Service Area Asset Management Plan
June 2024

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Land Acknowledgement

The City of Brampton is located on the traditional territories of the Mississaugas of the Credit, Haudenosaunee, and Wendat Nations who have called this land home since time immemorial. We acknowledge the agreements made in Treaty 19—the Ajetance Purchase of 1818—and are committed to our ongoing role in reconciliation through meaningful action rooted in truth, justice, and respect. We are grateful to the original caretakers of this land who have ensured we are able to work, play, and live in Brampton now and in the future.

The City of Brampton has formally adopted the Truth and Reconciliation Commission's Calls to Action; the United Nations Declaration on the Rights of Indigenous Peoples; the National Inquiry into Missing and Murdered Indigenous Women and Girls, and 2SLGBTQIA+ Peoples' Calls to Justice. Through a nation-to-nation approach with our host Nations and urban Indigenous community, the City will utilize the recommendations for municipalities within these reports and frameworks to guide its work of increasing awareness, building capacity, and collaborating on solutions.

The City's relationships with the Indigenous community contribute to the continuing creation of processes for reconciliation that drive economic recovery, social development, and cultural inclusion of the Indigenous community. The City honours the uniqueness of Indigenous knowledge, histories, and traditions, and recognizes their importance in building and supporting an inclusive, successful, innovative, and brighter future for Brampton.

Staff Acknowledgement

The development of the Service Area Asset Management Plan was a significant undertaking with contributions from staff across the organization. The Service Area AMP was prepared collaboratively with all City service areas and its input was collected over a series of workshops and meetings, which required extensive time and effort. The Corporate Asset Management Office would like to acknowledge the efforts of the City of Brampton staff and sincerely thank everyone including the Steering Committee, Working Group, Subject Matter Experts from the City's service areas, and City Council, for their continued support and guidance throughout the development of this Plan.

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Key Acronyms & Abbreviations

AM   Asset Management

AMP   Asset Management Plan

CAM   Corporate Asset Management

CAPEX   Capital Expenditures

City   The City of Brampton

CLOS   Current Levels of Service

CMMS   Computerized Maintenance Management System

DC   Development Charges

LC   Lifecycle

LOS   Levels of Service

OPEX   Operating Expenditures

O&M   Operations and Maintenance

PSAB   Public Sector Accounting Board

PLOS   Proposed Levels of Service

QA   Quality Assurances

QC   Quality Control

SA   Service Area

SLA   Service Level Agreement

SOP   Standard Operating Procedure

SOLI   State of Local Infrastructure

Glossary

The following terms and definitions are provided below.

Asset Management
The combination of management, financial, economic, engineering, and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.

Asset Management Plans (AMPs)
An Asset Management Plan (AMP) is a formal document that outlines the strategies and processes for managing an organization's assets to deliver an agreed standard level of service.

Benchmarking
A process of comparing the business processes and performance metrics including cost, cycle time, productivity, or quality to another that is widely considered to be an industry standard benchmark or best practice.

Computerized Maintenance Management System (CMMS)
A CMMS software package maintains a computer database of information about an organization's maintenance operations. This information is intended to help maintenance workers do their jobs more effectively (for example, determining which storerooms contain the spare parts they need) and to help management make informed decisions (for example, calculating the cost of maintenance for each piece of equipment used by the organization, possibly leading to better allocation of resources).

Capital Expenditure (CAPEX)
Expenditure used to create new assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of the asset stock.

Condition-Based Preventive Maintenance
Preventive maintenance initiated as a result of knowledge of an items condition from routine or continuous monitoring.

Condition Monitoring
Inspection, assessment, measurement, and interpretation of the resultant data, to indicate the condition of a specific asset or component and determine the need for some preventive or remedial action.

Consequence of Failure
The effects of a failure mode, including impacts on health & safety, reputation, environment, service provided and economy.

Current Assets
Those assets which are expected to be realized in cash or sold or consumed within one year of an organization's balance date.

Critical Assets
Those assets that are likely to result in a more significant financial, environmental and social cost in terms of impact on organizational objectives.

Deferred Maintenance
The shortfall in maintenance work required to maintain the service potential of an asset.

Demand Management

Actions taken to influence demand for services and assets, often undertaken as part of sustainability initiatives and/or to avoid or defer required asset investment. Demand management may be 'SUPPLY-SIDE' demand Management (for example minimizing wastage through pipe leak detection or customer DEMAND-SIDE management, to reduce demand for over-utilized assets or vice versa (for example through pricing, regulation, education and incentives).

Deterioration Rate

The rate at which an asset approaches failure (end of life).

Facilities Audit

The physical audit of a facility, usually required for valuation, life-cycle cost analysis, short-term maintenance planning, and long-term planning purposes.

Facility

A complex comprising many assets (e.g., a hospital, water treatment plant, recreation complex, etc.) that represents a single management unit for financial, operational, maintenance or other purposes.

Failure

The condition in which an asset fails to perform its function. Failures can be total (e.g., a pump fails to pump any water) or partial (e.g., a pump can pump only a portion of the required pumping volume).

Failure Mode

A single event that causes a failure. A single asset may have multiple failure modes.

Gap Analysis

A method of assessing the difference between a business's current (asset management) practices and the future desirable (asset management) practices. Also called "needs analysis".

Geodatabase

It is a database designed to store, query, and manipulate geographic information and spatial data.

Geographic Information System (GIS)

Software that provides a means of spatially viewing, searching, manipulating, and analyzing an electronic database.

Infrastructure Assets

Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service by the continual maintenance, replacement, and refurbishment of its components.

Key Performance Indicator (KPI)

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to safety, responsiveness, cost, asset performance, reliability, efficiency, environmental protection, and customer satisfaction.

KPIs are measures of how well a utility is conducting its duties (inward focus), as opposed to the customers' perspective of the level of service being provided (outward focus).

Level of Service (LOS)

A measure of the effectiveness of a particular activity (e.g., the taste of drinking water as a result of treatment) or service area (e.g., brightness as the result of installed street lighting) as perceived by customers. Service levels usually relate to safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environmental acceptability, cost and availability.

Lifecycle Management

The cycle of activities that an asset or facility goes through while it retains an identity as a particular asset, from planning and design to operations, maintenance, decommissioning and disposal. Investment decisions should be based on understanding the total lifecycle costs and benefits.

Maintenance

All actions necessary for retaining an asset as near as practicable to its original condition and to prevent unplanned downtime, excluding rehabilitation or renewal.

Maintenance Management Plan

Collated information, policies and procedures for the optimum maintenance of an asset, or group of assets (asset class).

Master Plans

Long range plans developed for major asset classes which consider business drivers, demand and supply projections, conservation, and rehabilitation and replacement of existing assets.

Operation

The active process of utilizing an asset which will consume resources such as labour, energy, chemicals and materials.

Optimized Decision-Making (ODM)

Two definitions are:

1. ODM is a formal process to identify and prioritize all potential solutions with consideration of financial viability, social and environmental responsibility and cultural outcomes.
2. An optimization process for considering and prioritizing all options to rectify existing or potential performance failure of assets. The process encompasses NPV analysis and risk assessment.

Optimized Depreciated Replacement Cost (ODRC)

IFRSs require the DRC to be optimized, therefore ODRC is synonymous with DRC.

Operational Expenditure (OPEX)

Ongoing annual cost expenditures for running day-to-day business operations including costs of workers and facility expenses such as supplies, rent and utilities.

Operations Management

The active process of using an asset that consumes resources such as manpower, energy, chemicals, and materials. Operation costs are part of the lifecycle costs of an asset.

Performance Measure

See Key Performance Indicator (KPI).

Performance Monitoring

Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.

Planned Maintenance

Planned maintenance activities fall into two categories:

1. Planned Predictive - condition monitoring activities used to predict failure.
2. Planned Preventive - maintenance that can be initiated without routine or continuous checking (e.g., using information contained in maintenance manuals or manufacturers' recommendations) and isn't condition-based.

Predictive Maintenance (PdM)

Monitoring an asset's condition to predict when it will fail or when maintenance should be performed. This approach offers cost savings over routine or time-based preventive maintenance, because tasks are performed only when warranted.

Preventive Maintenance (PM)

Planned maintenance activities performed at scheduled intervals to prevent equipment failure or deterioration.

Probability of Failure

The likelihood or frequency that an asset will fail to perform its function, typically expressed in terms of failures per year.

Rehabilitation

Work to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally involves repairing the asset to deliver its original level of service (e.g., slip-lining of sewer mains) without resorting to significant upgrading or renewal, using available techniques and standards.

Renewal

Work to upgrade, refurbish, or replace existing assets or facilities with assets or facilities of equivalent capacity or performance capability.

