructure, and
- 1 rain garden.

Urban forestry and the park's natural assets are discussed in **Appendix B-4** and **Appendix B-5,** respectively.

This iteration of the AMP quantifies and forecasts the capital needs required to maintain the City's assets in a state of good repair. This is an approach that aligns well with engineered or grey infrastructure but can be challenging for natural or green assets. Other municipal Natural Asset Management Plans have utilized an alternative approach and considered the costs of natural asset restoration in their natural asset management.

As the City continues its development of a Natural Assets Roadmap, an enhanced approach to including natural assets in its Corporate Asset Management Plan will be considered in future AMPs.



2.0 Levels of Service

O. Reg. 588/17 requires specific reporting on community and technical levels of service for Stormwater infrastructure and these are noted in the following table with an asterisk. In addition to the required reporting, the City has identified Operational Levels of Service, which is also reported. These metrics define the scope of the service delivered by Stormwater infrastructure and the current performance of these assets.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2025) for the Stormwater service area.

Table 2: Standardized Corporate LOS Metrics – Stormwater

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	0.50%
Technical LOS	SOGR Backlog	$12,857,000
Community LOS	% Poor or Very Poor	25.80%

The City's stormwater conveyance includes 851 km of storm sewer pipes, 2,756 minor road culverts, and 27,962 catch basins, maintenance holes and structures. The Community Levels of Service are presented in **Table 3,** and the Technical Levels of Service are presented in **Table 4**.

Table 3: Community Levels of Service – Stormwater

Table Notes

1. This value denotes the percentage of parcels that are considered to be located beyond the 100-year floodplain, as delineated by the Conservation Halton's Regulatory Limit.
2. This value denotes the percentage of the built stormwater conveyance system that was constructed after 1977, when the City completed and adopted its original Stormwater Management Design Manual, which included sizing guidelines to ensure stormwater sewer conveyance met 5-year storm flows.

Service Attribute	Performance Metric	Current Performance (2024)
Scope	Description of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system*	The majority of the stormwater management system throughout the City provides protection from 5-year storm flows[1]

* as required in O. Reg. 588/17 Table 3 (Stormwater Management Assets)

Table 4: Technical Levels of Service – Stormwater

Service Attribute	Performance Metric	Current Performance (2024)
Scope	The percentage of properties in the municipality resilient to a 100-year storm*	79.10%[1]
Scope	Percentage of the municipal stormwater management system resilient to a 5-year storm*	60.93%[2]
Quality	Percentage of stormwater conveyance assets in Good or Very Good condition	74.47%
Quality	Percentage of stormwater management assets in Good or Very Good condition	72.17%
Reliability	Percentage of mainline storm sewer network cleaned and inspected with CCTV annually	10.18%
Reliability	Catch basin cleaning frequency	25%
Reliability	Percentage of Minor Culverts in Very Poor or Unknown Condition	25.39%

* as required in O. Reg. 588/17 Table 3 (Stormwater Management Assets)

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Stormwater

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	**Storm Sewer Pipes and culverts:** Condition assessments either through CCTV inspection or manned entry Storm Sewer Flushing and Cleaning Spot repairs, CB leads/replacements, minor capital Lateral small-scale repairs Small culvert repair Storm Sewer Structures: Catch basin Cleaning MACP inspections on MHs Catch basin repairs and adjustments	Erosion and/or flooding. Overland flow during stormwater events. Contaminants and water quality issues. Effects on other City infrastructure and services (i.e. roads, transit routes, facilities, etc.). Access issues. Inability to identify constraints or issues within the system.
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	**Storm Sewer Pipes:** Storm Sewer Spot Repair Storm Sewer Spot Repair Extended The lining of pipe or culvert Storm Sewer Structures: MH adjustments	Renewal/rehab activities may not extend asset life as much as expected, leading to unpredictable asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are not completed as scheduled or completed incorrectly.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	**Storm Sewer Pipes:** Storm Sewer Replacement Culvert Replacement Storm Sewer Structures: Manhole replacement	Delays in construction projects may result in higher costs, longer service disruption, potential flooding, road closures, customer dissatisfaction and health and safety risks.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Storm Sewer Pipes:** Stormwater design guidelines Watershed studies and modelling Storm Sewer Structures: Stormwater design guidelines Watershed studies and modelling Condition assessment through CCTV inspection	Asset deterioration is over or underestimated. Increased demand and required capacity on the stormwater system. Potential risk of private and/or public flooding. Lack of coordination between local municipalities and other services may cause construction delays, causing increased public disruption, construction costs and replacing assets before the end of service life.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality and system reliability	**Storm Sewer Pipes:** Pipe upsizing Installation of a new storm system in an existing area Storm Sewer Structures: MH upsizing aligned with upsizing of pipes CB – adding additional	Capacity increase projects are delayed or cancelled, resulting in the system being unable to accommodate increased flow due to population and employment growth. Incorrect sizing can cost more money to maintain and potentially lead to operational issues. Storm conveyance capacity constraints.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	**Storm Sewer Pipes:** Removals through standard construction practices Storm Sewer Structures: Removals through standard construction practices	Inadequate disposal of contaminants and materials.

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, Risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

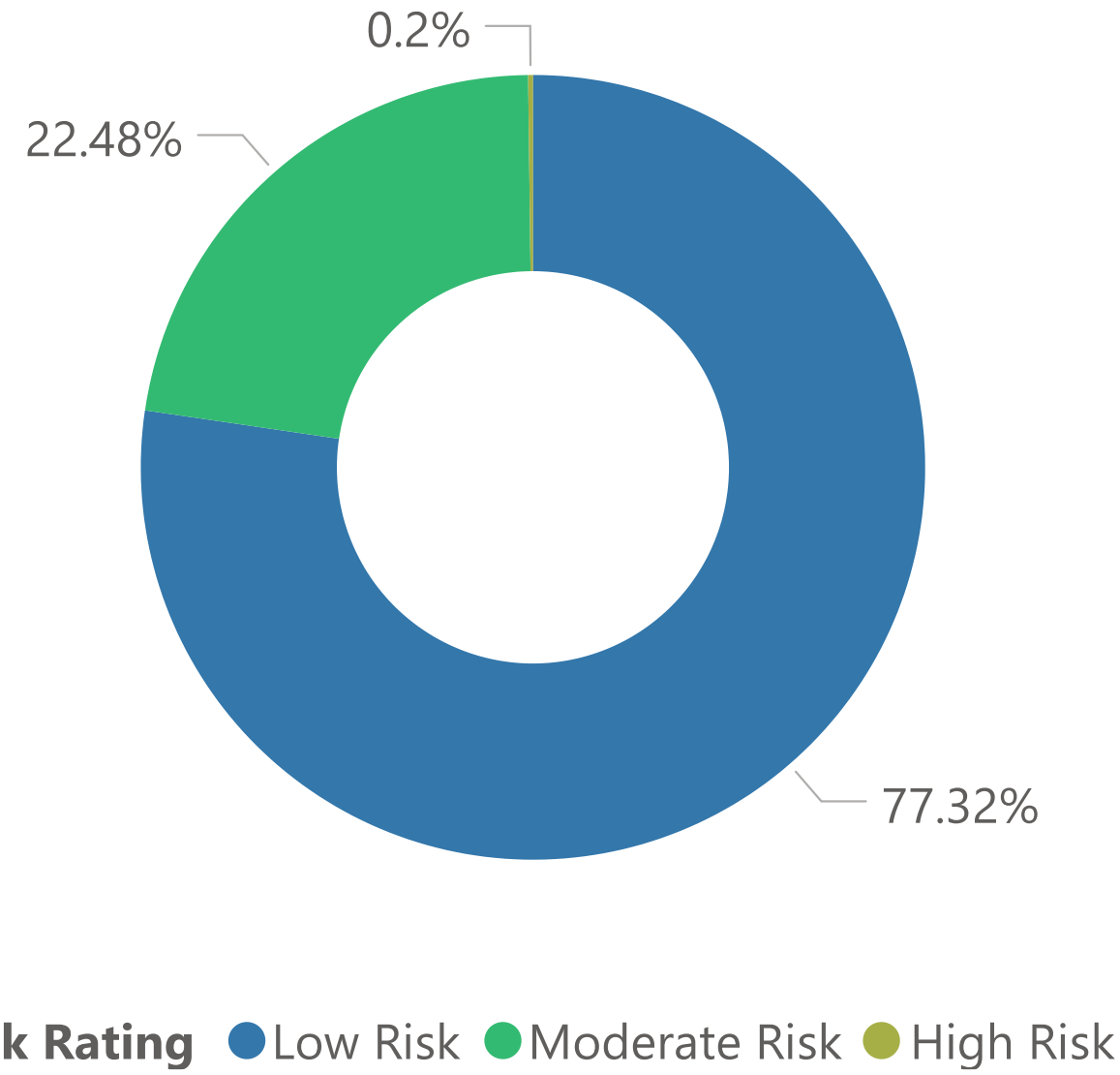
The triple bottom line **consequence of failure factors** are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Stormwater

Social	Financial	Environmental
• Asset Road Classification • Emergency route criticality • Storm pipe diameter	• Replacement Value	• Within CH and NEC Regulation limit

The overall risk profile, shown in **Figure 1,** is Low for Stormwater, with 77% of assets assigned a Low-Risk rating.

Figure 1: Risk Rating by Replacement Value – Stormwater



4.2 External Risk

The following external risks have been identified for the Stormwater service area:

- Accelerated asset degradation or failure due to climate change (extreme precipitation events);
- Decreased asset capacity/performance due to climate change; and
- Inflation, tariffs.

City of Burlington

Asset Management Plan 2025

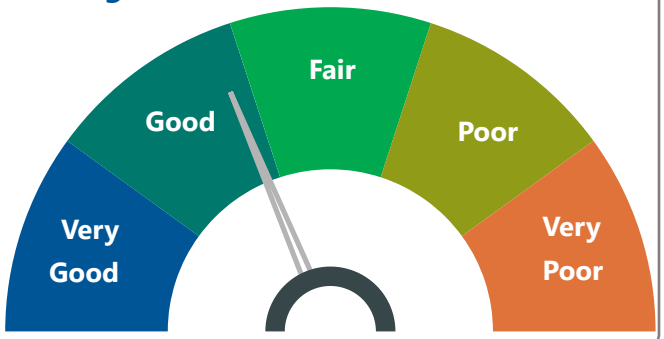
Appendix B-3 Recreation, Community and Culture

State of Recreation, Community and Culture Infrastructure

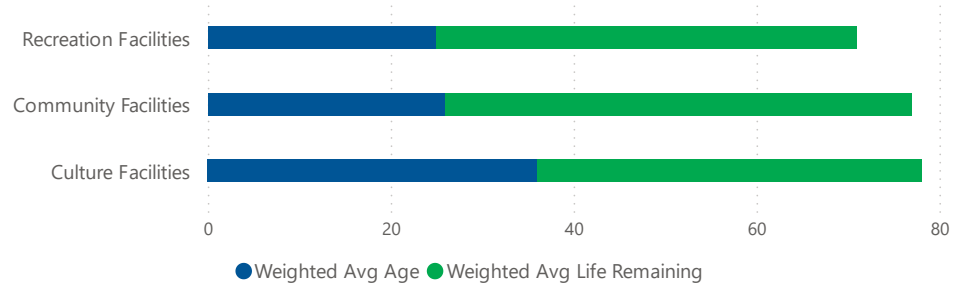
The City of Burlington is committed to efficiently providing high quality, safe and accessible recreation service for the public and to enhancing the quality of life of every one every day, through individual well-being and a sense of belonging.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$1.15bn	Good	**Moderate**	Recreation Facilities	B	27 | 73 years
			Culture Facilities	B	
			Community Facilities	B	

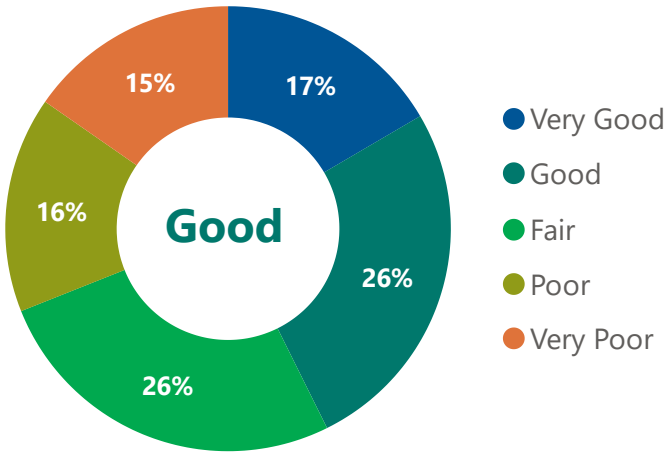
Average Condition



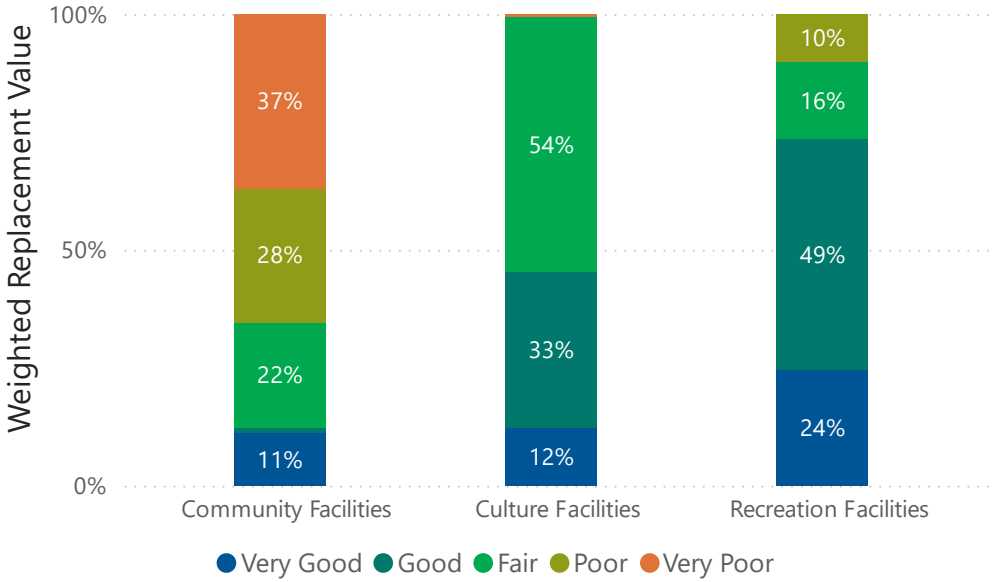
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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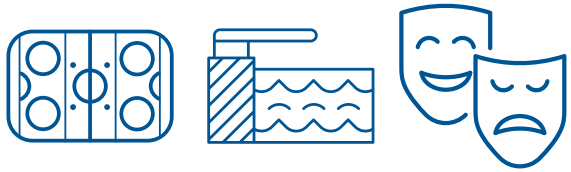


Recreation, Community and Culture

Recreation, Community and Culture (RCC) assets play an integral role in the community, promoting a safe, healthy and fun lifestyle. Recreation, community and culture play a significant role in community building through the facilitation of active and passive activities, opportunities for structured and spontaneous play, strengthening of neighbourhood connections, local tourism, learning, public enjoyment and more. Recreation facilities and assets support indoor and outdoor activities such as those offered in arenas and pools, and the Tyandaga Golf Course.

Community facilities include a variety of different spaces that the community uses, such as our Community Centres, club- and externally-managed facilities such as the Appleby Tennis Club and Drury Lane Theatre, and specialty facilities such as event venues and Heritage buildings. Cultural facilities and assets include libraries, the Ireland House and Joseph Brant museums, the Burlington Centre for Performing Arts, the Burlington Art Gallery, and public art and monuments.

In 2024, the City completed the Live & Play Plan: A Parks and Recreation Facilities Master Plan, providing direction on the provision of City-operated recreation and cultural facilities. It outlines the overall vision, direction, and guidance for planning and making decisions with respect to delivering the City's Recreation, Community and Culture services. The plan is intended to guide future investment and respond to the changing landscape of Burlington. It was informed by public input and is aligned with local, provincial and national policies, strategies, best practices, trends, demographics, and growth forecasts.

1.0 State of Local Infrastructure

Having safe and accessible recreation services is a fundamental expectation of many members of the community. The City's Recreation, Community and Culture asset portfolio is comprised of Recreation Facilities, Community Facilities, and Culture Facilities. This section summarizes the portfolio of facilities associated with Recreation, Community, and Culture managed by the City.

As shown in **Table 1**, the City of Burlington's portfolio of facilities for Recreation, Community and Culture is valued at $1.15 billion, which is comprised of a mixture of Recreation Facilities valued at $448 million, Community Facilities valued at $475 million, and Culture Facilities valued at $227 million. This replacement value is derived from individual system-level assets/components within the facility management system and site amenities associated with each facility, such as pathways, bollards, and lighting.

The total replacement value for the Recreation, Community and Culture assets is $1,151.5 million, the average age is 27 years, the average service life is 73 years, and the average OSI condition is Good.

See **Table 1** for the asset inventory and valuation for each asset class as well as average age, average service and average OSI condition.

Table 1: Asset Inventory and Valuation – Recreation, Community and Culture

Asset Class	Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Community	Community Centres	9	$330.5 M	13	75	Fair
Community	Joint Venture	20	$68.9 M	47	75	Fair
Community	City View Park Pavilion	1	$4.9 M	2	75	Very Good
Community	Specialty Facilities	4	$10.6 M	40	82	Good
Community	Specialty Facilities - Heritage	5	$39.6 M	103	n/a	Fair
Community	Specialty Facilities - Revenue Generating	2	$20.8 M	18	75	Good
Culture	Arts Facilities	2	$112.8 M	25	75	Good
Culture	Libraries	4	$72.2 M	42	75	Good
Culture	Libraries - leased space	3	$13.5 M	27	75	Fair
Culture	Museums	3	$27.4 M	76	n/a	Very Good
Culture	Public Art	135	$2.1 M	18	n/a	Very Good
Recreation	Arenas	7	$348.0 M	21	75	Very Good
Recreation	Pools	7	$87.8 M	38	50	Good
Recreation	Specialty Facility - Golf	1	$12.6 M	36	71	Fair

These replacement values were developed using historic construction costs and a standardized costing index.

The Overall Service Index (OSI) Condition for Recreation, Community and Culture assets is determined by different factors, depending on the type of asset. For facilities, the OSI was partly derived from the industry standard performance benchmark rating, called the Facility Condition Index (FCI). An FCI does not represent a visually assessed condition of the facility but rather is the ratio between the like-for-like repair/renewal needs and the current replacement value of the asset. A limitation of FCI is that it does not describe the facility's performance or capacity to deliver the desired service, and its accuracy is dependent on the total current replacement value calculated. For this reason, the Overall Service Index (OSI) for facility reporting in this AMP uses both FCI and facility age as criteria, with age being used as a proxy for facility performance and/or capacity. For Public art, the condition was derived from previous inspection and/or assessment.

Assets such as Heritage buildings, museums and public art are considered to be unique and irreplaceable, and do not have a service life associated with them. They are not subject to planned replacement in the AMP.

2.0 Levels of Service

The City's inventory of RCC assets includes 41 Community Facilities, 12 Culture Facilities plus, 135 public art, and 15 Recreation Facilities.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for Recreation, Community and Culture assets.