Replacement

The complete replacement of an asset that has reached the end of its life to provide a similar, or agreed alternative, level of service.

Risk

The probability of an event occurring multiplied by the impact(s) of that event.

Risk Management

The application of a formal process to assess organizational risks to determine the resultant ranges of outcomes, their probability of occurrence, and what actions may be cost-effectively taken to reduce the organization's overall risk exposure.

Strategic Plan

A plan containing the long-term goals and strategies of an organization. Strategic plans have a strong external focus, cover major portions of the organization and identify major targets, actions and resource allocations relating to the long-term sustainability, value, and growth of the organization.

Unplanned Maintenance

Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Useful Life

Useful life can be categorized into the following:

1. Design or Engineered Useful Life: Expected lifespan based on design and engineering specifications.
2. Manufacturer Suggested Useful Life: Duration recommended by the manufacturer for optimal performance
3. Actual Useful Life: Real-world lifespan influenced by usage, maintenance and environmental factors.

Work Order

A list of tasks to be completed to maintain an asset or to correct any issues discovered and reported by an employee via a work request. Work orders can be either preventive maintenance or corrective maintenance. Preventive work orders are usually planned (in advance) and help the asset maintain its normal operation; corrective work orders are generated usually as a result of a breakdown.

Work Order Planning and Scheduling

Planning and scheduling are efficiency steps within maintenance work management that includes planning (e.g. identify labor needs, organize tools and order/collect materials) and scheduling (e.g. coordination of work with operations and other maintenance activities).

Executive Summary

The City of Brampton is Canada's 9th largest municipality with an estimated 2023 population of 725,000 and remains one of the largest employment centres in the Greater Toronto Area. With the rapid growth that has taken place over the last number of years, the City has been adding a large number of assets to its already extensive inventory.

The main purpose of this Service Area Asset Management Plan (SA AMP) is to advance the City's asset management practices to allow the City's infrastructure to be managed in a financially sustainable manner while delivering the expected levels of service for its community. This SA AMP aligns with *Ontario Regulation 588/17 (O.Reg. 588/17)* requirements and incorporates best industry practices.

In May 2023, the Province of Ontario introduced Bill 112, the Hazel McCallion Act, with a Transition Board and intent to dissolve the Region of Peel– leaving Brampton, Caledon and Mississauga to operate as single-tier municipalities.

In January 2024, a modified mandate recalibrated the scope of the Transition Board's direction from the dissolution of a local government to the organization and modernization of a regional municipality that is efficient and responsive to the needs of residents and taxpayers. Future iterations of this report will consider the Transition Board's recommendations and aim to include assets acquired from the Region of Peel.

A summary timeline of the requirements of the regulation are outlined in Figure 1. This SA AMP meets and exceeds the requirements as outlined within the Ontario Building Together Guide for Municipal Asset Management Plans, and covers components within both the ISO 55000 Global Asset Management Standard, as well as the International Infrastructure Management Manual (IIMM). This SA AMP includes the proposed levels of service requirements to meet the 2025 deadline for all 10 service areas considered in this AMP.

Figure 1 – Regulatory O.Reg 588/17 Requirements

Strategic Asset Management Policy	**Existing** Level of Service for Core Assets	**Existing** Level of Service for All Assets	**Proposed** Level of Service for All Assets
July 1, 2019	July 1, 2022	July 1, 2024	July 1, 2025

State of the Local Infrastructure

The City's asset portfolio has a total replacement value estimated at $9.0 billion with the assets, on average, in "Good" condition. The valuation is estimated based on an inventory of capital assets as of year-end 2022. The SA AMP primarily focuses on service areas outlined in green. However, Transportation and Stormwater services (outlined in blue) are included only for reporting the State of Local Infrastructure and in the Financing Strategy section for a corporate infrastructure funding analysis. Transportation and Stormwater AMP's were completed in 2022 and are not part of this scope of work.

Figure 2 – Service Areas included in the Service Area Asset Management Plan

Maturity Assessment

As part of this SA AMP, individual maturity assessments were completed for each service area. These assessments involved workshops to gather data on asset information and overall asset management practices within each area.

Radar graphs are provided within each service area appendix to present the current and target maturity, as well as the key activities to reach the target maturity. The overall current maturity score across all service areas (excluding Transportation and Stormwater) is 66, indicating an "Intermediate" maturity level. The City's goal is to move to an "Advanced" stage on average within the next five years.
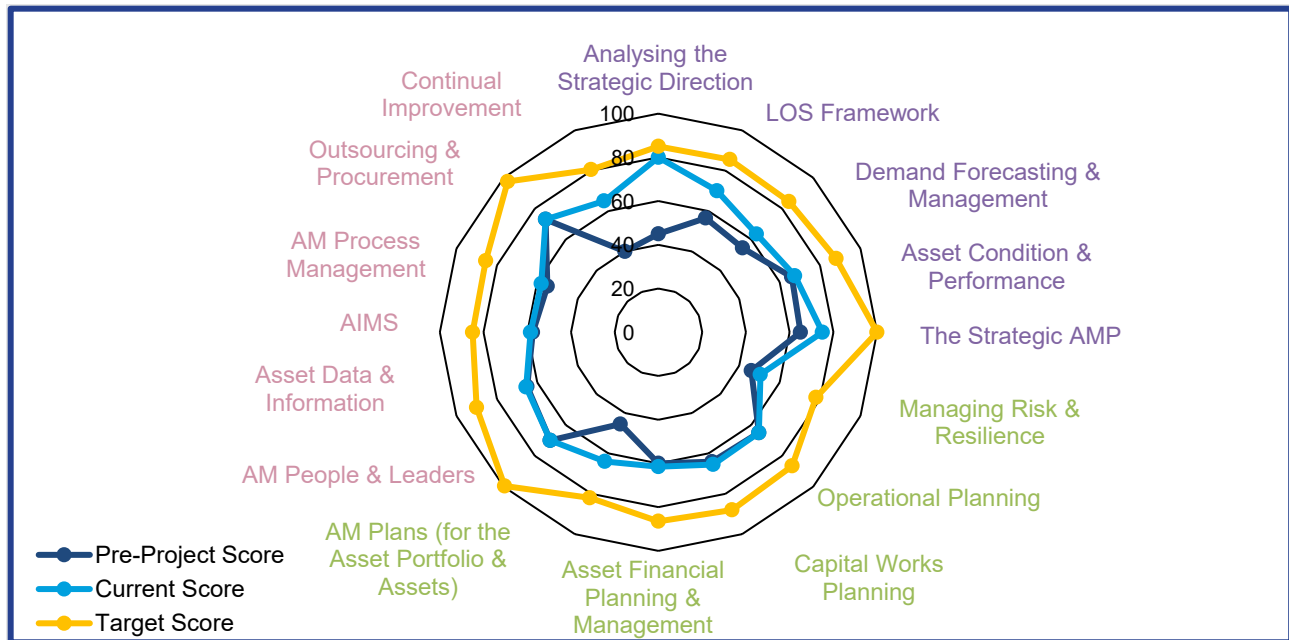
Levels of Service

The City of Brampton is committed to providing the best possible quality of service for its residents and businesses, while ensuring affordability. As the City's asset management program has evolved, it has become increasingly clear that the City will need a more advanced level of understanding of the extent of the services provided to measure both effectiveness and affordability.

To this end, this SA AMP includes detailed Levels of Service tables for each service area, which can be found in Appendix A through Appendix J. These tables establish a link between the current levels of service and proposed or targeted levels of service, as well as the costs associated with achieving these targets.

Demand Management

Demand management within this SA AMP relates to responding to future changes in the City that may impact the demand for municipal services. It is intended to identify the factors that may influence the demand, outline strategies for managing it and estimate associated costs. The demand placed on City services would evolve as the priorities of the community change, technologies emerge and existing services are improved.

This section provides an overview of:

- Demand Drivers and Forecast;
- Impact on Level of Services; and
- Demand Management through Lifecycle Activities.

Risk Management

In total, about $3.4 billion in assets have been assessed in this plan, excluding Transportation and Stormwater which were assessed separately in 2022. Of the $3.4 billion, about $1.3 billion (40%) have been assessed to be in low to insignificant risk. About $1.9 billion (56%) are assessed to be in

moderate risk, making up the majority of the assets. The remaining, $146 million (4%) have been assessed as high-risk. These high risk assets are closely monitored by the City staff and the risk is addressed through the budgeting process before it adversely impacts the community. No assets have been assessed to be in the extreme risk category.

Although the cumulative risk analysis shows that virtually all assets (about 96%) are in moderate risk or lower, the City continues to experience risk challenges. Through the risk analysis and consultation with service area representatives, the largest drivers of risk continue to be associated to capacity constraints, particularly at peak service periods and the condition of assets, especially those in Very Poor condition. These assets will need to be monitored closely as demand for service continues to increase and assets age over time.

Figure 4 – Summary of Risk Assessment by Replacement Value (In Millions)
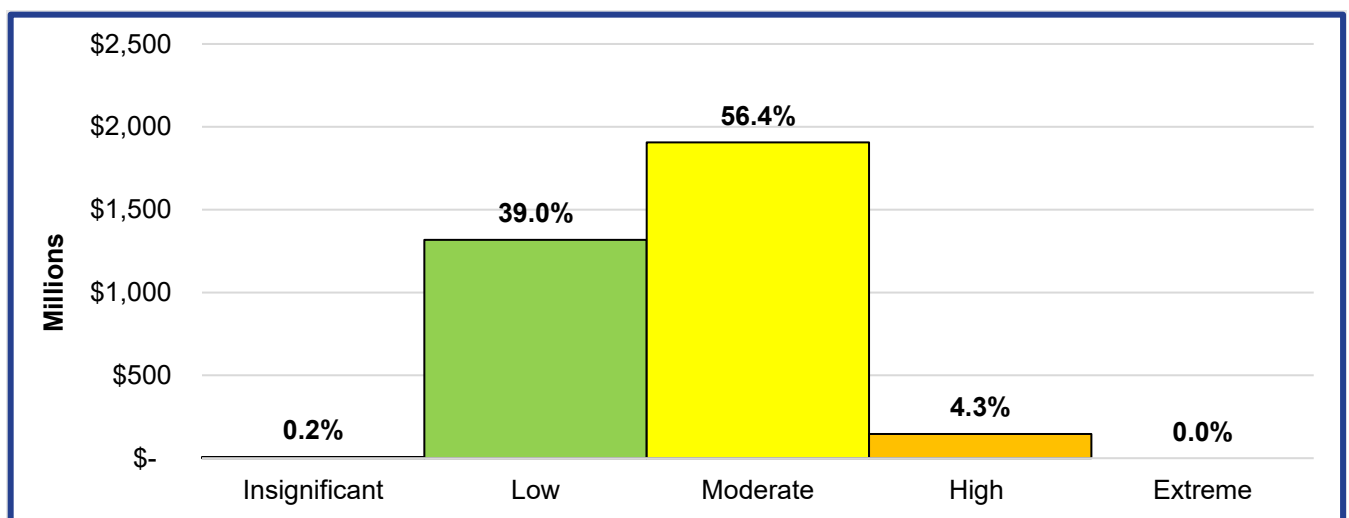
Note: Total replacement value is approximately $3.4 billion. Excludes transportation and stormwater assets.

Lifecycle Management

The City of Brampton manages assets across various service areas using distinct lifecycle strategies, which are currently a mix of formal and informal procedures.

Consistent with the recommendations of the City's Corporate Asset Management Plan (Corporate AMP) and regulatory requirements, the City's asset-related work has been categorized into six lifecycle action categories. These categories represent the actions undertaken throughout the lifecycle of assets to ensure they provide desired levels of service:

- Non-Infrastructure Solutions;
- Operations & Maintenance;
- Renewal & Rehabilitation;
- Replacement;
- Disposal/Removal; and
- Expansion/Upgrade.

Figure 5 below summarizes the lifecycle costs by category to maintain current levels of service for existing assets.

Figure 5 – Average Annual Investment Requirements from 2023 to 2032 for All Services (In Millions)
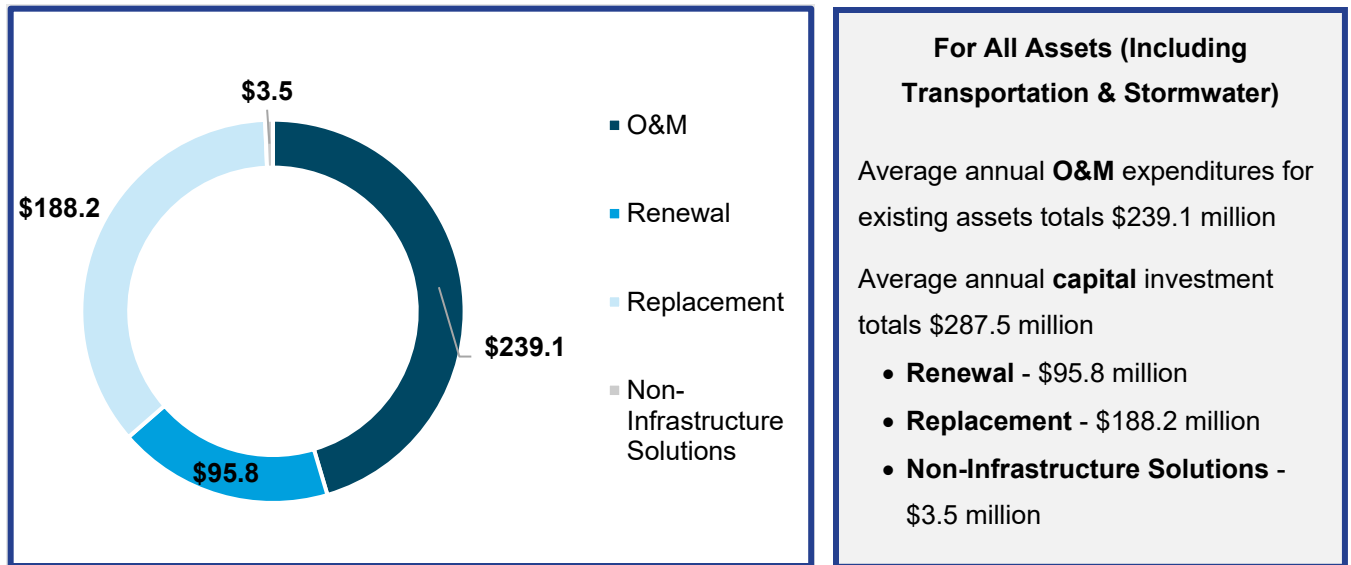
For All Assets (Including Transportation & Stormwater)

Average annual **O&M** expenditures for existing assets totals $239.1 million

Average annual **capital** investment totals $287.5 million

- **Renewal** - $95.8 million
- **Replacement** - $188.2 million
- **Non-Infrastructure Solutions** - $3.5 million

For expansion and asset upgrade requirements to meet proposed levels of service:

- The first round capital expenditures required over the next decade for expansion and asset upgrade activities are estimated at approximately $9 billion. Of this total, the majority is related to new Transit infrastructure (including major projects such as the LRT Extension and BRT along Bovaird/Airport corridor).

- By Year 10, the total average annual asset management related implications will amount to $132.0 million on the operating budget and $105.3 million for capital.

A few important considerations:

- The capital asset repair and replacement expenditures would largely be required beyond the planning period and the City can plan for these activities as development progresses and growth revenues materialize. Notably, the capital impacts generally represent a non-cash expense in this planning period;

- The capital requirements to meet the proposed levels of services are required to meet the growth targets outlined in the Brampton Plan. The Brampton Plan is predicated on a more significant rate of development than observed in recent years. If the growth doesn't occur as planned, these key capital projects would likely be deferred until the growth materializes.

- In order to fund the capital costs identified, at least 80% is anticipated to be funded from upper levels of government and development charges. If the City does not receive any grant funding for those projects, the current levels of service would not be impacted in the short-term.

- If the growth does materialize, the impacts should be considered within the context of the projected growth. Over the next 10 years, the City's population is expected to increase by approximately 148,000. Furthermore, the City will add about 53,000 employees accounting for about 3.7 million square metres of additional non-residential building space. This growth will have the effect of increasing the overall assessment base, leading to additional user fee and charge revenues that can offset the capital asset provisions required to replace the anticipated infrastructure.

Financing Strategy

The financing strategy evaluates the infrastructure gap for existing assets to maintain current levels of service. In this report, the infrastructure gap is calculated as the difference between the total full-lifecycle costs and the projected revenues over the 10-year period.

The analysis identifies a gap of $334 million (i.e. unfunded share) in Figure 6 once the additional revenues generated from new growth are considered into the calculation. These additional revenues are assumed to be prioritized for existing assets, although, the specific allocations will be determined though future budgets as growth occurs.

In this SA AMP, the expansion and asset upgrade infrastructure requirements to meet the City's proposed levels of service are documented independently. The total estimated capital cost of $9.0 billion of expansion and asset upgrade costs represents the required investment to meet the proposed levels of services in the City over the planning period ($896 million per annum). It's important to note that Transportation and Stormwater Services are not included in this proposed levels of service analysis. Separate projects will be initiated to assess the proposed levels of services for these essential services.