Table 2: Standardized Corporate LOS Metrics – Recreation, Community and Culture

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	0.79%
Technical LOS	SOGR Backlog	$12,248,000
Community LOS	% Poor or Very Poor	31.04%

The City has identified Community Levels of Service (LOS) and Technical Levels of Service, which are presented in **Table 3** and **Table 4**.

Table 3: Community Levels of Service – Recreation, Community and Culture

Service Attribute	Performance Metric	Current Performance (2024)
Availability	1 gym per number of residents	48,525
Availability	1 splash pad per number of children	2,200
Availability	1 outdoor pool per number of residents	64,700
Availability	1 indoor pool per number of residents	48
Availability	1 Arena/floor per number of residents	17,600

Table 4: Technical Levels of Service – Recreation, Community and Culture

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Average Facility Condition Index (FCI) for Recreational Facilities	0.08 (Fair)
Quality	Average Facility Condition Index (FCI) for Community Facilities	0.12 (Poor)
Quality	Average Facility Condition Index (FCI) for Cultural Facilities	0.06 (Fair)
Quality	Percentage of assets in Good or Very Good condition in Recreation Facilities	73.6%
Quality	Percentage of assets in Good or Very Good condition in Community Facilities	33.61%
Quality	Percentage of assets in Good or Very Good condition in Cultural Facilities	45.27%
Environmental Sustainability	Annual GHG emissions per square meter	43,494 g CO_2 /m^2

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Recreation, Community and Culture

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Inspections through corporate contracts General facility maintenance and scheduled overhauls Critical equipment maintenance and overhauls Comprehensive condition assessment of equipment within contracts Contract initiation condition assessments Interim assessment to assess the quality of service	Deficiencies are not identified through inspections due to concealed components or difficult access. Increased lifecycle costs if maintenance is done improperly or not as scheduled. Incorrectly planned maintenance activities can lead to premature asset failure.
Renewal/Rehabilitation Activities Significant repairs designed to extend the life of the asset	Mid-life renewal of facilities and major overhauls and modernization of equipment to support department service	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service, are unknown and could lead to large expenditures.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/rehab is no longer an option.	Demolition and replacement Major renovation, including large additions and property acquisition	Large, complex design and construction projects may increase capital costs. Lead to inefficiencies and substandard services for both staff and customers.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	Facility condition assessments Facility master plans Detailed condition assessments Community outreach/customer engagement Corporate Energy and Emissions Plan	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding.
Expansion Activities Planned activities to improve an asset's capacity, quality and system reliability	Facility upgrades and service enhancements New facilities and buildings Building and/or property acquisition Leasing additional buildings and or properties Growth and expansions are guided by but not limited to Burlington's Strategic Plan 2015-2040, 2018-2022 Burlington's Plan: From Vision to Focus.	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth. Master Plans may overestimate or underestimate required road expansions to accommodate for growth.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	Decommissioning Sale Change of ownership Consolidation of buildings Repurposing buildings	Improper disposal can lead to environmental impacts and expenses.

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, Risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

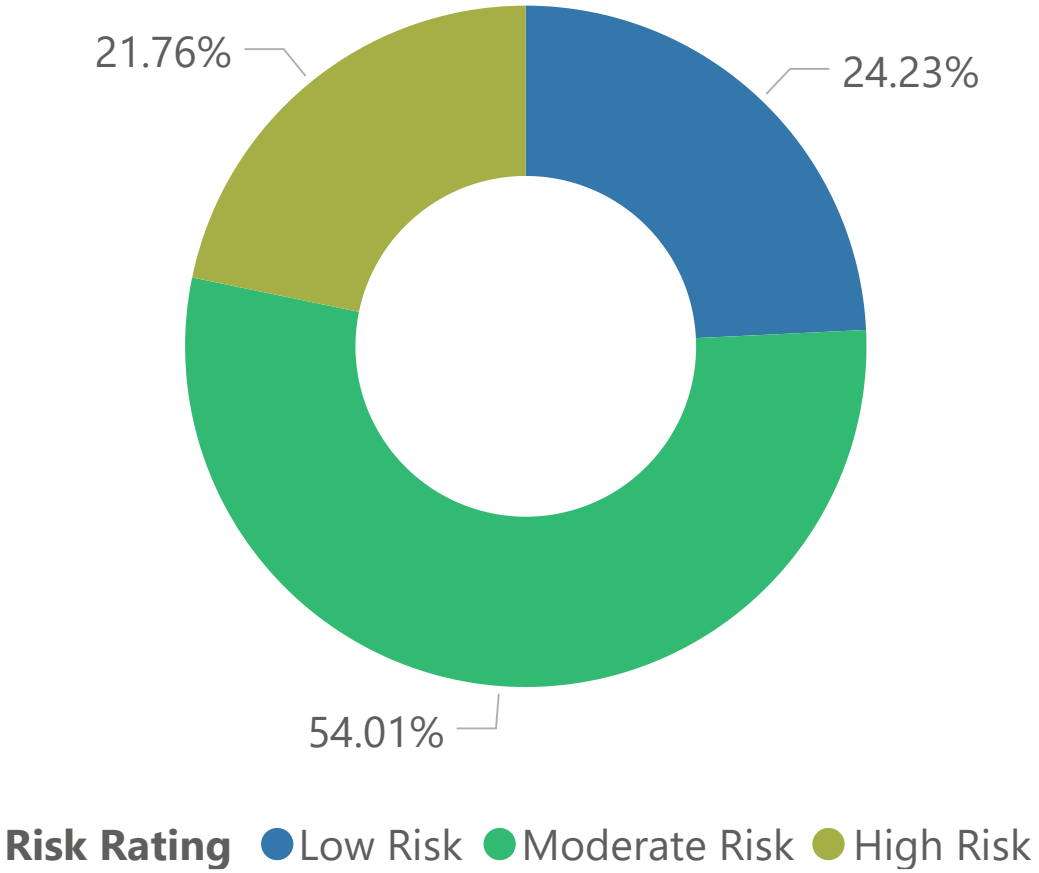
The triple bottom line **consequence of failure factors** are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Recreation, Community and Culture

Social	Financial	Environmental
• Health and Safety • Asset Criticality	• Replacement Value • Revenue Generation	• Hazardous materials use/storage

The overall risk profile, shown in **Figure 1**, is Moderate for Recreation, Community and Culture assets, with 54% of assets assigned a Moderate risk rating, due to a combination of age and asset criticality.

Figure 1: Risk Rating by Replacement Value – Recreation, Community and Culture



4.2 External Risk

The following external risks have been identified for the Recreation, Community and Culture service area:

- Accelerated facility component degradation due to climate change (roofing, HVAC);
- Inflation, tariffs on material components needed for renewal or replacement; and
- Performance or capacity demands not met due to growth, shifts in demographics or community needs.

City of Burlington

Asset Management Plan 2025

Appendix B-4 Urban Forestry

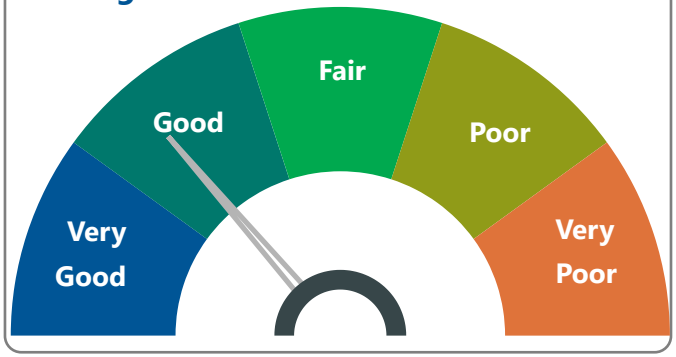
State of Urban Forestry Infrastructure

The City of Burlington is committed to protecting and maintaining a resilient and productive urban forest within the City is safe, healthy, accessible and sustainable.

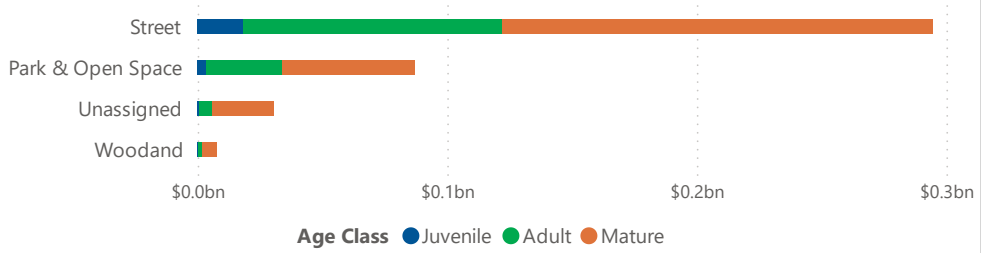
Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$430.6M	Good	n/a	Other	C-	3* | 50 years
			Parks and Open Space Trees	D-	
			Street Trees	B-	
			Woodlands	C-	

*Tree ages are not well documented, interpret with caution. Refer to Age Class alternatively

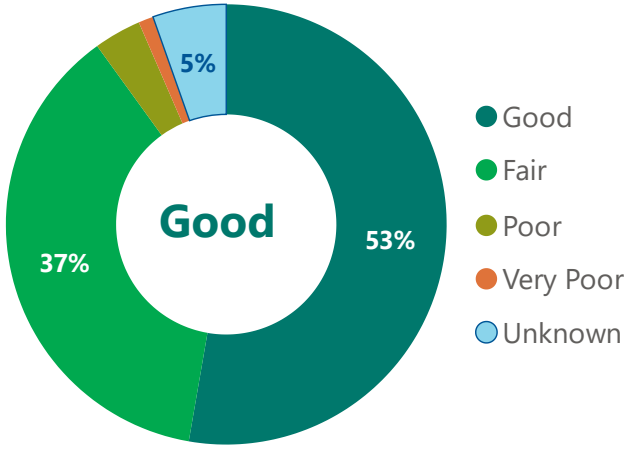
Average Condition



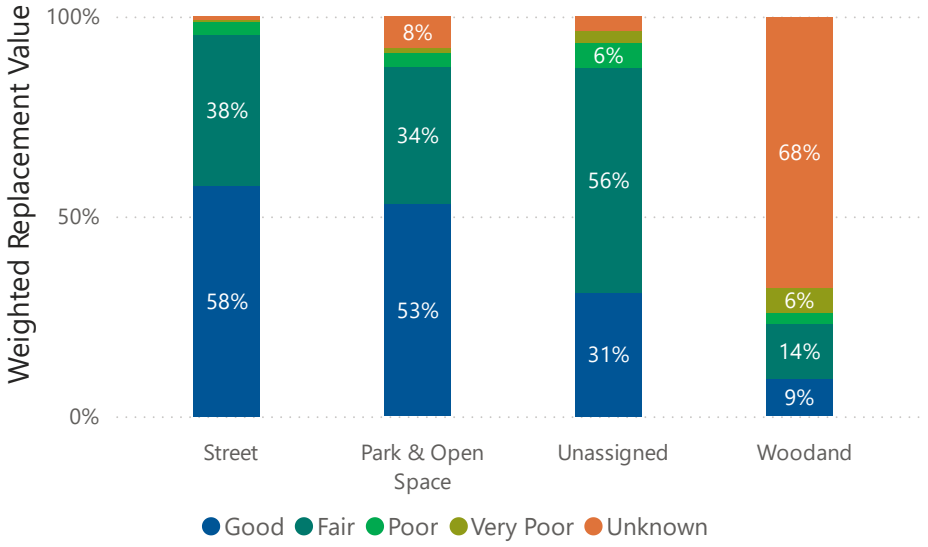
Tree Type by Age Class and Replacement Value



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Urban Forestry

The City of Burlington recognizes that a strong, healthy urban forest provides many benefits to its residents. The trees within Burlington's urban forest provide a wide range of environmental, economic, and social benefits, including improved air quality, reduced storm-water runoff, energy savings, noise reduction, natural bird and wildlife habitats, higher property values, and overall beautification of City streets and parks. This service contributes to the City's Strategic Plan, 3.2 Environmental and Energy Leadership.

The City's forestry section includes the forestry operations branch, whose team is responsible for routine tree maintenance and risk assessment; forest planning and health branch, tree planting and stumping, pest monitoring and management, public education and outreach and long-term management planning (e.g., Urban Forest Master Plan and Woodland Management Strategy); and the administration of both public and private tree bylaws.

1.0 State of Local Infrastructure

As a living asset, the City's urban forest presents unique challenges in the reporting of this critical asset. Traditional evaluation methodologies, lifecycle forecasting, and risk analysis must be adapted to accurately capture the full scope of services and needs of this asset. The information that the City collects about its municipally owned forest is constantly growing.

Municipal asset management has traditionally considered only the structural value, or replacement cost, of its urban forest. There is widely accepted acknowledgement of the benefits and values that an urban forest brings to its communities, and this valuation goes far beyond just the financial cost to replace the asset. The emerging inclusion of living or natural assets in municipal asset management and other endeavors, such as the Natural Asset Initiative, highlights the paradigm shift in urban forestry currently underway. Urban trees contribute tremendous, yet challenging to valuate, benefits to our community, including environmental, social, and economic net benefits. From oxygen generation, water recycling and erosion control to shade, crime reduction, mental health benefits and increased property values, our urban trees provide complex, if not immeasurable, benefits to our community. Recent studies have shown that a single tree may provide up to $162,000 in benefits over a 50-year time span.

Placing a monetary value on a natural asset is a complex task and is an evolving field in the urban forestry sector. In 2024, Burlington approved a 20-year Urban Forest Master Plan and Woodland Management Strategy, aiming to increase tree canopy cover to 35% by 2060. The plan and strategy focus on planting and maintaining trees, restoring woodlands, preparing for climate change and pests, and improving data tracking. and the economic value of urban forests.

1.1 Asset Inventory and Evaluation

The Urban Forestry inventory includes Street trees, Park and Open Space trees, Woodlands, and trees that have been inventoried but not yet assigned to a particular type. An update in inventory from the 2021 AMP was the addition of 37 woodlands identified in Forest Management Plans associated with the Urban Forest Master Plan and Woodland Management Strategy. These woodlands and their respective replacement values are included in this AMP, however age-class information, and therefore their condition, was not available. Another notable change in the inventory from the 2021 AMP was the omission of stumps in this AMP, which were included in the tree inventory in 2021.

Park and Open Space tree inventories continue to be largely undercounted and maybe four to five times larger than documented. It is for these reasons that the Data Confidence scores for Urban Forestry are lower than the other City asset service categories.

Condition for the Urban Forest inventory is inferred by the Age Class of the tree, as it represents where it is in its lifecycle from new to end-of-life. Due to data gaps in documented Tree Age information, Age Class is better known and classifies trees into three categories:

- Juvenile (0 – 10 years old)
- Adult (10 – 35 years old)
- Mature (35 years +)

The total replacement value for the Urban Forestry assets is $430.6 M, and the average OSI condition is Good.

Table 1 summarizes the Urban Forestry assets inventory, average OSI condition and the associated replacement values.

Table 1: Asset Inventory and Valuation – Urban Forestry

Asset Class	Quantity	Replacement Value ($2024)	Average OSI Condition
Park and Open Space Trees	12,874	$86.8 M	Good
Street Trees	49,276	$294.5 M	Good
Woodland Trees	832	$7.6 M	Good
Woodlands	37	$11.4M	Unknown
Unassigned	3,220	$30.2 M	Fair

2.0 Levels of Service

The City's inventory of Urban Forestry includes over 66,000 Trees and woodlots on property owned by the City.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for the Urban Forestry service area.

Table 2: Standardized Corporate LOS Metrics – Urban Forestry

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	0.06%
Technical LOS	SOGR Backlog	$8,612,000
Community LOS	% Poor or Very Poor	4.57%

The City has identified Community Levels of Service and Technical Levels of Service, which are presented in **Table 3** and **Table 4.**

Table 3: Community Levels of Service – Urban Forestry

Service Attribute	Performance Metric	Current Performance (2024)
Availability	Current city-wide canopy cover	30%
Quantity	Total area of public woodlands (ha)	310.9
Quantity	Hectares of public woodland per 1000 people	1.6
Quantity	Number of street trees per 1000 people	340.9
Quantity	Total length of wooded trail network (km)	14

Table 4: Technical Levels of Service – Urban Forestry

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Percentage of Right-of-Way Trees in Poor or Dead Condition	5%
Quality	The ratio of Proactive Maintenance Costs versus Reactive Maintenance Costs for Right-of-Way Trees	$1,032,499.74
Quality	The average lifespan of Right-of-Way trees	50 years
Quality	The age-class distribution of City trees and the diversity (# families, # genera, # species) within each	0 to 10 years (31%): 71 genera, 86 species. 10 to 35 years (44%): 62 genera, 71 species > 35 years (25%): 58 genera, 73 species
Quality	Percentage of Right-of-Way trees that have survived the tree establishment phase (0-5 years)	87%
Quality	Renewal Ratio with a target of 2 Replacements to 1 Removal (2:1)	01:01.6

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Urban Forestry

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Street and park inventories completed Park tree inspections (Level 1 Risk Assessment) completed Service calls for removals/clean-up considered (Level 2 Risk Assessment) Level 3 Risk Assessment: Tree Density Test (Resistograph) Grid Tree (Pruning) Program	Gaps in condition awareness and renewals not completed. Impacts to transportation or property damage. Risk of failure if poor condition not identified.
Renewal / Rehabilitation Significant repairs designed to extend the life of the asset	Emerald Ash Borer injection as a short-term treatment Gypsy Moth spraying	Accelerated rate of Emerald Ash Borer disease. Defoliation of trees by Gypsy Moth caterpillars.
Non-Infrastructure Actions or policies that can lower costs or extend service lives	Public education and outreach Specification for Tree Protection and Preservation, SS-12A, including the Aggregate Caliper Method for tree replacement guidelines Integrated Pest Management guidelines City Tree Bylaw Public Tree Bylaw Urban Forest Master Plan and Woodland Management Strategy	Loss of urban forest canopy due to neglect, damage, or unnecessary removals. Insufficient tree protection and replacement value to the City in the event of removal. Loss of urban forest due to pests or disease. Unauthorized removal of municipal assets. Long-term impact to the urban forest.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
		Unauthorized removal of private assets. Long-term impact to the urban forest. No strategic framework in place to guide the direction.
Expansion Activities Planned activities to improve an asset's capacity, quality, and system reliability	New plantings in new developments	No benefits of the urban forest to the community.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	Tree Removal Emerald Ash Borer Strategy	Risk of collapse, damage, or injury.

4.0 Risk

4.1 Internal Risk

Unlike the other asset service categories in this AMP, determining the risk at the asset level for Urban Forestry is much more complex and challenging. While the Likelihood of Failure could be estimated by age, City staff recognize that the risk a particular tree presents is highly situational: location, age, microclimatic variations and species, amongst multiple other factors. For these reasons, a risk score was not developed for this iteration of the AMP.

4.2 External Risk

The following external risks have been identified for the Urban Forestry service area:

- Climate change impacts such as pest and disease proliferation; extreme weather events, including wind and ice storms, heat waves and drought; and
- Encroachment and damage from private development, construction, or other infrastructure, such as sidewalk lifting.