Figure 6 – Projected Infrastructure Gap to Maintain Current Levels of Service (10-Year Total)
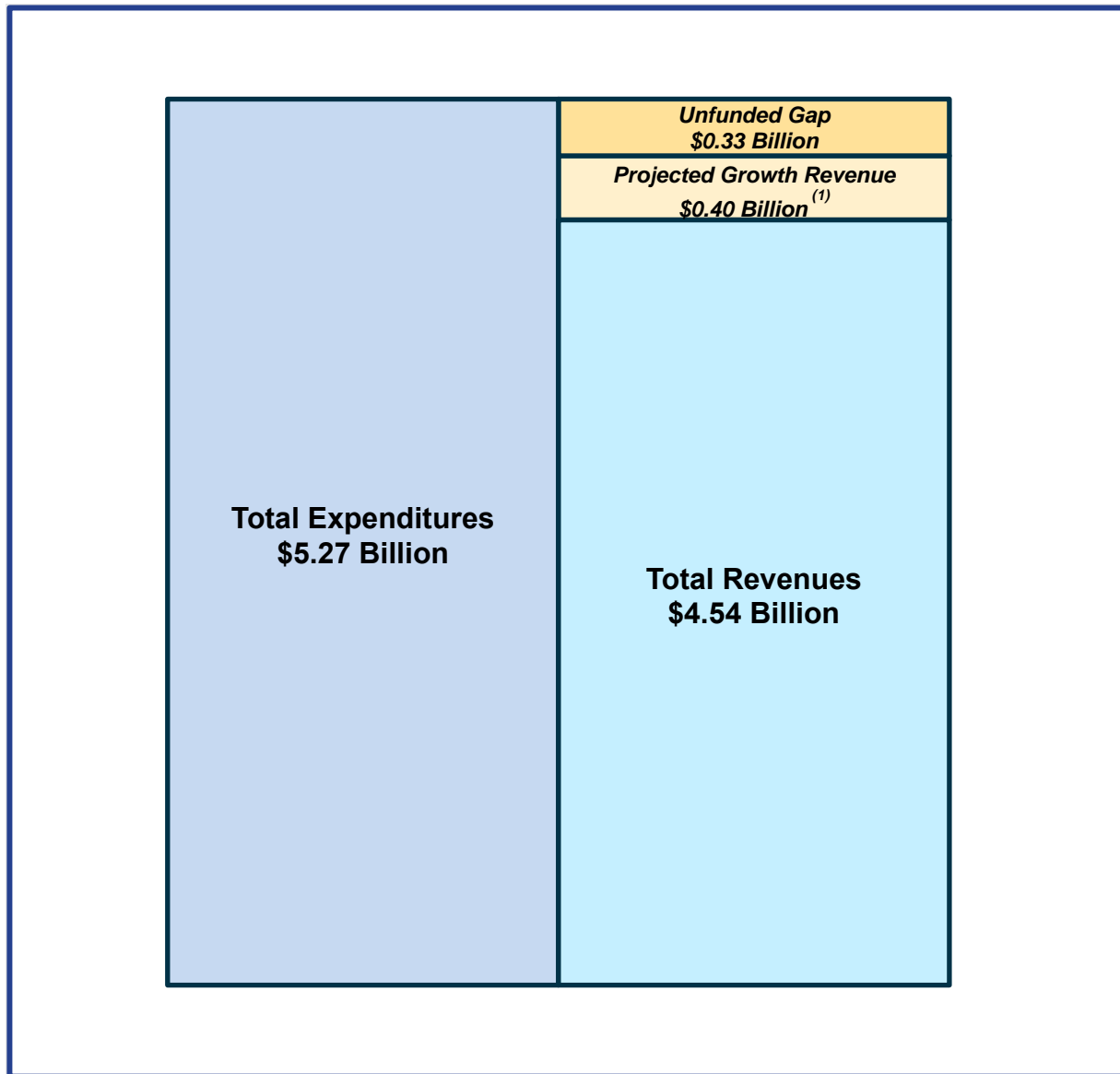
**Total Expenditures
$5.27 Billion**

**Unfunded Gap
$0.33 Billion**

**Projected Growth Revenue
$0.40 Billion** [1]

**Total Revenues
$4.54 Billion**

Note: Values have been rounded
(1) Projected Growth Revenue from assessment growth, increases in Federal Gas Tax allocation with population change, increase in special purpose levies and stormwater fees. Excludes DC revenue to fund first round capital.

Monitoring & Improvement Plan

Continuous improvement is a fundamental aspect of municipal asset management, reflecting the City's ongoing commitment to optimize the performance, efficiency and sustainability of infrastructure assets over time.

This plan builds upon prior efforts that the City has taken to improve the availability, completeness and accuracy of asset data. These improvements have increased the confidence ratings of the data used to develop this plan and facilitate the work required to update asset management reporting in the future. Service area specific improvements are outlined in the service area appendices (Appendix A through Appendix J) and are categorized into the following improvement areas:

- Data Enhancement & Governance;

- Process Optimization; and

- Technology & Tools.

Introduction

Located in the heart of Canada's largest urban region, the City of Brampton is well positioned to continue attracting global business investment and educated, skilled residents from across Canada and around the world. The City of Brampton is Canada's 9th largest municipality with an estimated population of 725,000 and remains one of the largest employment centres in the Greater Toronto Area.

Most of Brampton's growth has occurred in the last two decades, making it one of the Country's fastest-growing urban centres. Its population is expected to increase to about one million residents by 2051[1]. The City is well known for its diversity with more than 250 different cultures and 171 languages represented among its residents.

Brampton's economy is well diversified with a workforce of roughly 210,000, representing a wide range of industry sectors and regional clusters. The main economic sectors include manufacturing, food and beverage, life sciences, and information and communication technology.

With the rapid growth that has taken place over the last number of years, the City has been adding a large number of assets to its already extensive inventory. Presently, the City's asset inventory is estimated to have a replacement cost of $9.0 billion (in 2023 dollars). This includes all City assets irrespective of if they are constructed by the City or contributed by developers as new development occurs. The Service Area Asset Management Plan (SA AMP) is intended to provide Council with information to help with capital investment decisions while adhering to all regulatory requirements.

Municipal services in Brampton are provided by two tiers of government. The Region of Peel is the "Upper Tier" and the City of Brampton is the "Lower Tier". Residents and businesses in Brampton benefit from municipal services provided by both levels of government, however the City and the Region provide and manage different services at each level. From an asset management perspective, municipal services provided by the City and the Region are shown in Figure 7. The City of Brampton services described in Figure 7 are incorporated into the SA AMP but the service area names are modified to generally align to the City's budget structure. Regional services (and assets) are not included in the SA AMP as they are owned and maintained by Peel Region.

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[1] This represents the approved target population outlined in the Region of Peel Official Plan which is also consistent with minimum targets outlined in the City's new Official Plan, "Brampton Plan". This does not account for higher population in 2051, if the City were to achieve the Municipal Housing Pledge targets allocated to the City of Brampton as part of the Provincial Housing Supply Action Plan.

Figure 7 – Municipal Service Delivery

Local Municipal Government
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City of Brampton's responsibilities

- Arts and culture
- By-law enforcement
- Economic development
- Fire services
- Parks and recreation
- Provincial offences administration
- Planning new community developments and enhancing existing neighbourhoods
- Public transit
- Snow removal
- Tax collection
- Local roads

Local Regional Government
Region of Peel working with you

Region of Peel's responsibilities

- Ambulance services
- Housing services
- Police services
- Public health
- Regional roads
- Social services
- Waste collection and recycling
- Water treatment and supply
- Waste water collection and treatment

Note: Service responsibilities between the City and Region are as of January 1, 2024.

In May 2023, the Province of Ontario introduced Bill 112, the *Hazel McCallion Act*, with a Transition Board and intent to dissolve the Region of Peel—leaving Brampton, Caledon, and Mississauga to operate as single-tier municipalities.

In January 2024, a modified mandate recalibrated the scope of the Transition Board's direction from the dissolution of a local government to the organization and modernization of a regional municipality that is efficient and responsive to the needs of residents and taxpayers. The Transition Board will provide recommendations for the proposed transfer of services from the Region of Peel to the City of Brampton, which will necessitate a comprehensive re-evaluation of our asset management strategies and practices to ensure a smooth and effective integration of these new assets into our portfolio. Future iterations of this report will look to include all assets, including assets acquired from the Region of Peel.

The Corporate Strategic Plan charts the City's path forward, focuses efforts, communicates progress, and measures the City's success. This critical document provides structure to prioritize and deliver what is most important to the community. It is a live document that sets the context for the City's budgets, master plans, projects, services, and resources. Council and staff curated a Corporate Strategic Plan that includes community feedback and is grounded by six (6) focus areas with concentrated themes and outcomes (Figure 8). The City is committed to the completion of all strategic priorities within these focus areas and the SA AMP is developed in alignment with the objectives and focus areas of the Corporate Strategic Plan.

Figure 8 – Corporate Strategic Plan Focus Areas

Focus Areas

Government & Leadership
We are focusing on service excellence with equity, innovation, efficiency, effectiveness, accountability, and transparency.

Culture & Diversity
We are focusing on cultural diversity, cross-cultural understanding, and supporting artistic expression and production.

Growing Urban Centres & Neighbourhoods
We are focusing on an economy that thrives with communities that are strong and connected.

Health & Well-Being
We are focusing on citizens' belonging, health, wellness, and safety.

Transit & Connectivity
We are focusing on transportation and a connected infrastructure that is safe, convenient, efficient, and sustainable.

Environmental Resilience & Sustainability
We are focusing on nurturing and protecting our environment for a sustainable future.

Purpose

The main purpose of this SA AMP is to advance the City's asset management practices by developing a set of asset management strategies to the specific needs of each service area. At the same time, these strategies align with the objectives developed through the Corporate AMP and the requirements of *Ontario Regulation 588/17 (O. Reg 588/17)*. This plan focused on achieving on several key objectives form the main purpose of the plan:

- **Ensuring Long-Term Sustainability** – management of the City's assets is a long-term commitment that must be sustainable to ensure effective service delivery for future generations.

- **Lowest Cost of Ownership** – long-term sustainability is only possible by ensuring costs are minimized through efficient management of assets by developing service area specific plans and objectives.

- **Minimizing Risk** – risk is minimized through the assessment, management and long-term planning of assets at more focused levels and through consultation with individual service areas.

- **Enhancing Service Delivery** – the City strives

for continual improvement as outlined in the Corporate Strategic Plan and therefore service area specific plans are a key objective to ensure enhanced delivery of services at a more detailed level.

- **Supporting Informed Decision-Making** – development of a set of asset management tools that help the decision-making process make evidence based decisions. As the SA AMP continues to be implemented, it will support the essential evidence-based strategic plan process, including the City's Long Term Financial Master Plan and budgeting processes, well into the future.

By following the key objectives above, the SA AMP establishes a "clear line of sight" from senior management to the customer and from planners to frontline decision makers. Any investment requirements included in the SA AMP are clearly linked to a well-defined need. These needs are based on either maintaining or enhancing customer-focused levels of service as well as alignment with strategic objectives through capital and operating decisions. This will improve transparency and stakeholder confidence that the right decisions are being made on the right assets at the right time.

Regulatory Context

In 2015, the Province of Ontario established the Infrastructure for Jobs and Prosperity Act. The purpose of this Act is to establish mechanisms to encourage principled, evidence-based and strategic long-term infrastructure planning that supports job creation and training opportunities, economic growth, protection of the environment, and incorporate design excellence into infrastructure planning.

In December 2017, *Ontario Regulation 588/17* Asset Management Planning for Municipal Infrastructure (*O. Reg 588/17*) was passed under the Infrastructure for Jobs and Prosperity Act. The regulation requires municipalities to develop a Strategic Asset Management Policy, which will help municipalities document the relationship between their Asset Management Plan and existing policies and practices as well as provide guidance for future capital investment decisions. The regulation also contains more specific requirements on the type of analysis municipal asset management plans should contain, including policies, levels of service, lifecycle management and financing strategies. The aim is to provide guidance to municipalities so that asset management plans are more consistent across the Province. Furthermore, in March 2021 the Province amended the regulation to extend the regulatory timelines by one year. A summary timeline of the requirements of the regulation are outlined in Figure 9.

Figure 9 – Regulatory O.Reg 588/17 Requirements
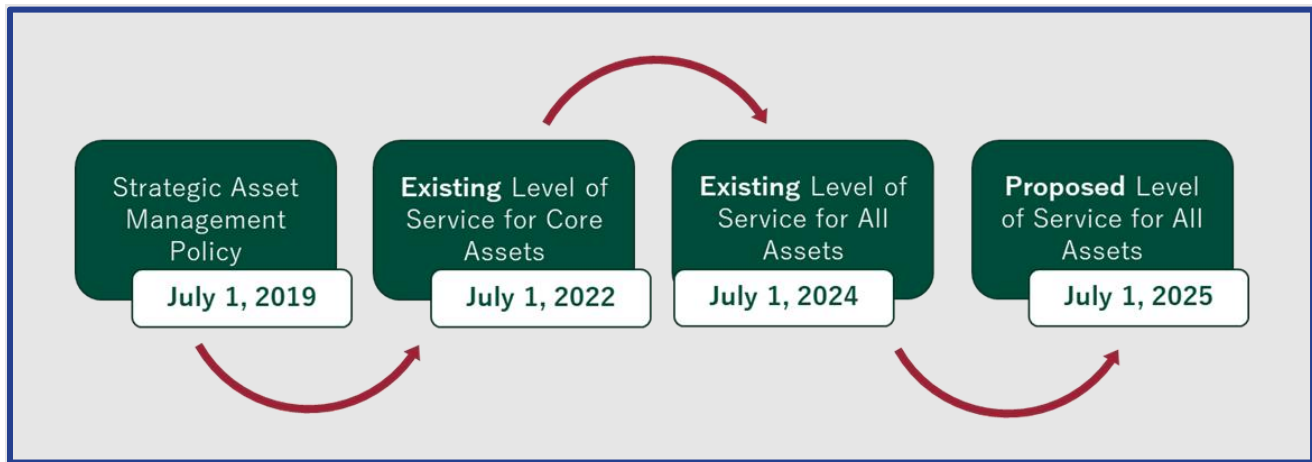
A high-level summary of the technical requirements to be addressed for July 1, 2024 include[2]:

- For each asset category, the current levels of service being provided, determined in accordance with qualitative descriptions and technical metrics, based on data within the past two calendar years;

- A summary of the City's assets including replacement costs, average age, conditions and the approach to condition assessments;

- Identification of the lifecycle activities needed to maintain the current levels of service for a minimum period of 10-years and the costs associated to those activities; and

- The estimated capital expenditures and

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[2] There are additional requirements of the regulation not explicitly stated here, however this SA AMP meets all requirements needed. Only the most relevant reporting requirements are listed for simplicity. See https://www.ontario.ca/laws/regulation/r17588#BK7

significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets.

The SA AMP meets and exceeds the requirements as outlined within the regulation, and covers components within both the ISO 55000 Global Asset Management Standard, as well as the International Infrastructure Management Manual (IIMM). Guidance from the Corporate AMP helped in preparing this SA AMP in a consistent manner and, in doing so, meet the stated requirements of *O. Reg 588/17*. The SA AMP also puts the City in an excellent position for future planning, as it includes the proposed levels of service requirement to meet the 2025 deadline for all 10 service areas considered in this AMP.

The City's asset management journey that has led to the development of the SA AMP has been extensive and has benefited from the collective efforts from staff across all service areas. Figure 10 below

outlines the development of the City's asset management plans and related documents over the past several years.

In 2021, the City developed its Corporate AMP to serve as an update to the City's initial 2016 AMP. The 2021 Corporate AMP serves as the overarching asset management strategic planning document that guides asset management practices across the City. It was informed and guided based on the City's Strategic Asset Management Policy developed in 2019. The development of departmental asset management plans, namely the Transportation AMP and Stormwater AMP, further focused the analysis and practices at a service area level. This SA AMP serves as the next step in this journey, by developing specific analysis and objectives for all remaining ten service areas. The framework for the development of each asset management plan has helped develop the State of Local Infrastructure Reports that are provided to Council annually since the first iteration in 2018. This SA AMP will continue to serve as a living document and is expected to evolve over time alongside the Corporate, Transportation and Stormwater AMPs.