City of Burlington

Asset Management Plan 2025

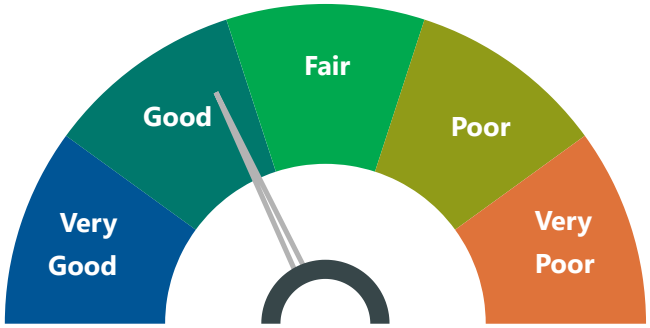
Appendix B-5 Parks

State of Parks Infrastructure

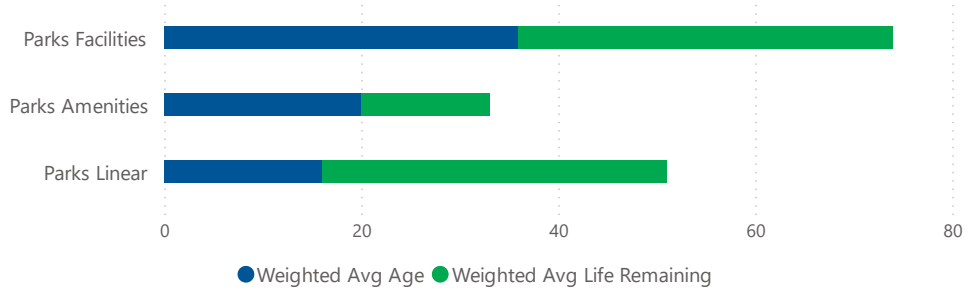
The City of Burlington is committed to efficiently providing high quality parks, open spaces and trails for people of all ages and abilities.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$403.81M	Good	**Moderate**	Parks Amenities	C	21 | 48 years
			Parks Facilities	B	
			Parks Linear	D	

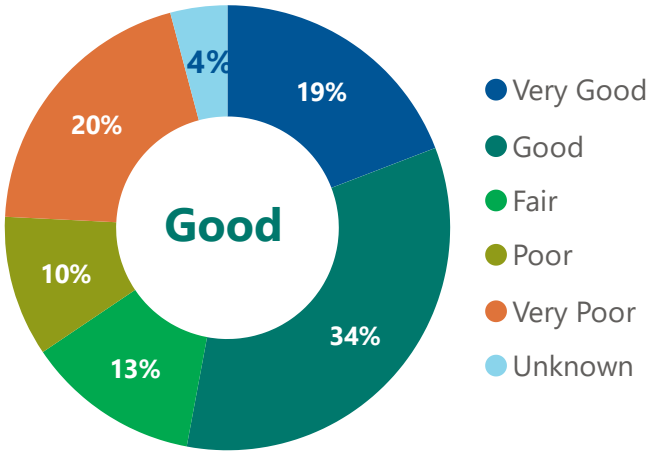
Average Condition



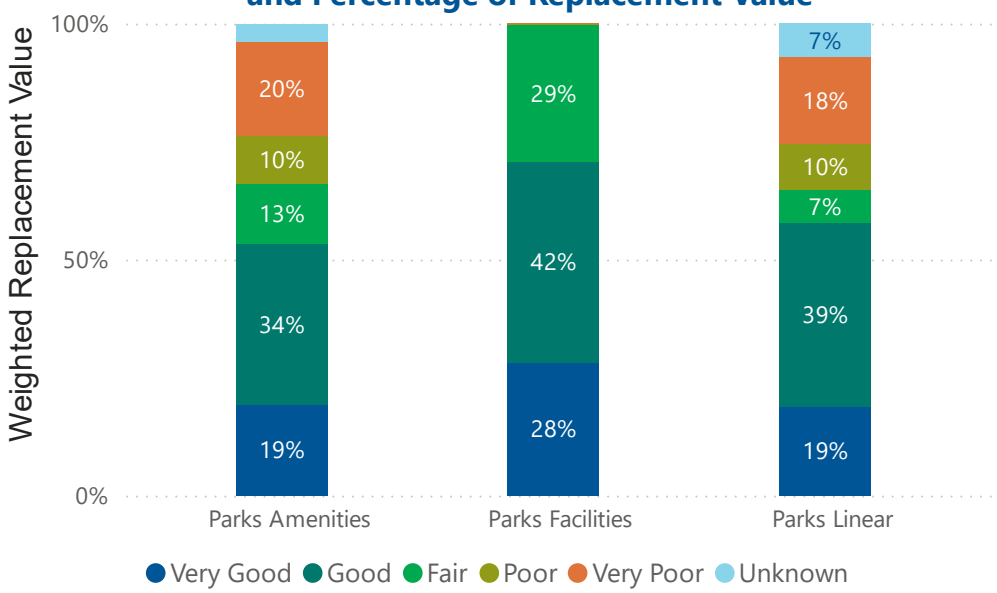
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Parks

Burlington's Parks infrastructure spans nearly 700 hectares and plays an important role in contributing to a "Healthy and Greener City," a key strategic direction established in the City's Strategic Plan.

In 2024 the City completed The Live & Play Plan: A Parks and Recreation Facilities Master Plan providing direction on the provision of City-operated parks. It outlines the overall vision, direction, and guidance for planning and making decisions with respect to delivering the City's Recreation, Community, and Culture services. The plan is intended to guide future investment and respond to the changing landscape of Burlington. It was informed by public input and is aligned with local, provincial and national policies, strategies, best practices, trends, demographics, and growth forecasts.

In 2023, the City released its Parks Provisioning Master Plan to form park dedication guidelines, identify service level targets, and update its park classification system. Across these six park classification types - Community Parks, Destination Parks, Ecological Parks, Linear Parks and Greenways, Neighbourhood Parks, and Urban Parks – the City owns and maintains a wide variety of infrastructure.

In this AMP, Parks infrastructure is classified into three asset categories: Parks Amenities, Parks Linear (Assets) and Parks Facilities. The infrastructure includes, but is not limited to, a network of trails and pathways, gardens and natural areas, a variety of sports fields and playground equipment, public concessions, and washrooms.

The City's investment in these assets helps to support families, build community capacity, improve health and physical activity levels and enhance the overall quality of life of Burlington's citizens.

1.0 State of Local Infrastructure

The City's Parks service area is responsible for the maintenance and operation of a network of parks, facilities, and paths. This section summarizes the Parks assets managed by the City.

The City's portfolio of infrastructure assets for Parks services comprises Parks Amenities assets, valued at $142.1 million **Table 1,** Parks Facilities valued at $68.6 million **Table 2**, and Parks Linear assets valued at $193.2 million **Table 3**.

The total replacement value for Parks assets is $403.8 million, the average age is 21 years, the average service life is 48 years, and the average OSI condition is Good.

These replacement values were derived from historic construction costs and, for facilities, from individual system-level asset/component costs within the facility management system.

Table 1: Asset Inventory and Valuation – Parks Amenities

Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Community Garden	9	$0.7 M	8	93	Very Good
Leash Free Areas	9	$0.7 M	8	20	Fair
Multi-Use Courts	69	$2.0 M	17	21	Poor
Park Signs and Gateways	1154	$5.2 M	15	20	Good
Playgrounds and Fitness Equipment	478	$19.3 M	10	16	Fair
Shade Structures	40	$5.4 M	20	36	Fair
Site Furniture	5330	$23.8 M	14	19	Good
Site Provisions	215	$2.1 M	17	56	Good
Skateparks	12	$2.9 M	15	32	Good
Splash Pads	18	$3.9 M	10	29	Good

Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Sport fields	111	$50.5 M	20	24	Fair
Tennis, Pickleball	25	$2.9 M	19	23	Fair
Unique Assets	32	$22.5 M	42	66	Fair

Table 2: Asset Inventory and Valuation – Parks Facilities

Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Boardwalk	1	$3.8 M	24	50	Good
Maintenance Buildings	13	$29.0 M	43	75	Good
Washroom Buildings	15	$35.7 M	31	75	Very Good

Table 3: Asset Inventory and Valuation – Parks Linear

Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Fencing	33.5 km	$12.3 M	27	28	Poor
Multi-Use Trails	201km	$50.2 M	13	32	Fair
Pedestrian Bridges and Piers	69	$77.7 M	18	65	Good
Railings, Retaining Walls and Stairs	388	$5.7 M	21	66	Fair
Servicing	44 km	$11.2 M	8	49	Very Good
Shoreline Protection	3.2 km	$18.3 M	7	99	Very Good
Sports field Fencing and Netting	12.7 km	$17.8 M	15	27	Fair

For Parks Amenities and Parks Linear assets, the Overall Service Index (OSI) condition was derived based on the age of the asset as a proportion of its Estimated Service Life. For Park Facilities, the OSI was partly derived from the industry standard performance benchmark rating, called the Facility Condition Index (FCI). An FCI does not represent a visually assessed condition of the facility but rather is the ratio between the like-for-like repair/renewal needs and the current replacement value of the asset. A limitation of FCI is that it does not describe the facility's performance or capacity to deliver the desired service, and its accuracy is dependent on the total current replacement value calculated. For this reason, the Overall Service Index (OSI) for facility reporting in this AMP uses both FCI and facility age as criteria, with age being used as a proxy for facility performance and/or capacity.

2.0 Levels of Service

The City's inventory of Parks assets includes 11,237 individual assets across Parks Linear, Parks Amenities and Parks Facilities.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 4** for the current LOS (2024) for Parks.

Table 4: Standardized Corporate LOS Metrics – Parks

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	2.28%
Technical LOS	SOGR Backlog	$56,490,000
Community LOS	% Poor or Very Poor	30.3%

The City has identified Community Levels of Service (LOS) and Technical Levels of Service, which are presented in **Table 5** and **Table 6.**

Table 5: Community Levels of Service – Parks

Service Attribute	Performance Metric	Current Performance (2024)
Availability	Number of hectares of parkland per 1,000 persons	3.73 ha
Availability	Number of diamonds per population	1:1,280
Availability	Number of rectangular fields per population	1:1,527
Availability	Percentage of people within 400 m walking distance of a park	58%
Availability	Percentage of people within 500 m walking distance of a playground	54%
Availability	Total length of the trail network	157 km

Table 6: Technical Levels of Service – Parks

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Facility Condition Index (FCI)	0.03 (Good)
Quality	Number of planned and reactive maintenance hours per 1,000 square meters	TBD
Quality	Percentage of assets in Good or Very Good condition	52.9%
Availability	Number of hectares of parkland per 1,000 persons	3.73 ha
Availability	Number of diamonds per population	1:1,280
Availability	Number of rectangular fields per population	1:1,527
Availability	Percentage of people within 400 m walking distance of a park	58%
Availability	Percentage of people within 500 m walking distance of a playground	54%
Availability	Total length of the trail network	157 km
Environmental Sustainability	Annual GHG emissions per square meter	8,687 g CO_2 /m^2

3.0 Asset Management Strategy

Table 7: Lifecycle Activities – Parks Amenities

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Park Amenities assets are monitored and repaired based on reporting deficiencies. Playgrounds are inspected every month. Splash Pads are inspected every day during the operation.	Regular planned maintenance, in combination with unplanned reactive maintenance, is attributed to a number of reasons. A backlog in maintenance can lead to the failure of an asset in advance of planning capital replacement.
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	Tennis courts are resurfaced halfway through their lifecycle; artificial turf carpets are replaced 4 times throughout the field's lifecycle, and skateparks are renewed on a 10-year cycle	Without planned renewal or rehabilitation activities, the risks of failure are increased, and park amenities will be closed until full replacement occurs. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	The approach to replacement is to bundle as many assets as possible that require replacement into one construction contract by park for cost efficiencies and to reduce disruption to the public.	Missing the window of opportunity to replace infrastructure at end-of-life results in assets being closed for public use.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	Infrastructure conformance with applicable law, technical standards, Ontario Building Code, government policies and Master Plans	Asset deterioration is over or underestimated, inaccurate growth forecasts or estimation of funding.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality and system reliability	New infrastructure is either identified as part of the City's Development Charge Study, through public outreach by the Recreation Community Culture Service or by Council-approved master plans such as the Community Trails Strategy	New parks are the only eligible assets that can be funded by Development Charges and require contribution by the Park Dedication Reserve Fund.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	Disposal activities range significantly, given the diverse range of asset types in the Park Amenities category. Where possible, materials are recycled or repurposed	City has a responsibility to adhere to provincial regulations related to disposal activities.

Table 8: Lifecycle Activities – Parks Facilities

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Inspections through corporate contracts General facility maintenance Critical equipment maintenance and overhauls Comprehensive condition assessment of equipment within contracts Contract initiation condition assessments Interim assessment to assess the quality of service	Deficiencies are not identified through patrols. Increased lifecycle costs if maintenance is done improperly or not as scheduled. May contribute to premature asset failure, service disruptions, or pose health and safety risks. Customer dissatisfaction with quality, safety or accessibility of facilities.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	Mid-life renewal of facilities and major overhauls and modernization of equipment to support department service	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option.	Demolition and Replacement	Delays in construction projects may result in health and safety risks, higher costs, longer service disruption and customer dissatisfaction.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	Facility Master Plans Community Outreach / Customer Engagement Corporate Energy and Emissions Plan	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality and system reliability	Facility Upgrades and Service Enhancements New Facilities and Buildings Change of Ownership	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	Decommissioning Sale Change of Ownership Consolidation of Buildings Repurposing Buildings	Improper disposal can lead to environmental impacts and expenses.

Table 9: Lifecycle Activities – Parks Linear Assets

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Pathways and Multi-Use Recreational Trails are monitored and repaired based on reported deficiencies. Pedestrian bridges are assessed every 2 years by external experts and monitored by staff.	A backlog in maintenance can lead to the failure of an asset in advance of planning capital replacement.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	The Waterfront Promenade and seawall are repaired annually. Decks and railings are replaced on pedestrian bridges halfway through their lifecycle Resurfacing Deck & Railing Replacement Minor Rehabilitation (deck, caisson and railing removal, refacing, railing replacement, pavement, seawall and cap removal) For poured-in-place skateparks – crack sealing, railing replacement and slab replacement. For modular skateparks, concrete pads will last 30 years, but modular skateboarding elements to be replaced at year 15	Without planned renewal or rehabilitation activities, the risks of failure are increased, and the consequences are significant. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and	Bundle as many assets that require replacement into one construction contract by park for cost efficiencies and to reduce disruption to the public	Missing the window of opportunity to replace infrastructure at end-of-life results in assets being closed for public use.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
renewal/ rehab is no longer an option		
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	Infrastructure conformance with applicable law, technical standards, Ontario Building Code, government policies and Master Plans	Asset deterioration is over or underestimated, inaccurate growth forecasts or estimation of funding.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality and system reliability	New infrastructure is either identified as part of the City's Development Charge Study, through public outreach by the Recreation Community Culture Service or by Council-approved master plans such as the Community Trails Strategy	Trails and new parks are the only eligible assets that can be funded by Development Charges and require contribution by the Park Dedication Reserve Fund.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	Disposal activities range significantly, given the diverse range of asset types in the Park Linear category. Where possible, materials are recycled or repurposed, e.g. recycled granular is specified for the construction of Multi-Use Recreational Trails	City has a responsibility to adhere to provincial regulations related to disposal activities.

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, Risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

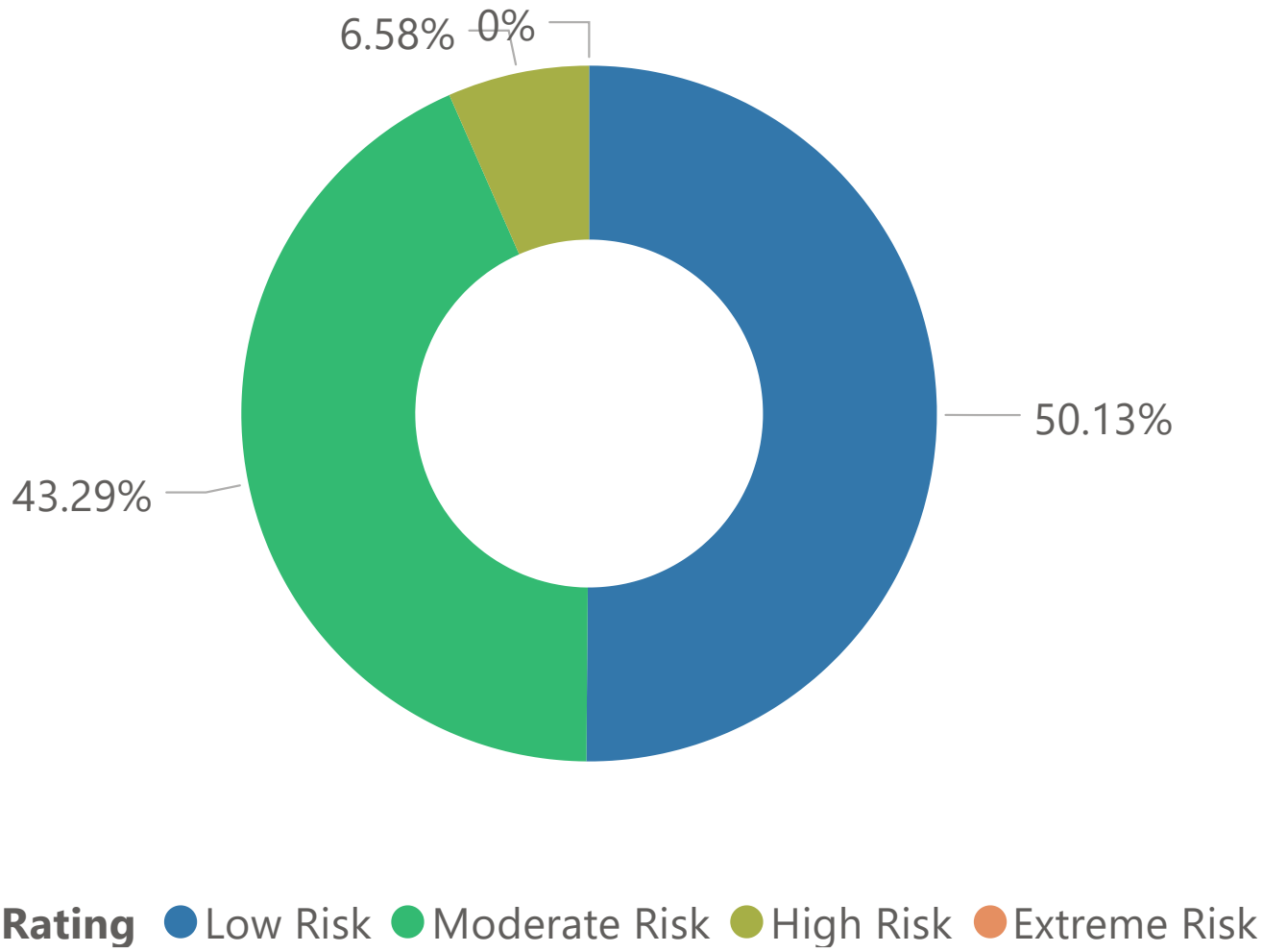
The triple bottom line **consequence of failure factors** are presented in **Table 10** for social, financial and environmental consequences.

Table 10: Consequence of Failure Factors – Parks

Social	Financial	Environmental
• Park designation • Population Density	• Replacement Value	• N/A

The overall risk profile, shown in **Figure 1,** is Moderate for Parks, with 43.29% of assets assigned a Moderate risk rating.

Figure 1: Risk Rating by Replacement Value – Parks



4.2 External Risk

The following external risks have been identified for the Parks service area:

- Accelerated asset degradation or need for additional Maintenance due to prolonged seasonal use due to climate change impacts;
- Inflation, tariffs on material components needed for renewal or replacement; and
- Performance or capacity demands not met due to growth, shifts in demographics or community needs.