Figure 10 – The City's Asset Management Journey
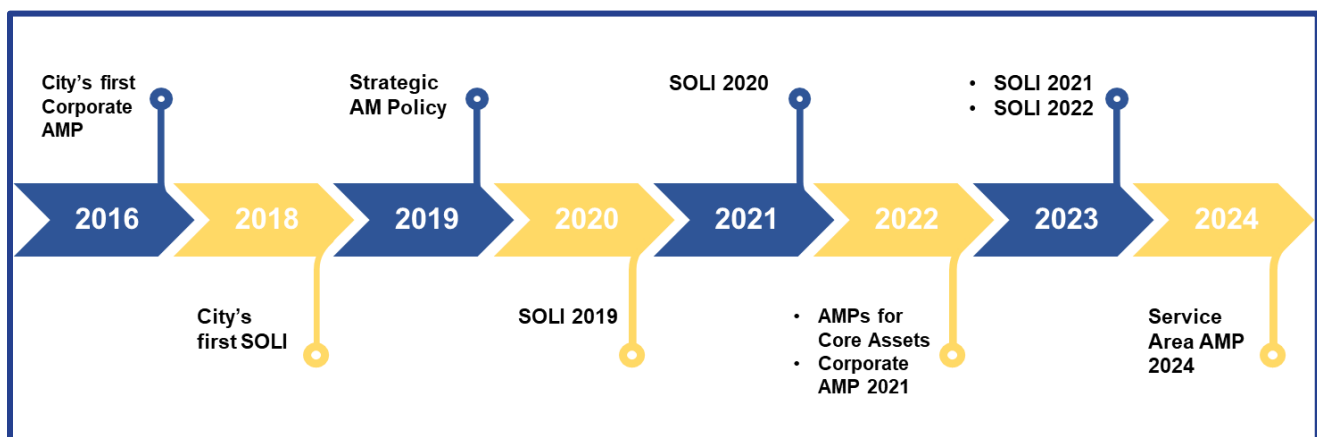
Scope

This document accounts for the City's key services, recognizing that many service areas are reliant on other corporate functions to provide services. The individual service areas operate at a far greater level of detail than the corporate level but are the link to implement the broader corporate asset strategy. This approach is consistent with the City's Corporate AMP and State of Local Infrastructure Reports. For example, Information Technology is a critical corporate-wide function that provides IT service needs to all.

The SA AMP does not cover all assets which were included as major areas in the Ministry of Infrastructure's 'Guide for Municipal Asset Management Plans'. Social housing, water and wastewater services are under the jurisdiction of the Regional Municipality of Peel and are therefore excluded. The SA AMP also excludes indirect services administered by other corporations and municipalities (i.e. City of Mississauga, Hydro etc.). Land has also been excluded since it does not typically require "replacement." Land values however, will continue to be included as part of Financial Information Return submissions.

The City's asset portfolio has a total replacement value estimated at $9.0 billion with the assets, on average, in "Good" condition. The valuation is estimated based on an inventory of capital assets as of year-end 2022. The SA AMP primarily focuses on service areas outlined in green in Figure 11. However, Transportation and Stormwater services (outlined in blue) are included only for reporting the State of Local Infrastructure and in the Financing Strategy section for a corporate infrastructure funding analysis. Transportation and Stormwater AMP's were completed in 2022 and are not part of this scope of work.

Figure 11 – Service Areas included in the Service Area Asset Management Plan

Note: Service areas in the green box are the focus of the SA AMP, however transportation and stormwater in the blue box, are included to provide more complete context. Section 2 includes information on the inventory and replacement value.

Following guidance of the Corporate AMP, the service delivery framework for the City includes a hierarchy of corporate, legislated, customer and technical levels of service, as shown in Figure 12. This framework establishes

the line of sight between the City's strategic objectives and activities undertaken by service area to deliver customer levels of service. It creates a logical and transparent tool to support and inform the resourcing (financial and other) to deliver the asset lifecycle activities. Asset lifecycle activities are undertaken to close gaps between current performance and target service standards throughout the hierarchy of technical, customer, legislated and corporate levels of service.

Figure 12 –Asset Management Line of Sight
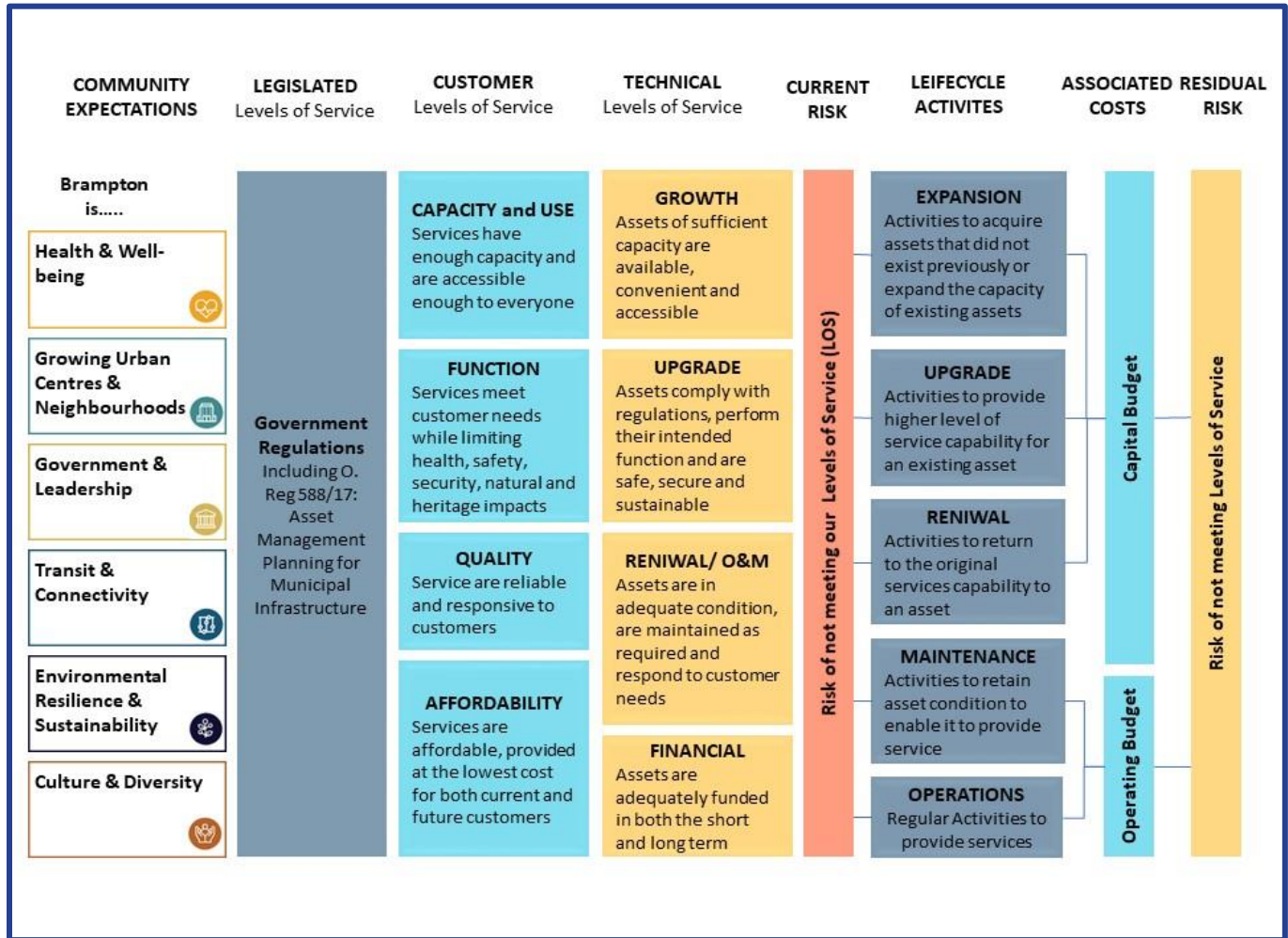
Asset Management Maturity Assessment

Asset management data quality and accuracy varies across all service areas. The 2021 Corporate AMP provided an assessment of asset management maturity on a City-wide level. As part of this Service Area AMP, individual maturity assessments were completed for each service area. Various workshops were conducted to gather information on the current state of asset data and overall asset management planning practices within the respective service areas considered under this plan.

The purpose of an asset management maturity assessment is to identify a service area's current maturity, as well as establish a target maturity that can be reasonably achieved in the near future.

Using the International Infrastructure Management Manual (IIMM) tool, information on asset maturity was collected under three categories:

1. Understanding and Defining the Requirements
2. Development of Asset Management Lifecycle Strategies
3. Asset Management Enablers

AM Maturity Elements

The three AM maturity categories are broken down into 16 elements that are assessed in the individual Asset Maturity Radar Graphs included within each individual service area appendix. The majority of the elements are considered on a service area basis, however, a number apply on a corporate-wide level and are scored as such. The elements reviewed for each service area are outlined in Table 1. The criteria by which each individual element was rated is provided in Appendix K.