City of Burlington

Asset Management Plan 2025

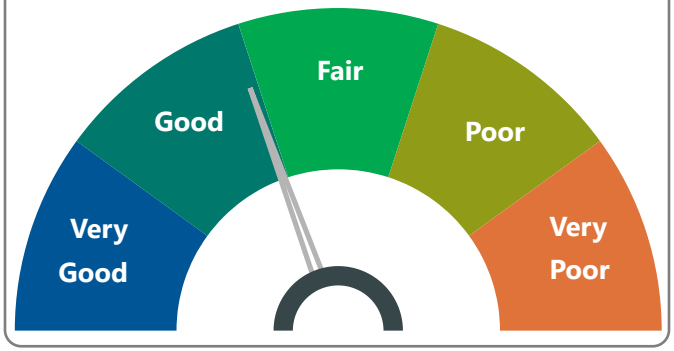
Appendix B-6 Corporate Facilities

State of Corporate Facilities Infrastructure

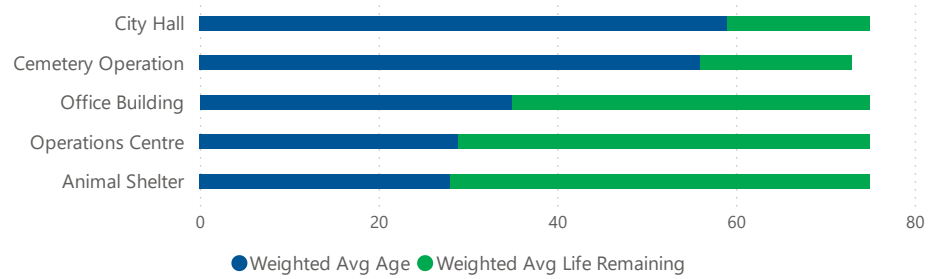
The City of Burlington is committed to providing high-quality, efficient, safe and sustainable service and employment spaces for both residents and staff.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$252.08M	Good	**Moderate**	Administration Buildings	B	40 | 75 years

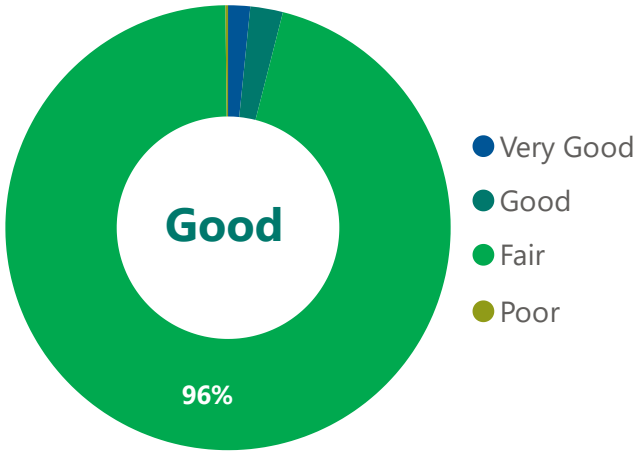
Average Condition



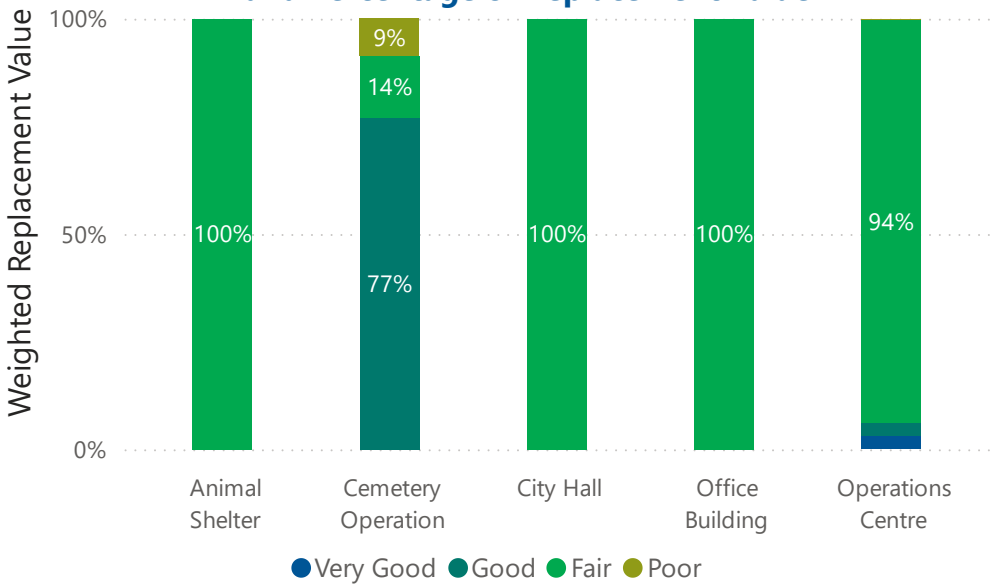
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Corporate Facilities

The City owns and operates facilities that are used to provide a wide range of services. Having safe and reliable facilities is a fundamental expectation for all users. The assets included within Corporate Facilities include locations such as administrative buildings and operations centre that enable use by several different service areas. These assets support service delivery by providing work and meeting space that is both safe and efficient for use by City staff, Council, Boards and Commissions and members of the community.

1.0 State of the Local Infrastructure

The City's corporate facility asset portfolio consists of facilities that primarily provide an administrative or supportive function to other departments or services. This includes City Hall, Sim Square, the Harvester Road Operations Centre campus (comprised of multiple buildings on site), and the Animal Shelter and Cemetery Operation buildings at Greenwood Cemetery. This section summarizes the portfolio of assets associated with the various corporate facilities managed by the City.

The City of Burlington's portfolio of infrastructure assets for corporate facilities is valued at $252 million. This replacement value is sourced from individual system-level assets/components within the facility management system.

The total replacement value for the Corporate Facilities infrastructure is $252.1 million, the average age is 40 years, the average service life is 75 years, and the average OSI condition is Good.

See **Table 1** for the asset inventory and valuation for each asset type, as well as average age, average service life and average OSI condition for the Administrative Buildings.

Table 1: Asset Inventory and Valuation – Corporate Facilities

Asset Class	Asset Type	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Administration Buildings	Animal Shelter	$6.9 M	28	75	Fair
Administration Buildings	Cemetery Operation	$3.2 M	56	71	Good
Administration Buildings	City Hall	$84.6 M	59	75	Fair
Administration Buildings	Office Building	$32.5 M	35	75	Fair
Administration Buildings	Operations Centre	$124.9 M	29	74	Good

Corporate facilities are maintained through corporate contracts, and condition assessments are carried out by qualified assessors. Comprehensive condition assessments are typically performed on a 5-year basis, and additional interim assessments are completed following new acquisitions, major contracted construction work, or as required.

Condition can be reported at the asset level, as well as at the Facility level, using an industry-standard performance benchmark rating called the Facility Condition Index (FCI). An FCI does not represent a visually assessed condition of the facility but rather is the ratio between the like-for-like repair/renewal needs and the current replacement value of the asset. A limitation of FCI is that it does not describe the facility's performance or capacity to deliver the desired service, and its accuracy is dependent on the total current replacement value calculated. For this reason, the Overall Service Index (OSI) for facility reporting in this AMP uses both FCI and facility age as criteria, with age being used as a proxy for facility performance and/or capacity.

2.0 Levels of Service

The City's inventory of Corporate Facilities assets ranges in average age from 28 years for the animal shelter to 59 years for City Hall.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for Corporate Facilities.

Table 2: Standardized Corporate LOS Metrics – Corporate Facilities

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	1.17%
Technical LOS	SOGR Backlog	$1,881,000
Community LOS	% Poor or Very Poor	19%

The City has identified Community and Technical Levels of Service, which are presented in **Table 3**.

Table 3: Community and Technical Levels of Service – Corporate Facilities

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Facility Condition Index (FCI)	0.14 (Poor)
Environmental Sustainability	Annual GHG emissions per square meter	11,323 g CO_2 /m^2

3.0 Asset Management Strategy

Table 4: Lifecycle Activities – Corporate Facilities

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Inspections through corporate contracts General facility maintenance Critical equipment maintenance and scheduled overhauls Comprehensive condition assessment of equipment within contracts Contract initiation condition assessments Interim assessment to assess the quality of service	Deficiencies are not identified through inspections due to concealed components or difficult access. Increased lifecycle costs if maintenance is done improperly or not as scheduled. Incorrectly planned maintenance activities can lead to premature asset failure.
Renewal/Rehabilitation Activities Significant repairs designed to extend the life of the asset	Mid-life renewal of facilities and major overhauls and modernization of equipment to support department service	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
		Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service, are unknown and could lead to large expenditures.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/rehab is no longer an option	**Demolition and Replacement** Major renovation, including large additions and property acquisition	Large, complex design and construction projects may increase capital costs. Leads to inefficiencies and substandard services for both customers and staff.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Facility Master Plans** Community Outreach / Customer Engagement Corporate Energy and Emissions Plan	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding.
Expansion Activities Planned activities to improve an asset's capacity, quality and system reliability	Facility Upgrades and Service Enhancements New Facilities and Buildings Building and/or property acquisition	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Leasing additional buildings and/or properties Growth and expansions are guided by but not limited to Burlington's Strategic Plan 2015-2020 and the 2018-2022 Burlington's Plan: From Vision to Focus	Master Plans may overestimate or underestimate required road expansions to accommodate for growth.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	**Decommissioning** Sale Change of Ownership Consolidation of Buildings Repurposing Buildings	Improper disposal can lead to environmental impacts and expenses.

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

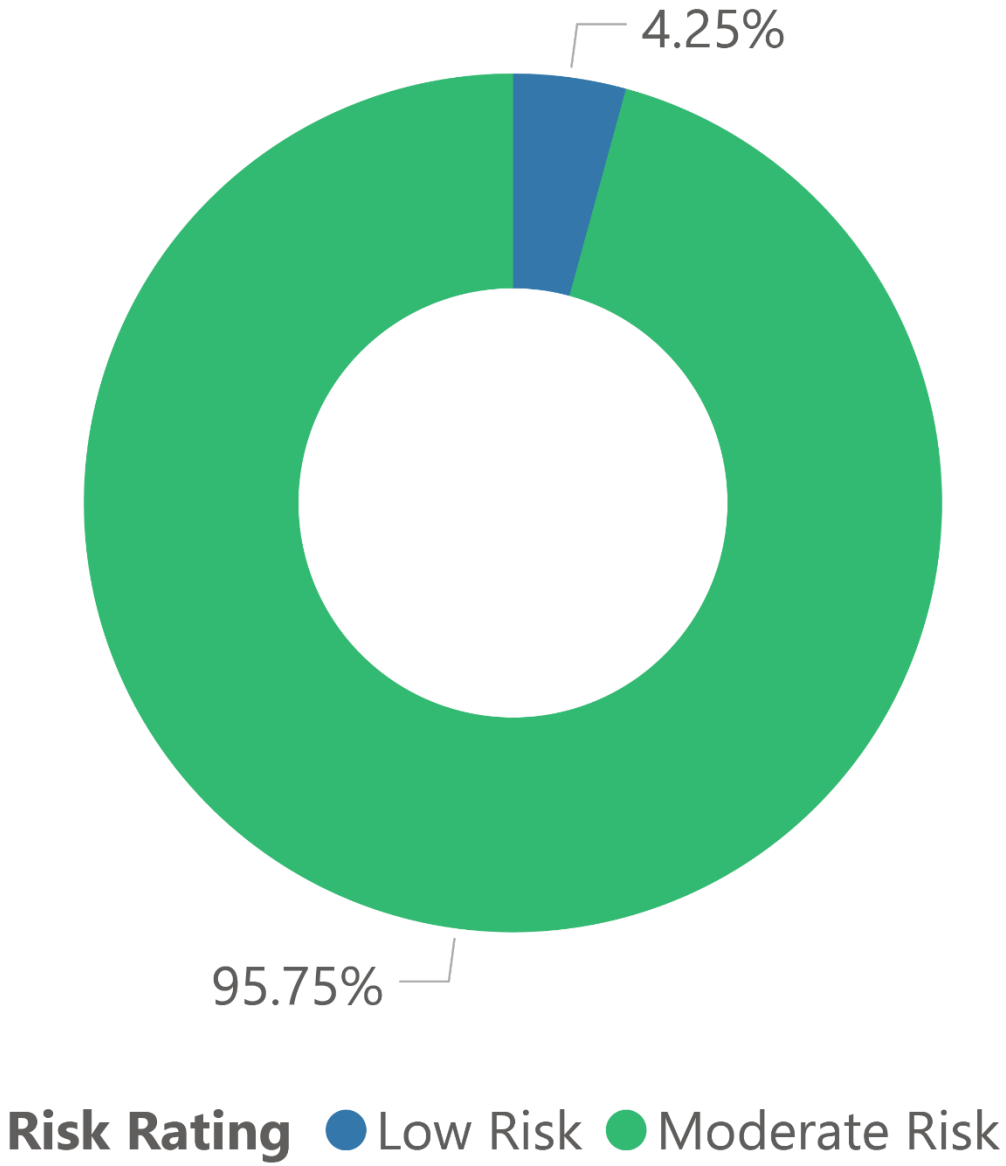
The **likelihood of failure factor** is derived from the condition/age of the asset.

The triple bottom line **consequence of failure factors** are presented in **Table 5** for social, financial and environmental consequences.

Table 5: Consequence of Failure Factors – Corporate Facilities

Social	Financial	Environmental
• Facility Criticality	• Replacement Value • Revenue Generation	N/A

Figure 1: Risk Rating by Replacement Value – Corporate Facilities



4.2 External Risk

The following external risks have been identified for the Corporate Facilities service area:

- Accelerated facility component degradation due to climate change (roofing, HVAC);
- Inflation, tariffs on material components needed for renewal or replacement; and
- Performance or capacity demands not met due to growth, shifts in demographics or community needs.

City of Burlington

Asset Management Plan 2025

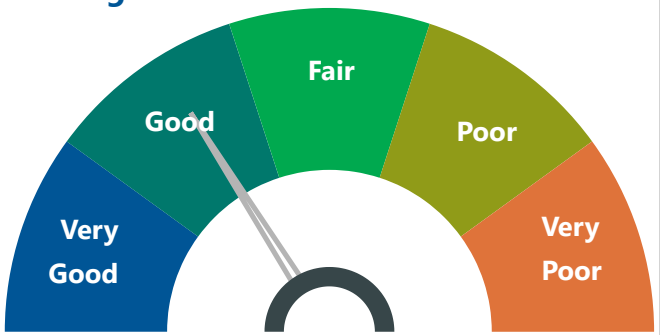
Appendix B-7 Transit

State of Transit Infrastructure

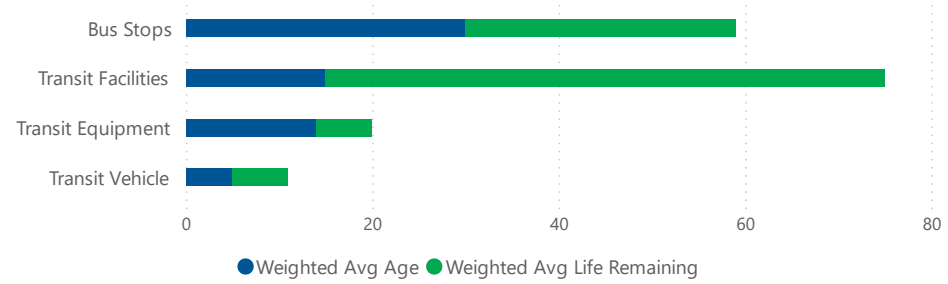
The City of Burlington is committed to efficiently providing a high quality, safe, efficient, accessible, convenient and reliable transit service that meets the expectations of the community.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$246.15M	Good	**Moderate**	Bus Stops	B	12 | 46 years
			Transit Equipment	B	
			Transit Facilities	B	
			Transit Vehicles	A	

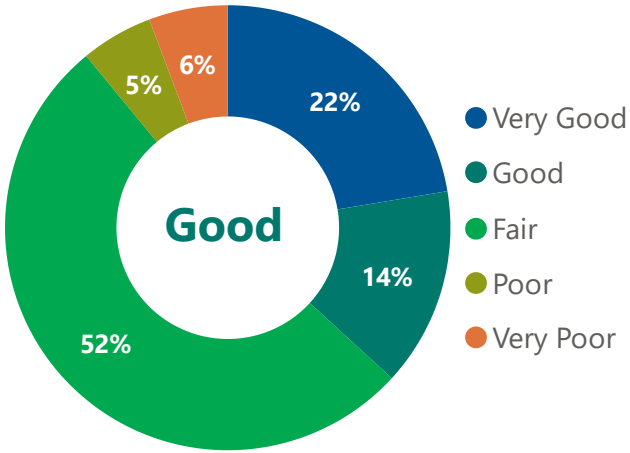
Average Condition



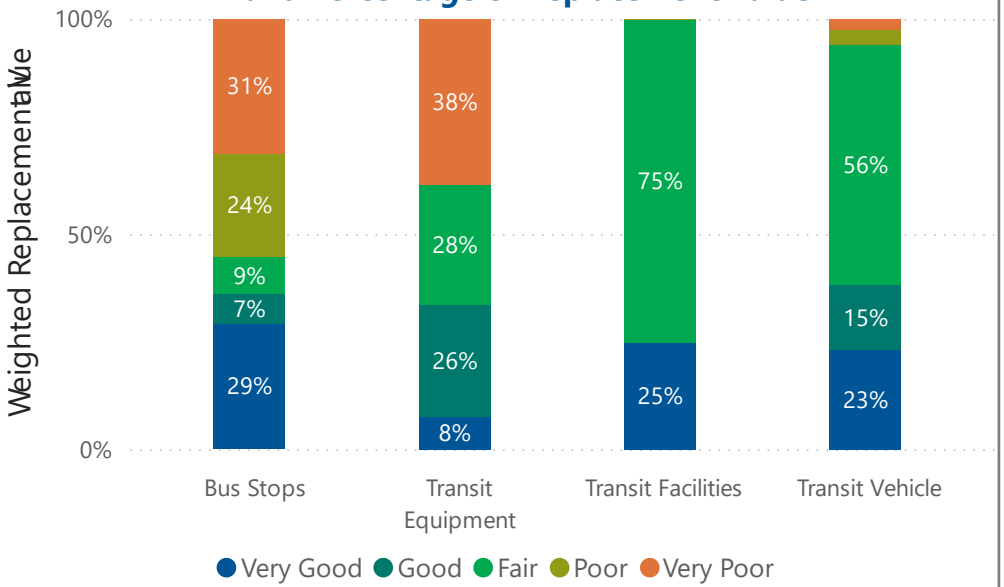
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Transit

The City of Burlington provides residents and visitors with a wide range of opportunities for getting around, including walking, cycling, public transit, and automobiles. Transit plays an integral role in the delivery of city services as it supports integrated mobility, environmental sustainability, and affordability. The City has developed an Integrated Mobility Plan (IMP), which presents a strategy for transportation in Burlington to the year 2051. The IMP has the following overarching goals:

- A wider range of transportation options, regardless of age, means or ability;
- The efficient transportation of more people with compact modes of transportation (such as buses, bicycles, and walking);
- A transportation system that is well-connected to other Regions;
- Fast, reliable and frequent transit; and
- The improvement of facilities for cyclists and pedestrians.