Table 1 – AM Maturity Assessment Elements

Category	AM Element
Understanding and Defining the Requirements	Analysing the Strategic Initiatives (AM Policy and Objectives)
	Levels of Service Framework
	Demand Forecasting and Management
	Asset Condition and Performance
	The Strategic Asset Management Plan
Developing Asset Management Lifecycle Strategies	Managing Risk and Resilience
	Operational Planning
	Capital Works Planning
	Asset Financial Planning and Management
	AM Plans (for the Asset Portfolio Assets)
	AM People and Leaders
	Asset Data and Information

Category	AM Element
Asset Management Enablers	Asset Information Management Systems (AIMS)
	AM Process Management
	Outsourcing and Procurement
	Continual Improvement

Maturity Assessment Scoring

Each element was discussed with service area representatives and assigned a score based on criteria outlined in Appendix K. The following scale has been used to determine a score between 0 and 100 for each element.

Table 2 – Maturity Assessment Scoring Scale

Maturity Level	Score
Aware	0-20
Basic	21-40
Core	41-60
Intermediate	61-80
Advanced	81-100

Three separate scores have been assigned for each element:

- **Pre-Project Score** - Through workshops with service area representatives, an assessment of current maturity at the start of the SA AMP process was determined based on the outlined criteria. This score does not capture advancements made as part of the SA AMP.

- **Current Score** - Several activities undertaken as part of the SA AMP have further elevated the maturity of some elements. An updated score that captures these advancements is provided.

- **Target Score –** Target scores are generally set at 40 points (two maturity levels) above the current score to be achieved in the next 5 years. Further adjustments were made to account for the reasonability of meeting these

scores based on strategies required to meet the target.

Activities Achieved through Service Area AMP

The Current Score accounts for all advancements in individual maturity as part of this Service Area AMP. Overall, the following were achieved:

- Comprehensive understanding of levels of service;

- Substantial enhancement in understanding the City's asset management practices and alignment with strategic direction, policies and regulatory requirements;

- Application of a standard Risk Framework for individual service areas to identify critical assets;

- Details on core content including asset information, levels of service, demand and lifecycle strategies linking to financial forecasts with key assumptions stated; and

- Input from relevant teams and stakeholders incorporated into results and ensures support for asset management strategies outlined.

Summary of Results

Individual radar graphs are provided within each service area appendix present the current (both pre and post SA AMP) and target maturity for each. Looking at the results in aggregate across all service areas (excluding Transportation and Stormwater, which have their own maturity assessments within their individual AMPs), the overall current maturity score is 66, or at an "Intermediate" maturity level, as shown in Figure 13 and Figure 14 below. The target score across all service areas is to achieve an "Advanced" stage on average in the next 5 years. It is recognized that the organization will seldom have perfect processes and data with which to manage the asset portfolio. The underlying concept of continuous improvement and reliability is key, and the basis in setting out target scores to strive for in the near future. The individual appendices outline the methodology in determining the current and target score, as well as the key activities to reach target maturity in the future.

Figure 13 – Overall Asset Management Maturity Score by Category (Across all Service Areas)
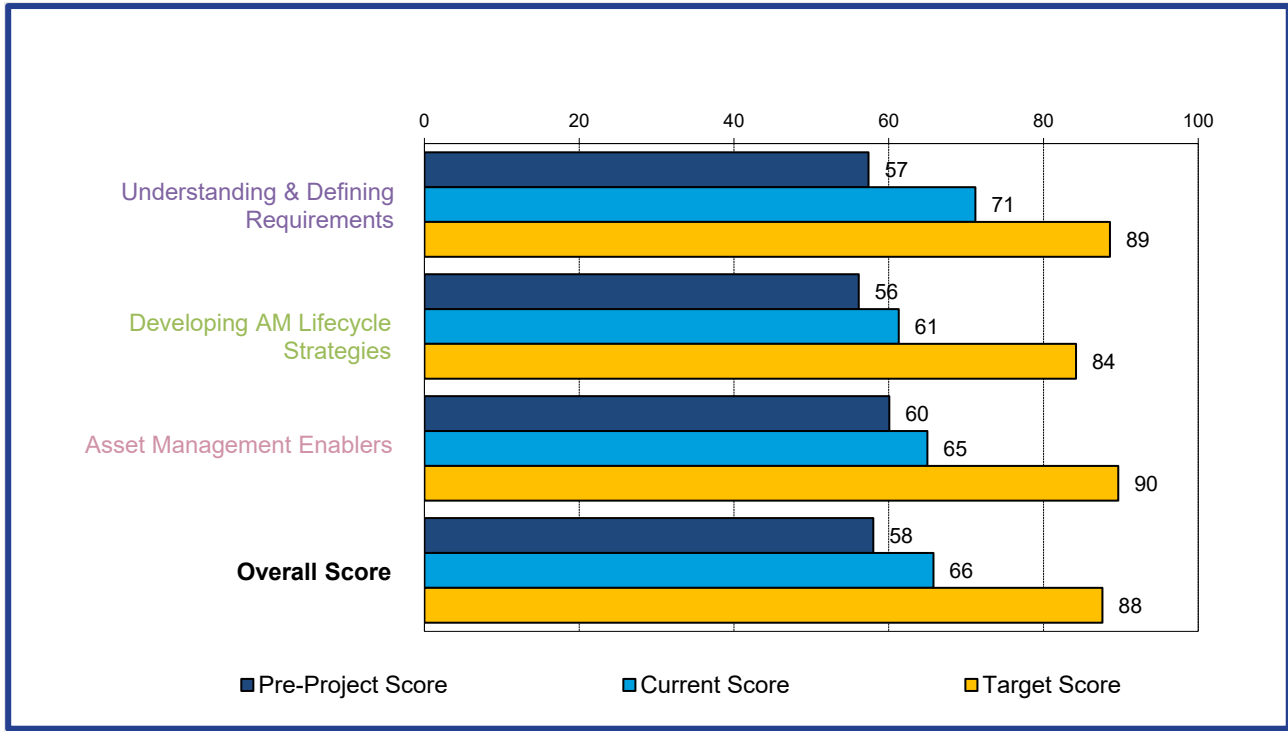
Figure 14 – Asset Management Maturity Radar Graph by Element (Across all Service Areas)
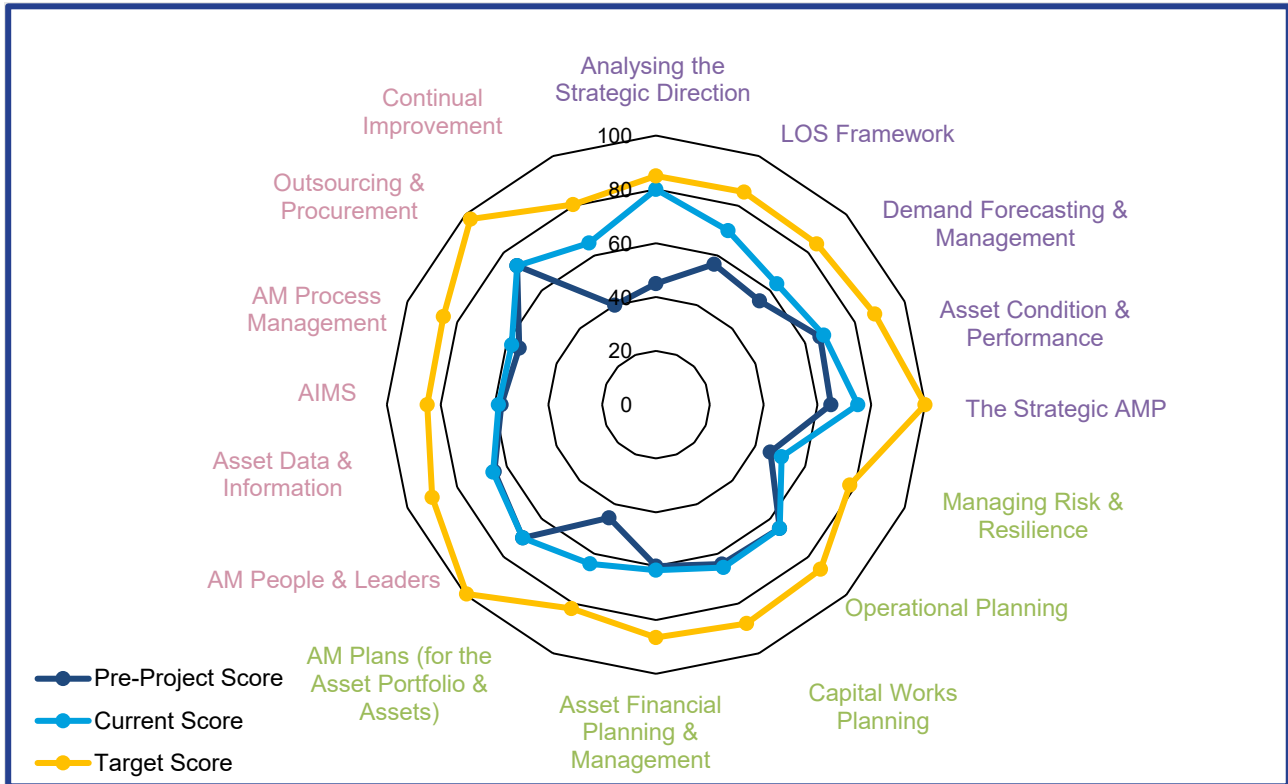
Plan Structure

The SA AMP is structured into six major sections with appendices for each service area. The report structure, including the content included in the service area appendices, is outlined in Table 3.