Currently, Burlington Transit operates 9 full-service routes, 4 peak time routes and 3 late-night service routes, with regular connections to GO Transit, Oakville Transit and Hamilton Street Railway.

The 2020 – 2024 Burlington Transit Business Plan guides the implementation of the City's transit service improvements, with a key focus on identifying the strategies and necessary resources required to meet transit ridership growth targets as identified in Halton Region's 2011 Transportation Master Plan. The City's Transit assets are divided into bus stops, facilities, vehicles, and equipment.

1.0 State of Local Infrastructure

Providing a high-quality, safe, efficient, accessible, convenient, and reliable transit service that meets the expectations of the community is an important goal for the City of Burlington. This section summarizes the portfolio of infrastructure assets associated with the Transit services managed by the City.

The total replacement value for the Transit assets is **$246.1 million, the average age is 12 years, the average service life is 46 years, and the average OSI condition is Fair.** See **Table 1** for the asset inventory and valuation for each asset class as well as average age, average service life and average OSI condition.

Table 1: Asset Inventory and Valuation – Transit

Asset Class	Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Bus Stops	Concrete Pads	823	$12.9 M	36	66	Good
Bus Stops	Shelters	277	$3.7 M	9	36	Fair
Transit Equipment	Various	various	$6.1 M	14	17	Fair
Transit Facilities	Bus Terminal	8	$4.3 M	37	75	Fair
Transit Facilities	Transit Operations	26	$115.8 M	14	75	Fair
Transit Vehicle	Conventional Bus	74	$96.2 M	5	12	Good
Transit Vehicle	Specialized Bus	16	$6.4 M	5	7	Fair
Transit Vehicle	Support Vehicles	11	$0.7 M	8	12	Poor

The City of Burlington's portfolio of infrastructure assets for Transit services is comprised of a mixture of Bus Stops, valued at $16.6 million, Facilities valued at $120.1 million and Vehicles & Equipment valued at $109.4 million. These replacement values were developed based on a review of purchase costs, current market costs, and regulated codes/requirements.

For Transit facilities, the OSI was partly derived from the industry standard performance benchmark rating, called the Facility Condition Index (FCI). An FCI does not represent a visually assessed condition of the facility but rather is the ratio between the like-for-like repair/renewal needs and the current replacement value of the asset. A limitation of FCI is that it does not describe the facility's performance or capacity to deliver the desired service, and its accuracy is dependent on the total current replacement value calculated. For this reason, the Overall Service Index (OSI) for facility reporting in this AMP uses both FCI and facility age as criteria, with age being used as a proxy for facility performance and/or capacity.

For the remaining Transit assets, the OSI was based on the age and expected service life of the asset.

Note: at the time of publication, the Bus Terminal has been included under the City's asset portfolio, but effective March 31, 2025, was removed from service. Decisions on decommissioning or offloading of this asset had not been made at the time of publication.

2.0 Levels of Service

The City's inventory of Transit assets includes 8 bus terminals and 26 transit operations facilities, as well as 74 conventional buses, 16 specialized buses and 11 support vehicles.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for Transit assets.

Table 2: Standardized Corporate LOS Metrics – Transit

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	4.90%
Technical LOS	SOGR Backlog	$7,350,000
Community LOS	% Poor or Very Poor	10.97%

The City has identified Community Levels of Service (LOS) and Technical Levels of Service, which are presented in **Table 3** and **Table 4**.

Table 3: Community Levels of Service – Transit

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Percentage of vehicles in Good or Very Good condition	38.16%
Quality	Percentage of bus stops and equipment in Good or Very Good condition	36.04%
Reliability	Percentage of urban-area residents within 400 meters of a bus stop	75.40%
Reliability	Number of events that are non-compliant with AODA (Transportation Standard)	100

Table 4: Technical Levels of Service – Transit

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Average Facility Condition Index (FCI)	0.16 (Poor)
Quality	Percentage of maintenance completed on schedule for fleet assets	100%
Safety	Number of collisions reported by drivers per kilometer driven	208,484.96
Environmental Sustainability	Annual GHG emissions per square meter of facility	26,295 g CO_2/m^2
Environmental Sustainability	Percentage of fleet transitioned to non-fossil fuel	0%

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Transit

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	**Transit Facilities:** Inspections through corporate contracts General facility maintenance Critical equipment maintenance and scheduled overhauls Comprehensive condition assessment of equipment within contracts Contract initiation condition assessments Interim assessment to assess the quality of service **Transit Vehicles:** Carrying out regular maintenance activities on all vehicles and equipment as per manufacturer's recommendations for optimum performance and lifecycle	Deficiencies may not be identified during inspections due to concealed components or difficult access. Increased lifecycle costs if maintenance is done improperly or not as scheduled. It may contribute to premature asset failure service disruptions or pose health and safety risks. Customer dissatisfaction with quality, safety or accessibility of facilities.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Reactive maintenance for circumstances not easily mitigated (e.g. vehicle accidents, faster than anticipated breakdown) Tracking maintenance activities in order to continue to improve. Target is to minimize unplanned, non-standardized work. Empowering certified staff to make decisions on elective repairs (under $1,000) in order to ensure continuity of service and fewer breakdowns while in service	
Renewal / Rehabilitation Activities Significant repairs designed to extend the life of the asset	**Transit Facilities:** Mid-life Renewal of facilities and major overhauls and modernization of equipment to support department service **Transit Vehicles:** Regular preventative maintenance programs assist in determining renewals/rehabilitation required.	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Major overhauls or reconditioning are very costly and generally do not add enough extended life to add value. Review opportunities to repurpose add-on equipment, attachments and outfitting past the lifecycle of the parent asset	Changes to asset use as well as modernizing systems and adjusting to increasing levels of customer and employee service. These are unknown and could lead to large expenditures.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	**Transit Facilities:** Demolition and Replacement Major renovation, including large additions and property acquisition **Transit Vehicles:** Optimal asset lifecycle assessed to determine the timing of replacement that minimizes maintenance/repair and maximizes salvage value. Communication with the Supervisor of Fleet Services of end-of-life assets to help with service and repair decisions to mitigate non-value-added expenditures	Lead to inefficiencies and substandard services for both staff and customers.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Transit Facilities:** Facility Master Plans and Department Plans Community Outreach / Customer Engagement Corporate Energy and Emissions Plans Master Maintenance Plans Capital Asset and Lifecycle Renewal Plans **Transit Vehicles:** Lifecycle Management Review – Condition Assessment at the end of life Review and benchmarking of lifecycles Test extending lifecycle to review impact Cost review on assets past lifecycle	Asset deterioration is over- or under-estimated. Inaccurate growth numbers and estimation of funding.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality and system reliability	**Transit Facilities:** Facility Upgrades and Service Enhancements New Facilities and Buildings Building and or Property Acquisition	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Leasing Additional Buildings and Properties **Transit Vehicles:** Post-delivery inspection to confirm that the vehicle arrived as specified End-user training specific to the equipment to ensure proper operations and operator maintenance (cleaning, greasing, etc.) Consider extended warranties when available and service agreements (e.g. rustproofing) Procurement practices to emphasize quality assets Growth and expansion are guided by, but not limited to: • Burlington's Strategic Plan 2015-2040 • 2018-2022 Burlington's Plan: From Vision to Focus • Burlington's Integrated Mobility Plan • Development Charges Background Study • Green Fleet Strategy	

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	• Provincial Audit & Accountability Review Capital growth projects are identified by City of Burlington Development Charges Background Study (subject to Development Charges Act, 1997 requirements)	
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	**Transit Facilities:** Decommissioning Sale Change of Ownership Consolidation of Buildings Repurposing Buildings **Transit Vehicles:** Optimal lifecycle analysis completed for each asset prior to replacement. Salvage amount can vary, but an average of 15% of replacement value is consistently achieved.	Improper disposal can lead to environmental impacts and expenses.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Planning with an auction to ensure staggering of similar assets to maximize return and not flood the market with availability Planning with auction to target seasonal disposal of assets when demand is high	

4.0 Risk

4.1 Internal Risk

Risk, as discussed in Section 5, is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

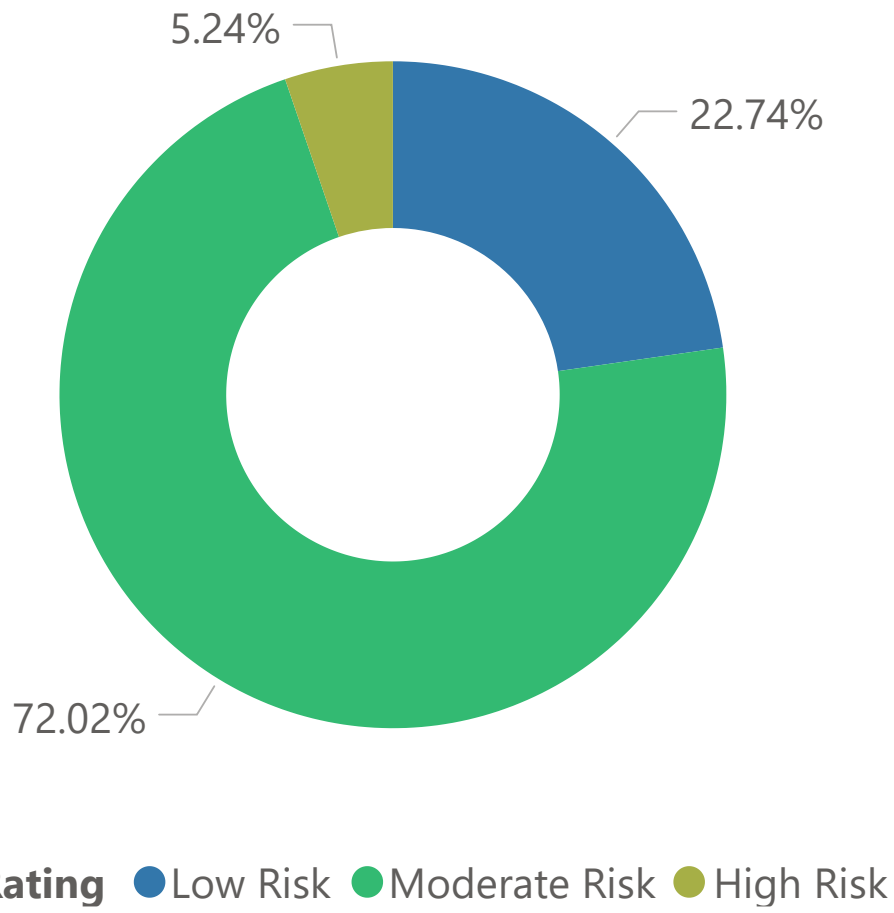
The triple bottom line **consequence of failure** factors are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Transit

Social	Financial	Environmental
• Road Classification • Route criticality • Asset has regulated inspection requirements • Within CH Regulation Limit	• Replacement Value	• Proximity to water

See **Figure 1,** which presents the percentage of assets (weighted) for Transit, with 72% of assets assigned a Moderate Risk rating. This is due in part to the age of Transit infrastructure and the criticality of Transit assets for service delivery.

Figure 1: Risk Rating by Replacement Value – Transit



4.2 External Risk

The following external risks have been identified for the Transit service area:

- Reduced fleet service life or increased maintenance requirements due to extended or prolonged use during weather-related events;
- Inflation, tariffs and supply-chain issues; and
- Decreased asset capacity/performance due to growth.

City of Burlington

Asset Management Plan 2025

Appendix B-8 Fire

State of Fire Infrastructure

The City of Burlington is committed to ensuring public safety through the provision of reliable emergency response and fire prevention services including public education programs, inspections and enforcement.

Replacement Value
$160.39M

Average Condition
Good

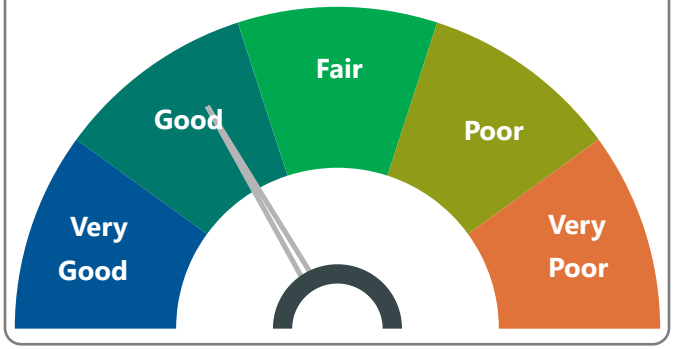
Risk Rating
Moderate

Data Confidence

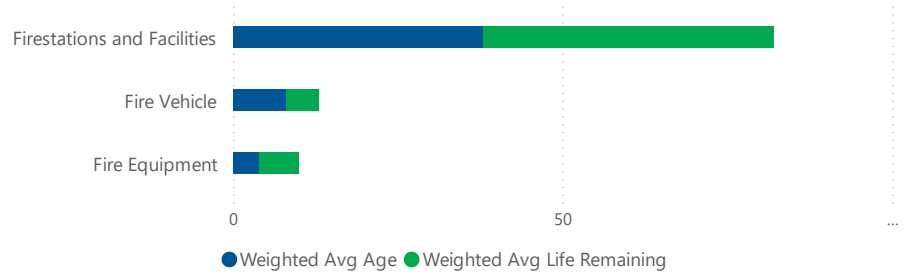
Fire Equipment	B
Fire Vehicle	A
Firestations and Facilities	B

Average Age | Service Life
32 | 68 years

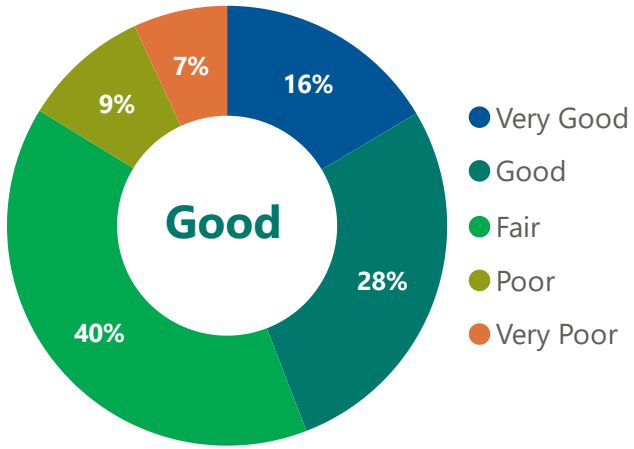
Average Condition



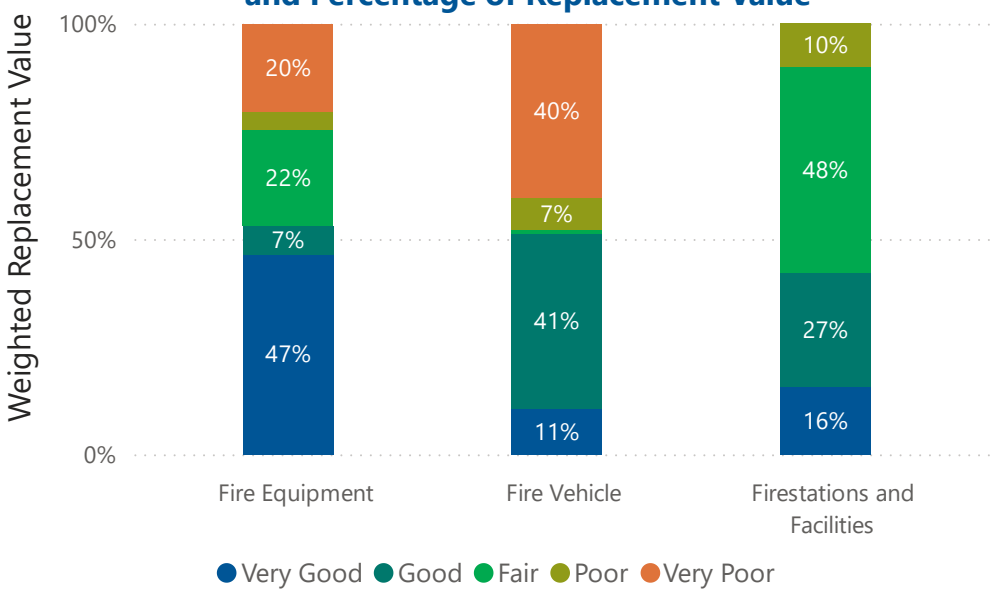
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Fire

The City of Burlington is committed to delivering effective and efficient fire protection services to prevent and mitigate fire loss, injury and death and to promote firefighter safety within the community. To support these services, the City is required to maintain many facilities, vehicles, and equipment. These assets range from specialized stations and training facilities and fire and rescue vehicles to specialized equipment and emergency apparatuses.

In 2022, the City developed a series of strategic priorities and actions for Fire Service Protection services as part of the completion of a 10-year Fire Master Plan (FMP). The FMP guides the delivery of fire prevention, education and protection services through a strategic framework and recommended action plan to support service delivery.

1.0 State of the Local Infrastructure

Ensuring public safety through emergency response and fire prevention is a fundamental expectation of many members of the community. This section summarizes the portfolio of assets associated with the various fire assets managed by the City.

As shown in **Table 1**, the City of Burlington's portfolio of infrastructure assets for Fire is valued at $160.4 million, which is comprised of a mixture of Fire Stations valued at $128.8 million and Vehicles and Equipment valued at $32 million. This replacement value is derived from both historic acquisition costs and from individual system-level asset/component costs within the facility management system.

The total replacement value for the Fire assets is $160.4 million, the average age is 32 years, the average service life is 68 years, and the average OSI condition is Good.

See **Table 1** for the asset inventory and valuation for each asset class as well as average age, average service and average OSI condition.

Table 1: Asset Inventory and Valuation – Fire

Asset Class	Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Fire	Equipment	various	$8.4 M	4	10	Good
Fire	Vehicles	38	$23.2 M	8	12	Fair
Fire	Stations	8	$128.8 M	38	82	Good

The Overall Service Index (OSI) for Fire assets is determined by different factors, depending on the type of asset. For Fire Vehicle and Equipment assets, the OSI Condition is determined by calculating the percentage of life remaining based on the age and estimated service life of the asset. For the Fire Stations, an OSI condition score used both age and the industry-standard Facility Condition Index (FCI) to describe the condition state of the asset. The FCI does not represent a visually assessed condition of the facility but rather is the ratio between the like-for-like repair/renewal needs and the current replacement value of the asset. On its own, it does not describe the performance or capacity of the facility to deliver the desired level of service.

2.0 Levels of Service

The City's inventory of Fire assets includes 8 Stations, 38 Vehicles, and various Equipment.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for the Fire service area.

Table 2: Standardized Corporate LOS Metrics – Fire

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	2.42%
Technical LOS	SOGR Backlog	$6,523,000
Community LOS	% Poor or Very Poor	16.24%

The City has identified Community Levels of Service and Technical Levels of Service, which are presented in **Table 3** and

Table 4.

Table 3: Community Levels of Service – Fire

Service Attribute	Performance Metric	Current Performance (2024)
Scope	Number of fire stations	8
Scope	Number of fire vehicles	38

Table 4: Technical Levels of Service – Fire

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Percentage of Fire facilities in Good or Very Good condition	70.67%
Reliability	Percentage of frontline emergency response apparatus less than 10 years old (NFPA-informed target replacement age)	61%
Reliability	Average age of emergency response apparatus	10.11 years
Reliability	Percentage of annual uptime for emergency response apparatus	95%
Reliability	Number of annual engine hours for frontline emergency response apparatus	9,674
Environmental Sustainability	Annual GHG emissions per square meter of stations (city-wide portfolio average)	34,072 g CO_2/m^2

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Fire

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	**Fire Stations and Facilities:** Inspections through corporate contracts General facility maintenance and scheduled overhauls Contract initiation condition assessments Interim assessment to assess the quality of service **Vehicles and Equipment:** Fire Industry National Fire Protection Association (NFPA) 1911 is the leading standard for the inspection, maintenance, testing, refurbishing and retirement of in-service emergency vehicles. This Standard is referenced as part of the department's preventative maintenance and lifecycle replacement plan. Fire department emergency and non-emergency vehicles are included in the	Deficiencies are not identified through inspections due to concealed components or difficult access. Increased lifecycle costs if maintenance is done improperly or not as scheduled. Incorrectly planned maintenance activities can lead to premature asset failure or impacts on levels of service.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	department's preventative maintenance (PM) program as a proactive measure to maintain and repair the fleet to ensure a ready-to-respond capacity. Vehicle operator daily vehicle checks are completed, and defects are reported to fire department specialized emergency vehicle technicians (EVT) who coordinate the required repairs in-house or outsourced based on the need. Dedicated reserve fleets are included in the PM program to allow extended downtime for longer-duration repairs and/or replacements. Third party testing is completed annually or following any major repair on all fire pumps, ground ladders and aerial devices. Most recommended repairs resulting from inspections are completed in-house. All aerial devices undergo non-destructive testing (NDT) every 5 years or following any major repairs.	

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	**Fire Stations and Facilities:** Mid-life renewal of facilities and major overhauls and modernization of equipment to support department service **Vehicles and Equipment:** Fleet and equipment are replaced according to NFPA standards and certification through the Fire Underwriters Survey (FUS), with standards under the Automobile Fire Fighting Apparatus (ULCS-515) Fire fleets are periodically rotated through eight (8) fire station locations to allow for more frequently used vehicles to be rotated with less frequently used vehicles, extending asset life and maintaining service levels. Non-destructive testing is conducted for aerial (ladder) fleet on an annual basis, and any required repairs are completed to maintain and extend the life of the asset (NFPA 1911)	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service, are unknown and could lead to large expenditures.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Significant repairs designed to extend the life of an asset	
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/rehab is no longer an option	**Fire Stations and Facilities:** Demolition and replacement Major renovation, including large additions and property acquisition **Vehicles and Equipment:** Fleet and equipment are replaced according to NFPA standards and certification through the Fire Underwriters Survey (FUS), with standards under the Automobile Fire Fighting Apparatus (ULCS-515) Fire Industry National Fire Protection Association (NFPA) 1911 is the leading standard for the retirement and lifecycle planning of fire apparatus. NFPA 1901 is the leading standard outlining requirements and certification for new fire apparatus, including the required certification required to meet Fire Underwriters Survey (FUS)	Leads to inefficiencies and substandard services for both customers and staff.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	requirements to ensure that these assets have a positive effect on fire insurance grading public fire protection classification Emergency response apparatus is designed and built to meet the requirements of NFPA 1901 and Standard for Automobile Fire Fighting Apparatus ULCS-515 current editions. Fire department fleets are included in the City's ten (10) year capital budget lifecycle replacement plan. They are replaced based on NFPA-leading standards, industry practices, and manufacturers' recommended use and condition assessments. Fire department fleets are used until the end of estimated service life, and condition requires replacement, legislative requirements and/or leading practice change or service delivery enhancements are approved by the council. Condition assessments are completed annually on all emergency response vehicles, and replacement criteria include estimated service	

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	lifecycle, engine hours, kilometers travelled and anticipated future maintenance costs.	
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Fire Stations and Facilities:** Facility condition assessments Facility master plans Detailed condition assessments Community outreach/customer engagement Fire Master Plan Corporate Energy and Emissions Plan **Vehicles and Equipment:** Fire department fleet and equipment assets are maintained to industry-leading practices, or higher, to ensure reliable delivery of fire emergency and non-emergency services. Fleet and equipment receive detailed and planned preventative maintenance inspections by fire operators and emergency vehicle technicians.	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding. Fire safety knowledge and awareness among the public could be impacted negatively.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Included as part of the Fire department, the fleets' lifecycle replacement strategy is a green strategy which encourages fleet replacement with environmentally green solutions when and where applicable Fire belongs to a fleet and equipment committee with representation from across the corporation to ensure the needs of the department and community are being met.	
Expansion Activities Planned activities to improve an asset's capacity, quality and system reliability	**Fire Stations and Facilities:** Facility upgrades, service enhancements and growth activities New facilities and buildings Building and/or property acquisition Growth and expansions are guided by but not limited to Burlington's Strategic Plan 2015-2040 and 2018-2022 Burlington's Plan: Vison to Focus **Vehicles and Equipment:**	Acquisition of new assets is delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth. Master Plans may overestimate or underestimate required expansions to accommodate for growth.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Fleet and equipment expansion/enhancements are implemented to ensure approved service levels are maintained and continue to meet the needs of a growing and changing city Evaluation of urban density growth and expansion, including building occupancy and height, are continually evaluated Environmental assessment and adoption into fleet assets and replacement Adopt technology to enhance or maintain service level	
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality	**Fire Stations and Facilities:** Decommissioning Sale Change of ownership Consolidation of buildings Repurposing buildings **Vehicles and Equipment:**	Improper disposal can lead to environmental impacts and expenses.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	At the end of estimated service life, fire fleet and equipment are sold or disposed of following City policy, applicable regulations and environmental standards.	

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, Risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

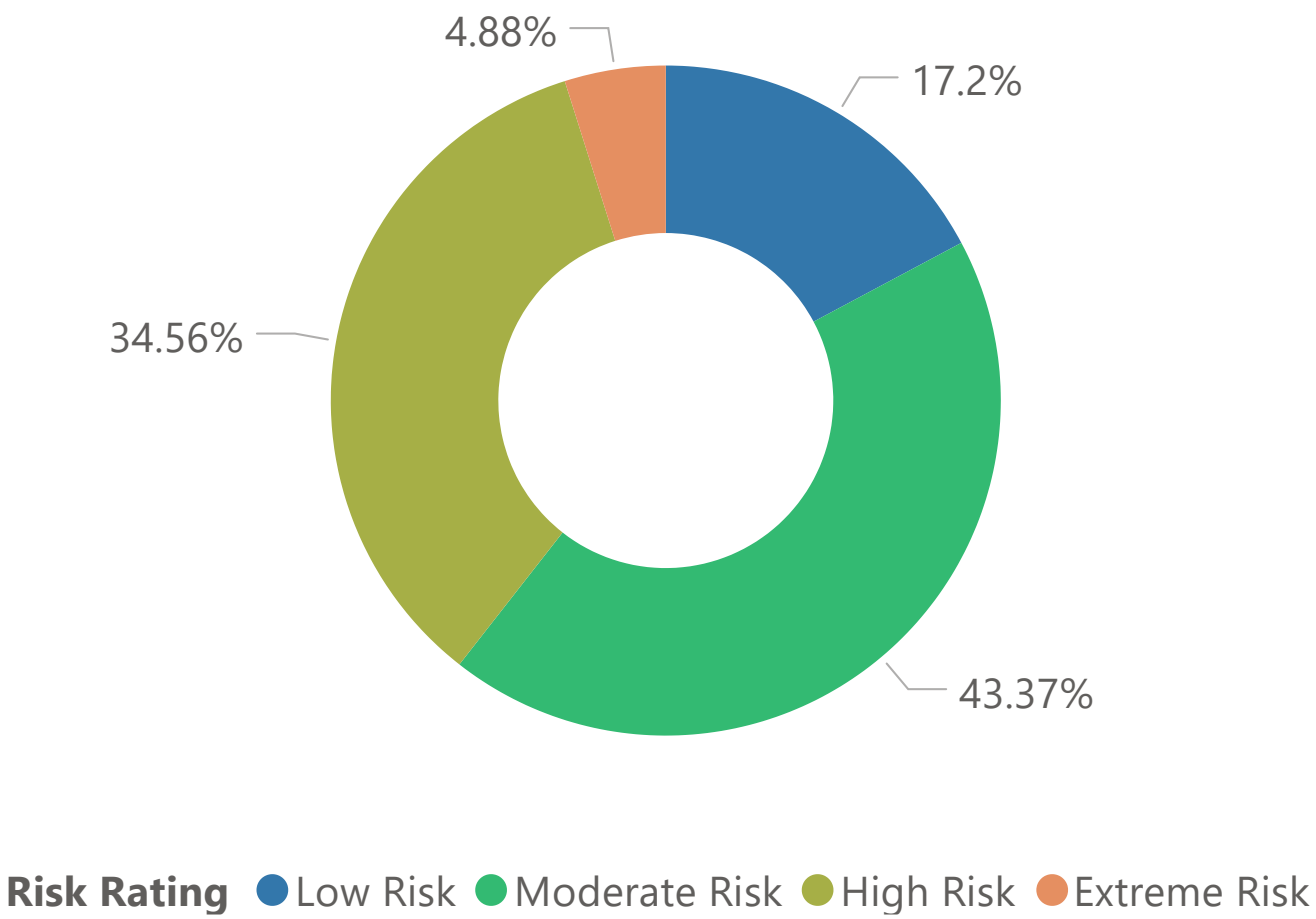
The triple bottom line **consequence of failure factors** are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Fire

Social	Financial	Environmental
• Asset Criticality	• Replacement Value	• Hazardous materials handling

The overall risk profile, shown in **Figure 1**, is Moderate for Fire, with 38% of assets assigned a High-Risk rating. This is due to an aging Fire Vehicle inventory and the high criticality nature of most Fire assets, given their role in emergency and fire response.

Figure 1: Risk Rating by Replacement Value – Fire



4.2 External Risk

The following external risks have been identified for the Fire service area:

- Reduced fleet service life or increased maintenance requirements due to extended use as a response to population and growth increases; and
- Inflation, tariffs and supply-chain issues.

City of Burlington

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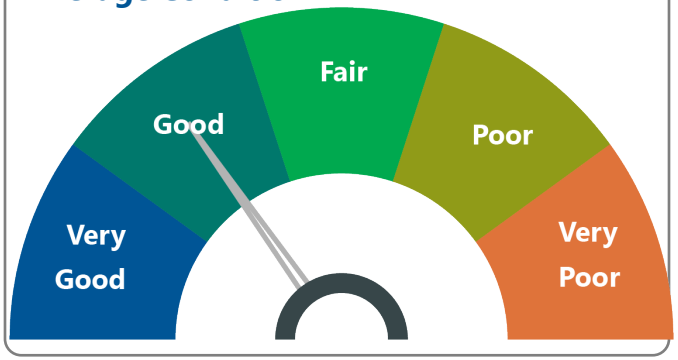
Appendix B-9 Parking

State of Parking Infrastructure

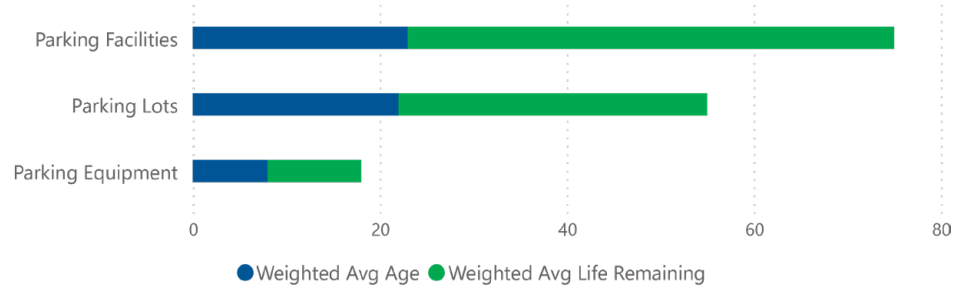
The City of Burlington is committed to efficiently providing safe and convenient parking services at an appropriate quality that is accessible to all residents.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$148.04M	Good	**Moderate**	Parking Equipment	B	22 | 60 years
			Parking Facilities	B	
			Parking Lots	B	

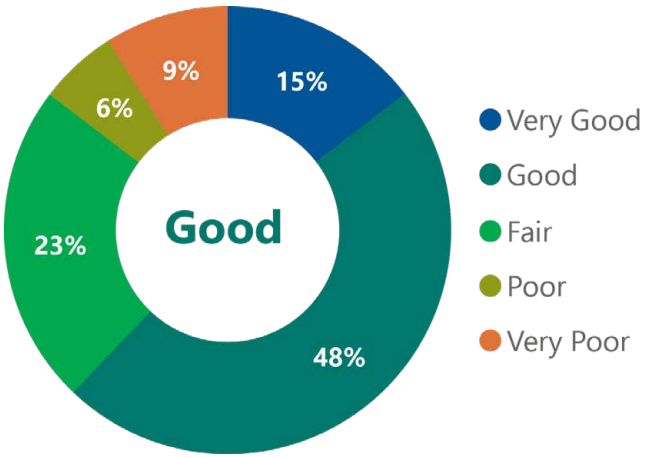
Average Condition



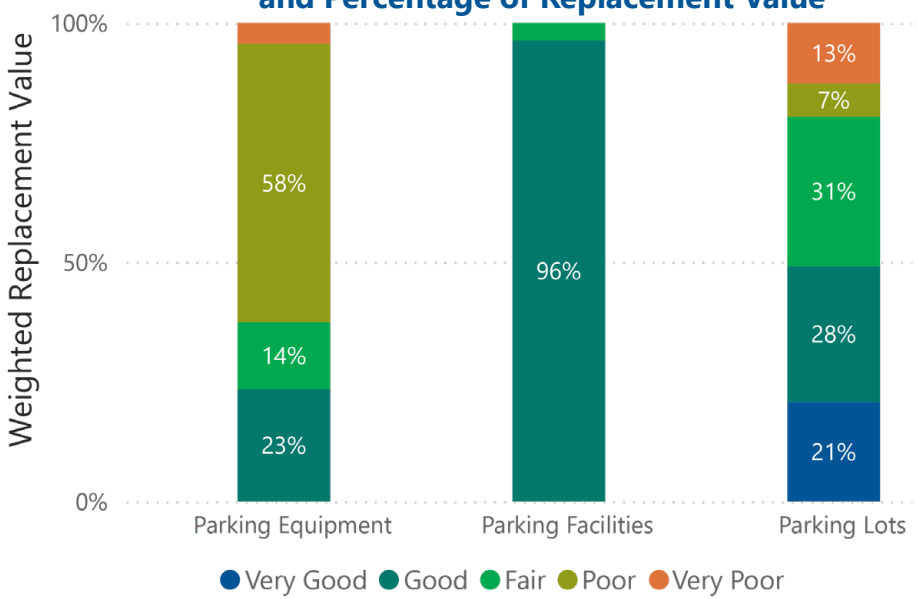
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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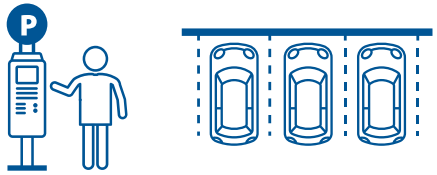


Parking

The City of Burlington owns and maintains parking infrastructure within the downcore core and at many City-owned facilities and park locations. As a non-profit corporation, the City provides controlled rate parking both short-term (on-street) and long-term (off-street) and returns the revenue generation into a reserve fund for parking renewal needs. This supply supports Burlington's business, commercial, and institutional services as well as entertainment venues. The City works to balance the general need to provide accessible and convenient parking whilst ensuring traffic flows, emergency vehicle access and accessible parking for permitted users (as per the City's Strategic Plan, 2.1 – Increased Transportation Flows and Connectivity).

The City introduced occupancy sensors at all City-owned parking lots and on-street parking spaces. Burlington is one of the first cities in Canada to utilize this technology, which keeps track of occupied and available parking spaces and displays real-time information to citizens and visitors, simplifying the process of finding an available parking space. The City also provides 28 public electric vehicle charging stations in the Downtown Core and at various City-owned public facilities.

A Downtown Parking Plan is currently underway, scheduled for completion in 2025. This will include a parking inventory and utilization review, to be followed by a detailed analysis of future parking needs and the development of a strategic plan for parking operations and management.

1.0 State of Local Infrastructure

Having dependable and available parking facilities is an important component of the City's accessibility for both citizens and visitors. This section summarizes the portfolio of infrastructure assets associated with the various parking services managed by the City.

As shown in **Table 1** the City of Burlington's portfolio of infrastructure assets for Parking services is $148 million, which is comprised of Parking Lots valued at $104 million, Equipment valued at $2 million, and Parking Facilities valued at $41 million. This replacement value is derived from individual system-level assets/components within the facility management system and site amenities associated with each facility, such as surface/corporate lots, downtown lots, parking garages/offices, parking services building, pay stations, and other equipment.

The total replacement value for the Parking assets is $148 million, the average age is 22 years, the average service life is 60 years, and the average OSI condition is Good.

See **Table 1** for the asset inventory and valuation for each asset as well as average age, average service and average OSI condition.

Table 1: Asset Inventory and Valuation – Parking

Asset Class	Asset Type	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Parking Equipment	EV Chargers, Pay stations, Signage	$2.1 M	8	18	Fair
Parking Facilities	Parking Garage	$40.3 M	21	75	Good
Parking Facilities	Parking Services Building	$1.5 M	74	75	Fair
Parking Lots	Corporate Lots	$97.3 M	23	54	Good
Parking Lots	Downtown Lots	$6.8 M	15	60	Good

For facilities, the OSI was partly derived from the industry standard performance benchmark rating, called the Facility Condition Index (FCI). An FCI does not represent a visually assessed condition of the facility, but rather is the ratio between the like-for-like repair/renewal needs, and the current replacement value of the asset. A limitation of FCI is that it does not describe the facility's performance or capacity to deliver the desired service, and its accuracy is dependent on the total current replacement value calculated. For this reason, the Overall Service Index (OSI) for facility reporting in this AMP uses both FCI and facility age as criteria, with age being used as a proxy for facility performance and/or capacity.

For the remaining parking infrastructure, the OSI condition was determined either by age (as a proportion of its estimated service life), assessment, or through professional judgment by City staff.

2.0 Levels of Service

The City's inventory of Parking assets includes Parking Lots, Parking Facilities and Equipment that includes EV chargers, pay stations and signage owned by the City. The lowest average age is Parking Equipment at 8 years and the highest average age is the Parking Services Building at 74 years.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for Parking assets.

Table 2: Standardized Corporate LOS Metrics – Parking

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	1.13%
Technical LOS	SOGR Backlog	$7,653,000
Community LOS	% Poor or Very Poor	14.64%

The City has identified Community Levels of Service (LOS) and Technical Levels of Service, which are presented in **Table 3** and **Table 4**.

Table 3: Community Levels of Service – Parking

Service Attribute	Performance Metric	Current Performance (2024)
Reliability	Percentage of parking assets meeting City quality standards	62.13%
Availability	Percentage utilization of publicly available EV chargers (time used vs time available)	22%

Table 4: Technical Levels of Service – Parking

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Average Facility Condition Index (FCI)	0.05 (Good)
Availability	Parking revenue as a percentage of total parking operations costs (downtime)	2.27%
Availability	Percentage of scheduled operational hours for parking machines in-service (up-time)	97.20%
Reliability	Percentage of parking lots in poor and very poor condition (downtown, revenue-generating)	9.50%
Reliability	Percentage of corporate parking lots in poor and very poor condition (non-revenue generating)	13.53%
Reliability	Percentage of parking equipment in poor and very poor condition	4.31%

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Parking

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Scheduled inspections of parking lots Complete Routine Maintenance	Increased lifecycle costs if maintenance is done improperly or not as scheduled. May contribute to premature asset failure, service disruptions, or pose health and safety risks. Customer dissatisfaction with the condition and accessibility of Facilities.
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	**Parking Lots:** Minor Reconstruction Resurfacing **Parking Facilities:** Mid-life Renewal	Renewal/rehab activities may not extend asset life as much as expected, leading to premature asset failure or the need for another renewal/rehab activity. Increased lifecycle costs if renewal/rehab activities are done improperly or not as scheduled. Changes to asset use, as well as modernizing systems and adjusting to increasing levels of customer and employee service.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option	**Parking Lots:** Full Reconstruction	Delays in construction projects may result in health and safety risks, higher costs, longer service disruption and customer dissatisfaction.
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	**Parking Lots:** Corporate Parking Lot Assessments Downtown Parking Lot Inspection / Assessments	Asset deterioration is over or underestimated. Inaccurate growth numbers and estimation of funding.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality, and system reliability.	Property Acquisition and lot expansions Parking lot modifications in line with future growth and expansion planning to accommodate other provided municipal services Electrification of fleet vehicles as it relates to charging stations	Growth activities are delayed or cancelled, resulting in the system being unable to accommodate for population and employment growth. Master Plans may overestimate or underestimate required road expansions to accommodate for growth.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Disposal Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality.	Removal and or repurpose Resale	Improper disposal can lead to environmental impacts and expenses.

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, Risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure Score X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

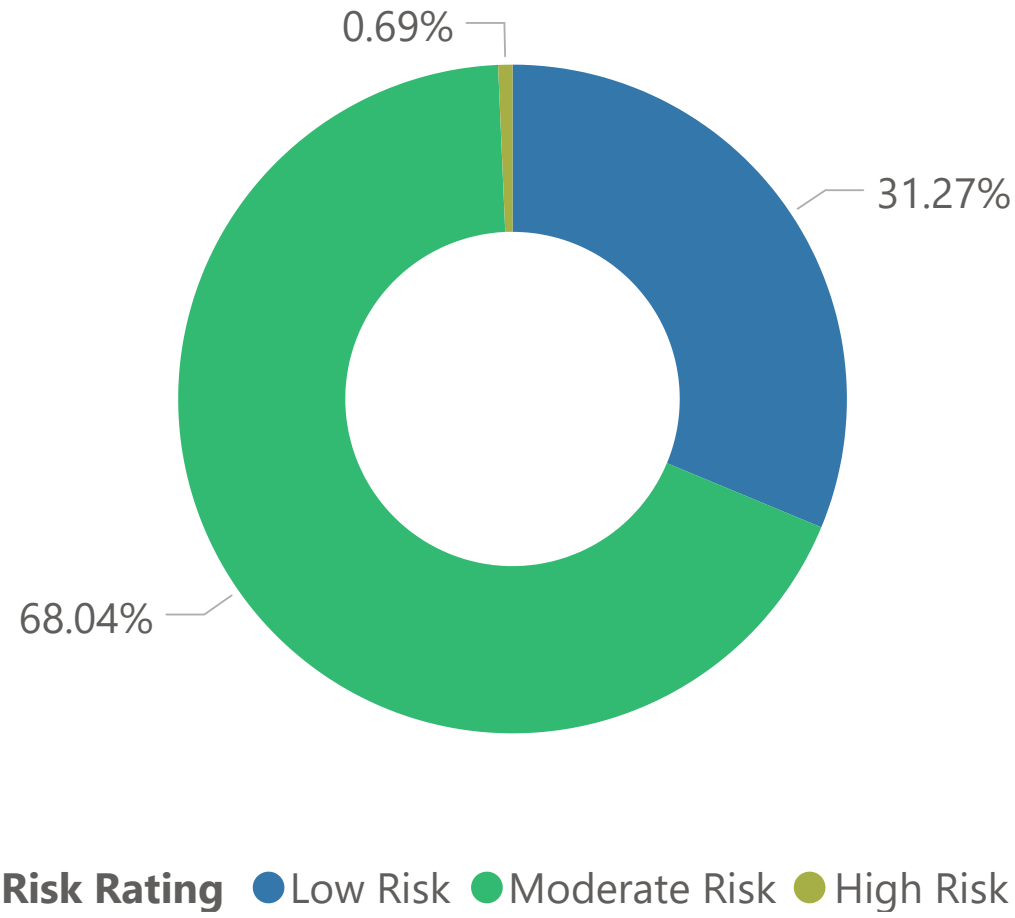
The triple bottom line **consequence of failure factors** are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Parking

Social	Financial	Environmental
• Asset Criticality	• Replacement Value	N/A

The overall risk profile, shown in **Figure 1** below, is Moderate for Parking, with 68% of assets assigned a Moderate risk rating due to their age.

Figure 1: Risk Rating by Replacement Value – Parking



4.2 External Risk

The following external risks have been identified for the Parking service area:

- Reduced pavement lifespans or increased maintenance requirements due to extreme heat, ice or precipitation events; and
- Inflation, tariffs and supply-chain issues.

City of Burlington

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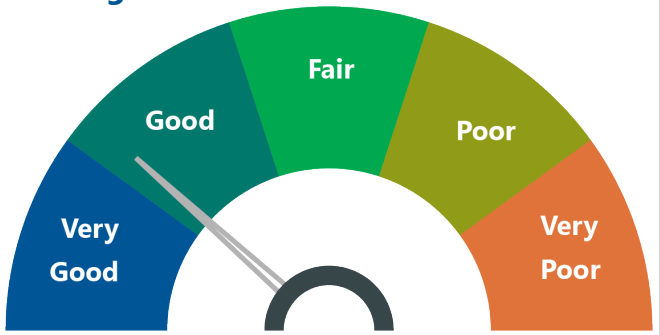
Appendix B-10 Information Technology

State of Information Technology Infrastructure

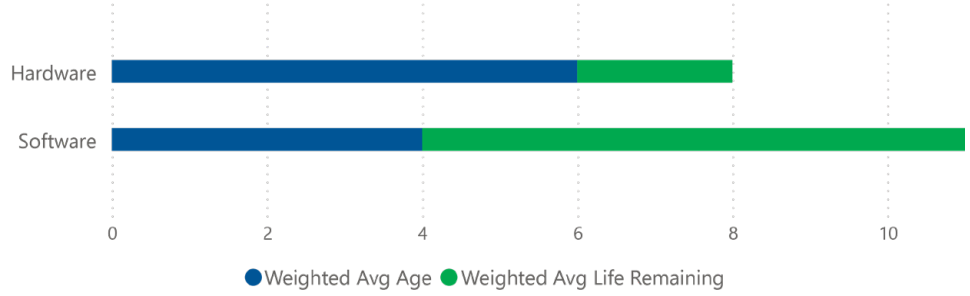
The City of Burlington is committed to providing reliable technology services and solutions to internal corporate services owners and its residents.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$88.83M	Good	**Moderate**	Hardware	B	4 | 10 years
			Software	B	

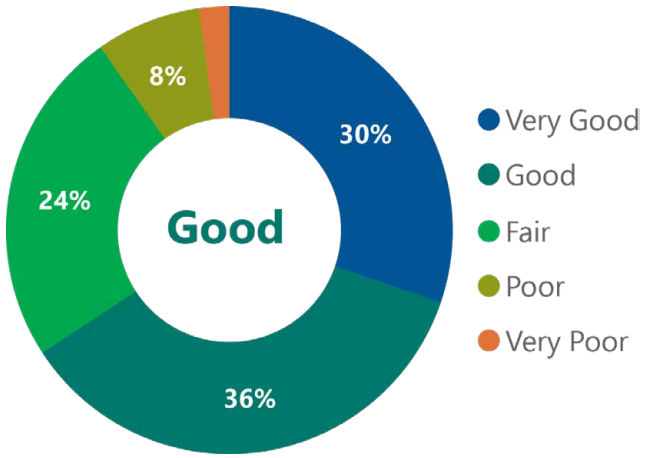
Average Condition



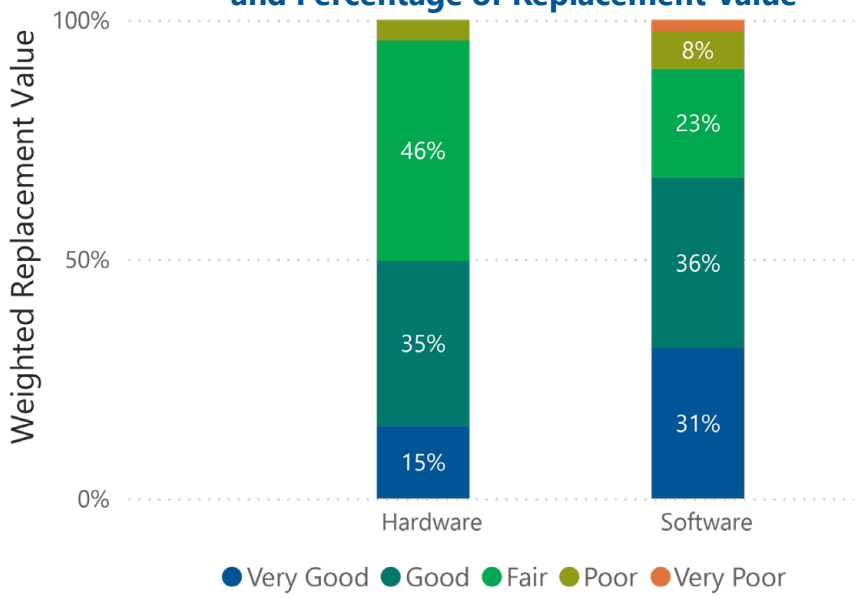
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Information Technology

Information Technology is managed by Burlington Digital Services (BDS) department. BDS provides professional consulting services by proactively supporting the corporation's business areas with technology solutions that meet business objectives. This service contributes to the City's Strategic Plan, 4.1 Good Governance, and 4.2 Community Building through Culture and Community Activities.

1.0 State of Local Infrastructure

BDS delivers desktop hardware and software support, business application management and support, online corporate services and bookings, data management and business intelligence, security, training and general consulting. BDS Services is also responsible for managing the City's data centers, network, internet access, email and telephone system.

As shown in **Table 1**, the City of Burlington's portfolio of facilities for Information Technology is valued at $88.8 million, which is comprised of a mixture of Hardware Systems and Devices valued at $6.5 million and Software Applications valued at $82.5 million. This replacement value is derived from individual system-level assets/components within the facility management system and site amenities associated with each facility, such as major, minor, hosted solutions, servers, telephones, switches and workstations.

The total replacement value for the Information Technology assets is $88.8 million, the average age is 4 years, the average service life is 10 years, and the average OSI condition is Good.

See **Table 1** for the asset inventory and valuation for each asset class and average age, average service, and OSI condition.

Table 1: Asset Inventory and Valuation – Information Technology

Asset Class	Asset Type	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Hardware	Major	$0.5 M	0	5	Very Good
Hardware	Servers	$2.0 M	5	6	Good
Hardware	Switches	$1.0 M	5	5	Good
Hardware	Telephones	$1.0 M	6	10	Good
Hardware	Workstations	$2.0 M	10	5	Good
Software	Hosted Solutions	$16.3 M	6	11	Good
Software	Major	$52.4 M	2	12	Very Good
Software	Minor	$13.8 M	7	5	Fair

Burlington's computer network extends to over forty (40) corporate building locations across the City. A secure internet connection provides remote access to the City's network for those staff working from other locations. BDS maintains an inventory of its hardware and software assets in a variety of applications and data systems. Given the short lifespan of IT assets, the replacement values maintained by the City are based on the most recent purchase price or license fee for an asset. However, given the dynamic schedule for both Software and Hardware assets, the City also updates asset values based on changing market prices from its vendors and suppliers. As more software solutions migrate to cloud-based servers from traditional on-premises solutions, the approach to lifecycle management and renewal of these assets is changing as well.

Asset condition for Information Technology was determined by BDS staff with consideration of the age and estimated service life.

2.0 Levels of Service

The City's inventory of Information Technology assets includes major, minor, hosted solutions, servers, telephones, switches and workstations. The highest average age is for Hardware at 10 years, and the lowest is for Software at 2 years.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for Information Technology assets.

Table 2: Standardized Corporate LOS Metrics – Information Technology

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	3.11%
Technical LOS	SOGR Backlog	$3,754,000
Community LOS	% Poor or Very Poor	9.79%

The City has identified Community Levels of Service (LOS) and Technical Levels of Service, which are presented in **Table 3** and **Table 4.**

Table 3: Community Levels of Service – Information Technology

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Percentage of system downtime	0.06%
Reliability	Percentage of tickets/incidents resolved on time according to existing service agreements	65.38%
Availability	Number of devices supported (PCs and mobile devices)	1880

Table 4: Technical Levels of Service – Information Technology

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Percentage of security renewals completed as scheduled	100%
Quality	Percentage of hardware renewals completed as scheduled	88.50%
Quality	Percentage of software renewals completed as scheduled	93%
Reliability	Number of Service Desk Tickets per year	5639
Reliability	Number of significant security measures implemented in previous 12 months	12
Reliability	Operational uptime of critical systems (percentage)	99.94%
Availability	Successful deployment of releases (percentage)	98.82%

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Information Technology

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repairs and activities associated with unexpected events.	IT Staff, service leads and users of City hardware and software assets provide asset concerns on a proactive basis through alerting applications, routine monitoring and preventative maintenance. Under special circumstances, service leads manage assets under their control, such as the Traffic Control system. Concerns are also addressed through routine maintenance programs supported by the user to the IT Service Desk. Major and Minor Software applications can continue to provide service beyond their expected lifecycle if maintenance for the system is effective and ongoing.	Failure to complete planned maintenance can lead to premature asset failure and disruption of service. Urgent work requests may not be supported if sufficient resources are not allocated to ensure IT Service coverage. Unanticipated loss of vendor support will result in service disruptions.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Maintain communication with existing system vendors to ensure/forecast continuous support indefinitely.	
Renewal/ Rehab Activities Significant repairs designed to extend the life of the asset	Proactive rehabilitation of City software programs Infrastructure may undergo both Software and hardware upgrades to keep current and fully supported End-user devices and applications are generally not rehabilitated Assumption that all hosted solutions will utilize full contract extensions at least once before renewal or replacement is required	Incorrect assumptions about renewal or rehabilitation activities may result in increased funding needs and premature replacement. Failure to complete renewal or rehabilitation can lead to premature asset failure and disruption of service.
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option.	Scheduled replacement programs for IT infrastructure are in place. Assets are replaced when they are no longer meeting operational requirements or are reaching the end of support. When IT applications are no longer supported by the vendor and ITS,	Failure to complete or initiate replacement activities in time can lead to disruption of service.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	generally, they would be replaced with a new application. End-user devices and applications are replaced when the asset reaches the end of its estimated service life, or an unexpected event occurs with the asset.	
Non-Infrastructure Activities Actions or policies that can lower costs or extend service lives	Coordinate business needs with anticipated IT support to determine prioritization of IT asset replacements Continuous focus to ensure application and software assets are considered "in support" to mitigate potential malware / cyber-attacks and ensure the asset is operating efficiently for individuals using the asset	Failure to understand corporate needs or security risks may result in loss of productivity or risk of cyber incidents.
Expansion / Service Enhancements Planned activities to improve an asset's capacity, quality, and system reliability.	Expansion activities of applications and Software include additional licensing due to staff growth, needs or implementation of new modules within the solution.	Lack of resources or delays in expansion activities may result in loss of productivity, decrease in levels of service, or disruption of service.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Infrastructure services may be expanded to support new facilities or expanded services in existing facilities. End-user assets may be expanded to equip new users or address new user requirements. Infrastructure components may be expanded by adding capacity (e.g. memory, ports, hard drives)	
Disposal Activities associated with disposing of an asset once it has reached the end of its estimated service life or is otherwise no longer needed by the municipality.	IT Services works with authorized vendors to dispose of technology components per government-mandated standards to ensure the assets are properly disposed. Some decommissioned equipment with market value goes through a data sanitization (wipe process) and is sold for resale purposes. Server drives are destroyed to ensure no data leakage.	Failure to properly dispose of hardware and software assets may result in risk of data security breaches or loss of resale revenue.

4.0 Risk

4.1 Internal Risk

Risk, as discussed in Section 5, is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure Score X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

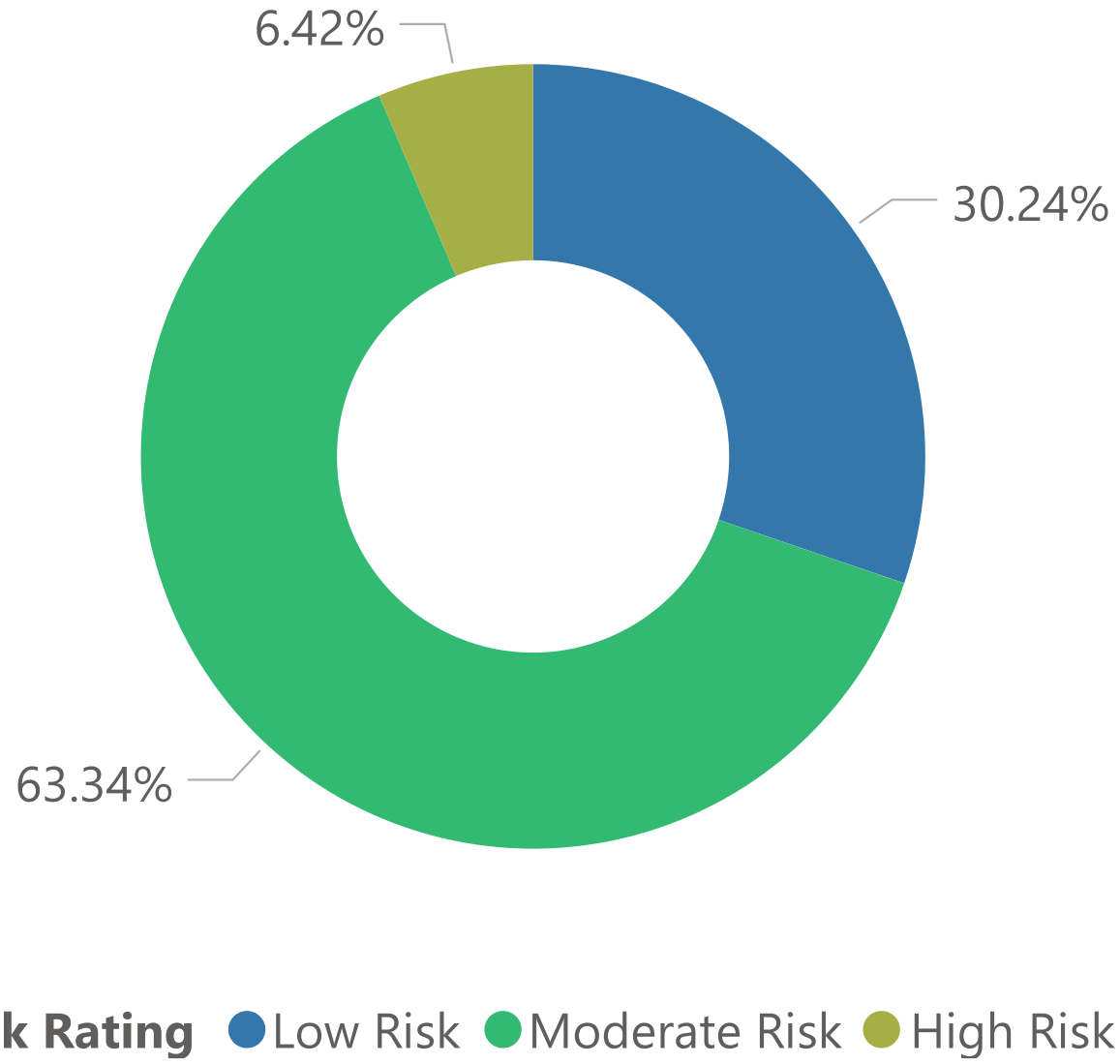
The triple bottom line **consequence of failure factors** are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Information Technology

Social	Financial	Environmental
• Asset criticality	• Replacement Value • Incident Recovery	N/A

The overall risk profile, shown in **Figure 1** is Moderate, with 63.34% of assets assigned a Moderate risk rating.

Figure 1: Risk Rating by Replacement Value – Information Technology



4.2 External Risk

The following external risks have been identified for the Information Technology service area:

- Inflation, supply-chain disruptions, tariffs;
- Power failures due to extreme weather; and
- Disruptions or incidents from third-party providers.

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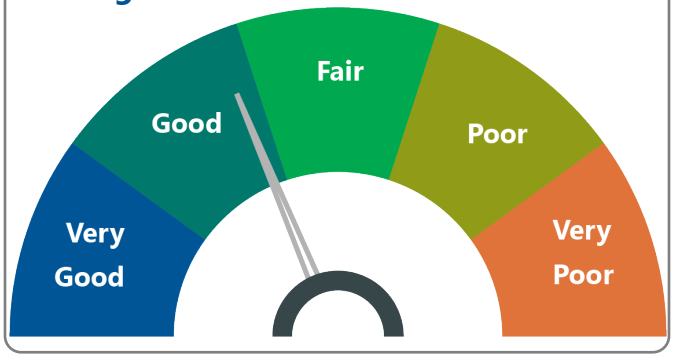
Appendix B-11 Corporate Fleet

State of Corporate Fleet Infrastructure

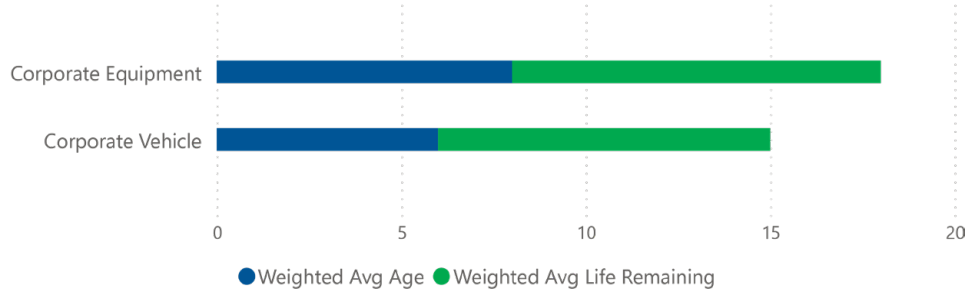
The City of Burlington is committed to committed to providing corporate vehicle and equipment operation, maintenance, replacement and operator training that is safe, reliable and environmentally sustainable.

Replacement Value	Average Condition	Risk Rating	Data Confidence		Average Age | Service Life
$51.92M	Good	**Moderate**	Equipment	B	7 | 17 years
			Vehicle	A	

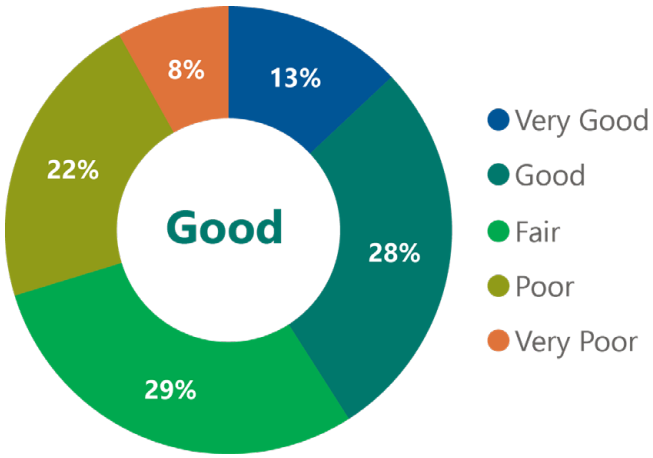
Average Condition



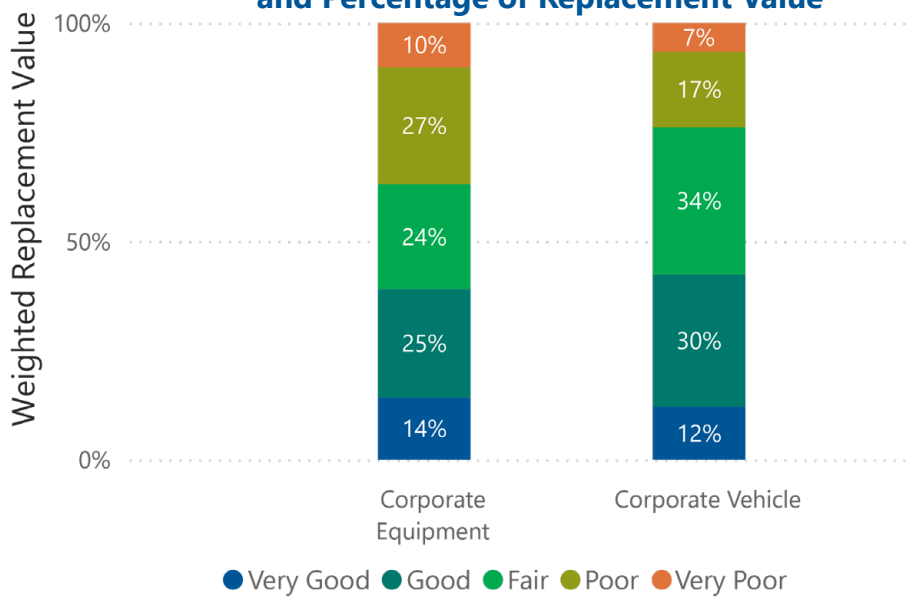
Average Age and Remaining Service Life



Asset Condition



Asset Condition by Asset Class and Percentage of Replacement Value



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Corporate Fleet

City-owned fleet vehicles and equipment are operated across four different service areas within the corporation: Fire, Transit, Parking, and Corporate Fleet. This section of the AMP summarizes the vehicles and equipment within the Corporate Fleet service, which are managed by Roads, Parks and Forestry (RPF). This service contributes to the City's Strategic Plan, 3.2 Environmental and Energy Leadership, and 4.1 Good Governance.

1.0 State of Local Infrastructure

An efficient, dependable and safe fleet inventory is required for service delivery to both other City departments, and to members of the community. The City's Corporate Fleet portfolio is valued at nearly $52 million.

The Corporate Fleet assets include light, medium and heavy vehicles that perform a variety of services from earth moving to snow plowing. Corporate Fleet equipment types include on- and off-road light, medium and heavy equipment, ranging from chainsaws to trailers to Zambonis.

The total replacement value for the Corporate Fleet assets is $51.9 million, the average age is 7 years, the average service life is 17 years, and the average OSI condition is Good.

See **Table 1** for the asset inventory and valuation for each asset class as well as average age, average service and average OSI condition.

Table 1: Asset Inventory and Valuation – Corporate Fleet

Asset Class	Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Corporate Vehicle	Heavy Vehicle	31	$16.8 M	6	16	Good
Corporate Vehicle	Light Vehicle	124	$7.8 M	6	14	Good
Corporate Vehicle	Medium Vehicle	31	$4.3 M	7	16	Fair
Corporate Equipment	Heavy Equipment	8	$1.4 M	8	22	Good

Asset Class	Asset Type	Quantity	Replacement Value ($2024)	Average Age (years)	Average Service Life (years)	Average OSI Condition
Corporate Equipment	Heavy Equipment (Off Road)	6	$2.4 M	13	22	Fair
Corporate Equipment	Light Equipment	346	$1.6 M	1	12	Very Good
Corporate Equipment	Light Equipment (Off Road)	394	$6.6 M	9	17	Fair
Corporate Equipment	Medium Equipment	23	$1.5 M	10	30	Good
Corporate Equipment	Medium Equipment (Off Road)	64	$9.6 M	7	16	Good

These replacement values were developed using historical acquisition costs, inflation, and estimated costs. The relatively short life of fleet assets and the availability of off-the-shelf vehicles and prices give increased confidence in the validity of the valuation. For more complex equipment and vehicles (requiring a degree of customization or the addition of equipment to a base vehicle), additional time is required to assess replacement values at the anticipated time of purchase.

The Corporate Fleet asset data inventories are maintained in a work order management system for tracking vehicles and equipment, issuing/managing work orders, preventative maintenance and inspection programs, parts inventory, purchasing, fueling and other associated costs. Regular updates to the inventory are completed after regularly scheduled maintenance activities, renewal, and replacement of fleet assets.

For Corporate Fleet assets, the OSI condition scores were age-determined by calculating the percentage of life remaining based on the age and estimated service life of the asset.

2.0 Levels of Service

The City's inventory of Corporate Fleet assets includes 186 Corporate Vehicles and 841 Corporate Equipment.

The City has selected three standardized corporate Levels of Service (LOS) metrics to report the current LOS across all 11 service areas. See **Table 2** for the current LOS (2024) for Corporate Fleet assets.

Table 2: Standardized Corporate LOS Metrics – Corporate Fleet

Technical or Community LOS	Standardized Corporate LOS	Current Performance (2024)
Technical LOS	Reinvestment Rate (%)	7.11%
Technical LOS	SOGR Backlog	$1,593,000
Corporate LOS	% Poor or Very Poor	29.72%

The City has identified Community Levels of Service (LOS), and Technical Levels of Services, which are presented in **Table 3** and **Table 4.**

Table 3: Community Levels of Service – Corporate Fleet

Service Attribute	Performance Metric	Current Performance (2024)
Scope	Number of heavy vehicles	31
Scope	Number of light vehicles	124
Scope	Number of medium vehicles	31

Table 4: Technical Levels of Service – Corporate Fleet

Service Attribute	Performance Metric	Current Performance (2024)
Quality	Fleet Utilization Rate (Percentage of Target Use versus Actual Use)	92%
Quality	Percentage of fleet assets that are nearing the end of useful life (>90% consumption of useful life)	27%
Quality	Percentage of MTO maintenance inspection completed	100%
Quality	Percentage of Safety Inspections completed and passed	100%
Reliability	Percentage of fleet in Poor or Very Poor condition	8.12%
Environmental Sustainability	Annual GHG emissions for light fleet assets (tonnes per year)	406 tCO_{2e}/year
Environmental Sustainability	Annual GHG emissions for medium fleet assets (tonnes per year)	1022 tCO_{2e}/year
Environmental Sustainability	Annual GHG emissions for heavy fleet assets (tonnes per year)	5643 tCO_{2e}/year
Environmental Sustainability	Percentage of fleet transitioned to non-fossil fuel	13.40%

3.0 Asset Management Strategy

Table 5: Lifecycle Activities – Corporate Fleet

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Maintenance Activities Including regularly scheduled inspection and maintenance or more significant repair and activities associated with unexpected events	Carrying out regular maintenance activities on all vehicles and equipment as per manufacturer's recommendations for optimum performance and lifecycle Reactive maintenance for circumstances not easily mitigated (i.e. vehicle accidents, faster than anticipated breakdown) Tracking maintenance activities in order to continue to improve. Target is to minimize unplanned, non-standardized work. Empowering certified staff to make decisions on elective repairs (under $1,000) to ensure continuity of service and fewer breakdowns while in service	Delayed maintenance activities may result in unscheduled downtime due to repair or failure.
Renewal / Rehabilitation Significant repairs designed to extend the life of the asset	Regular preventative maintenance programs assist in determining renewals/rehabilitation required	Delayed renewals or rehabilitation may result in unscheduled downtime due to repairs or failure.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
	Major overhauls or reconditioning are very costly and generally do not add enough extended life to add value Review opportunities to repurpose add-on equipment, attachments and outfitting past the lifecycle of the parent asset	
Replacement Activities Activities that are expected to occur once an asset has reached the end of its estimated service life and renewal/ rehab is no longer an option.	Optimal asset lifecycle assessed to determine the timing of replacement that minimizes maintenance/repair and maximizes salvage value. Communication with the Supervisor of Fleet Services of end-of-life assets to help with service and repair decisions to mitigate non-value-added expenditures	Delayed replacement may result in unscheduled downtime due to failure. Reduction in services may result due to failure.
Non-Infrastructure Actions or policies that can lower costs or extend service lives	Lifecycle Management Review – Condition Assessment at the end of life Review and benchmarking of lifecycles Test extending lifecycle to review impact Cost review on assets past lifecycle	Asset renewal needs are under- or overestimated.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
Expansion Activities Planned activities to improve an asset's capacity, quality and system reliability	Growth and expansion are guided by, but not limited to: Burlington's Strategic Plan 2015-2040 2018-2022 Burlington's Plan: From Vision to Focus Burlington's Integrated Mobility Plan Development Charges Background Study Green Fleet Strategy Provincial Audit & Accountability Review Capital growth projects are identified by City of Burlington Development Charges Background Study (subject to Development Charges Act, 1997 requirements) Electrification of fleet vehicles	Growth activities may be delayed and impact the quality of asset services provided. Accelerated deterioration of other assets may result if growth needs are not assessed.
Disposal Activities Activities associated with disposing of an asset once it has reached the end of its estimated	Optimal lifecycle analysis completed for each asset prior to replacement. Salvage amount can vary, but an average of 15% of replacement value is consistently achieved.	Improper disposal can lead to environmental damages or lost recovery from salvage.

Activity Type	Lifecycle Management Activities	Risks Associated with Not Completing the Activities
service life or is otherwise no longer needed by the municipality	Planning with the auction to ensure staggering of similar assets to maximize return and not flood the market with availability Planning with auction to target seasonal disposal of assets when demand is high	
Service Improvement Activities Activities to improve an asset's capacity, quality and system reliability	Post-delivery inspection to confirm that the vehicle arrived as specified End-user training specific to the equipment to ensure proper operations and operator maintenance (cleaning, greasing, etc.) Consider extended warranties when available and service agreements (i.e. rustproofing) Procurement practices to emphasize quality assets	

4.0 Risk

4.1 Internal Risk

As discussed in Section 5, Risk is quantified in this AMP by multiplying the likelihood of an asset's failure by the consequence of an asset's failure. Risk scores can be sorted from highest risk to lowest risk or can be reported as a percentage of the asset portfolio.

Risk Score = Likelihood of Failure X Consequence of Failure

The **likelihood of failure factor** is derived from the condition/age of the asset.

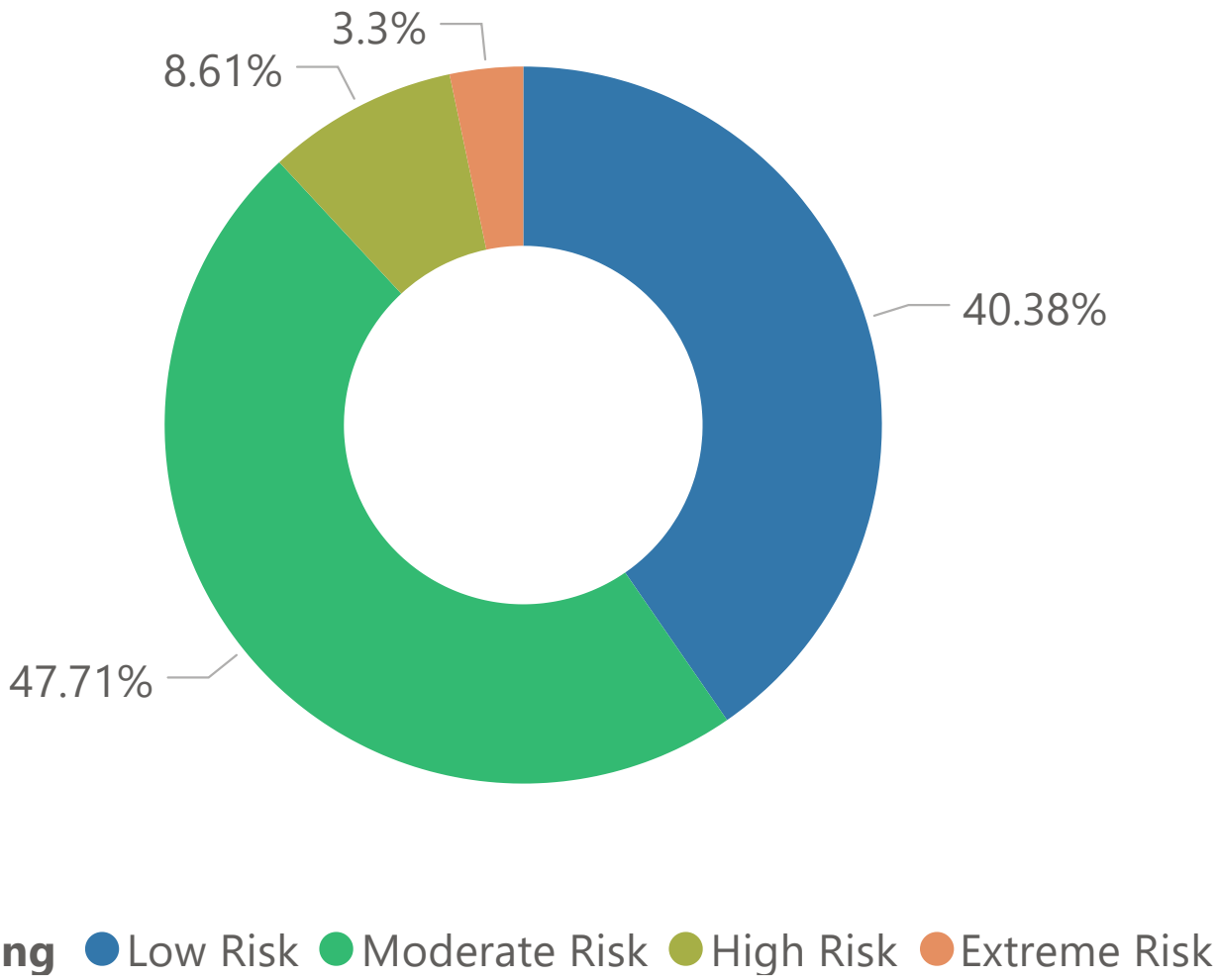
The triple bottom line **consequence of failure factors** are presented in **Table 6** for social, financial and environmental consequences.

Table 6: Consequence of Failure Factors – Corporate Fleet

Social	Financial	Environmental
• Asset Criticality	• Replacement Value	• Fuel Type

The overall risk profile, shown in Figure 1 below, is Moderate for Corporate Fleet assets, with 47.71% of assets assigned a Moderate risk rating.

Figure 1: Risk Rating by Replacement Value – Corporate Fleet



4.2 External Risk

The following external risks have been identified for the Corporate Fleet service area:

- Reduced fleet service life or increased maintenance requirements due to extended or prolonged use during weather-related events; and
- Inflation, tariffs and supply-chain issues.