Table 3 - Service Area AMP Report Structure

Item	Section Heading	Description
Main Body		
1.0	Introduction	An introduction to the SA AMP.
2.0	State of the Local Infrastructure	Overall State of the Local Infrastructure for all service areas (based on 2022 SOLI).[3] This section meets the requirements for reporting on the current asset base in O. Reg 588/17.
3.0	Levels of Service	Documented standard Levels of Service (LOS) including links between the Technical LOS, Customer LOS and Corporate LOS current performance. Using the current performance, the proposed levels of services were identified for each of the 10 service areas. This section meets the requirements for reporting on current and proposed levels of service in O. Reg 588/17.
4.0	Asset Management Strategy	Development of an Asset Management Strategy at a more detailed service area level which includes several functional components. This section meets the requirements for developing asset management strategies, particularly risk, climate change integration and lifecycle management to maintain current levels of service as per O. Reg 588/17.
4.1	*Demand Management*	The identification of the factors that may influence the demand for, and level of service from, the City's asset portfolio.
4.2	*Risk Management*	Development of a Risk Assessment based on the Risk Management Strategy (RMS) developed through the Corporate AMP applied at a detailed service area level.
4.3	*Climate Change*	A framework to integrate climate change into asset management.
4.4	*Governance*	A review of asset management governance and its structure at the service area level.
4.5	*Asset Information*	A strategy to manage the City's asset data and related processes.
4.6	*Communication*	Strategies and process to enable effective communication of asset management objectives and plans to facilitate co-ordination across service areas.
4.7	*Lifecycle Management*	A Lifecycle Management Strategy to determine the activities required to meet levels of service expectations
5.0	Financing Strategy	Examination of current evidence-based asset needs and a comparison to revenue projections to identify the infrastructure gap for the City. This section meets the requirements for developing a financial plan to maintain current levels of service as per O. Reg 588/17.
6.0	Monitoring & Improvement Plan	A discussion on how to monitor asset management plan progress and next steps in improvements. This section enforces the City's commitment to continuous improvement as outline in the City's Strategic Asset Management Policy.
Service Area Specific Appendices (A through J)		
1	Maturity Assessment	An assessment of the City's asset management maturity levels.
2	SOLI Report Card	Detailed reports on the state of local infrastructure by service area including the asset portfolio, replacement values, age and condition.
3	Levels of Service	Detailed reporting on levels of service performance measures by service area.

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[3] The 2022 State of the Local Infrastructure Report was approved by City Council in November 2023. The data and infrastructure included in this SOLI Report forms the foundation for this Service Area AMP.

Item	Section Heading	Description
4	Demand Management	The City's strategies and objectives to address future demand from residents and businesses.
5	Risk Management	Detailed reporting on the risk level of assets by service area.
6	Asset Information Management	Results of the lifecycle management strategy and assessment at a service area level.
7	Lifecycle Management	An assessment of the City's asset management maturity levels.
8	Monitoring & Improvement Plan	Service-area specific items for further monitoring and improvement of overall asset management practices
General Appendix (Appendix K)		
1	Maturity Criteria	Asset management maturity framework for detailed assessment of the level of progress made in meeting the City's asset management objectives.
2	Governance	Asset hierarchy for the City of Brampton and individual service areas.
3	Financing Strategy	Additional details related to the lifecycle cost and financing strategy.

State of the Local Infrastructure

This section of the report seeks to establish an understanding of the current state of Brampton's estimated $9.0 billion ($2023) in infrastructure assets, as outlined in the City's 2022 State of the Local Infrastructure Report. The basis of the estimated valuation is an inventory of capital assets as of year-end 2022. This baseline snapshot of Brampton's assets will help decision-makers prioritize investments in the future; improving their ability to efficiently manage assets and deliver services.

The State of Local Infrastructure (SOLI) is a key building block for Brampton's future management of its infrastructure assets. This section intends to provide the following information:

- Details of the Asset Inventory – What do we own?

- Valuation of the Asset Base (Replacement Value) – What is it worth?

- Condition of the Asset Base – What condition is it in?

This analysis lays the foundation for ongoing assessment, reporting, benchmarking of the City's infrastructure assets while also publicly communicating the current state of assets. In this iteration of the report, the focus was on the "major service areas", described generally, as the infrastructure owned and directly managed by the City. However, this report does include assets managed by Brampton Library, which is a governing board with the authority to make policy and govern the Library's affairs under the authority of the Public Libraries Act.

Since the 2021 Corporate AMP, the City has made significant improvements to the datasets, key inputs, assumptions, and reporting views. Please note that

updates to the replacement values will continue in future years with recent data that reflects the cost pressures experienced by the City. Although this SA AMP is mostly focused on ten of the twelve City service areas (excluding Transportation and Stormwater), this section of the report captures all of the City's assets and remains consistent with the 2022 SOLI Report adopted by Council in the fall of 2023. The 2022 State of the Local Infrastructure Report provides further details on the City's infrastructure assets included in this report.

Age Profile Analysis

The age profile of assets is a critical aspect of any comprehensive Asset Management Plan and is required to meet regulatory requirements. The 2022 SOLI Report contains an age profile analysis to further facilitate the understanding of the age distribution of assets. The full details on the profile of assets are included in the individual service area report cards in Appendix A through Appendix J.

The report cards provide a summary of the average age (weighted based on replacement value) of the assets within each service area portfolio (under the responsibility view). The result shows that the average age of the City's infrastructure is relatively young, with much of the hard service infrastructure coming online within the last 30 years.

Replacement Cost Valuation

The 2022 SOLI Report evaluated the replacement cost data provided at the service area level to make necessary inflationary adjustments to the costs reported. In most cases, the service areas had provided recent cost estimates that correspond with the assets in service as of year-end 2022. However, in some instances, more recent asset valuation data

was not available. In such cases, the values included in the 2021 SOLI were adjusted using a suitable inflation index to bring them in line with current values. Depending on the asset type, the Statistics Canada Non-Residential Building Construction Price Index or Machinery and Equipment Price Index was applied. The 2022 SOLI Report provides a full overview of the inflationary factors applied to the specific asset categories within each service area, which are further identified in Table 4 below. The indices applied are also identified in the service area specific SOLI teport cards provided in Appendix A through Appendix J. Approximately 73% of replacement value data for all City assets were based on recent 2022 costing information. This primarily includes Transportation and Facilities assets, which represent a large share of the total asset portfolio.

Table 4 - Summary of Inflationary Factors Applied to Specific Assets

Index	Inflationary Factor (Q1 2022 – Q1 2023)	Assets Adjusted
Recent Cost Data provided by the service area in $2022 [1]	2.0%	**Transportation:** Roads, Bridges & Culverts, Gateway Features, Noisewalls, Retaining Walls, Fences, Guiderails, Handrails, Steps, Sidewalks, Walkways, Multi-Use Paths, Street Lighting, Traffic Signals, Traffic Signs **Stormwater:** Water Quality Units **Facilities:** All Facilities **Transit:** Heavy Duty Vehicles (Buses), Electric Chargers, Conventional Shelters, Communication Control, Signage **IT:** Audio Visual Equipment **Parks:** Parking lots, Playgrounds, Pathways, Trees
Non-Residential Building Construction Price Index (NRCPI)	12.3%	**Stormwater:** Stormwater Management Ponds, FDC-WTC, Storm Sewers, Catchbasins, Manholes, FDC-WTC Manholes **Parks:** Parks (Open Space), Shade Structures, Splash Pads & Outdoor Pools, Skate Parks, Sports Facilities **Recreation:** Spray Pads & Pools, Tennis Courts, Skateboard Parks, Artificial Rinks & Tracks

Index	Inflationary Factor (Q1 2022 – Q1 2023)	Assets Adjusted
Machinery & Equipment Price Index (M&E)	11.4%	**Transit:** Fleet Support, Zum Shelters, Bike Shelters, Stops and Pads, Sandalwood Transit Loop, Video Walls, Smart Bus Systems, True Credential Identification Card Application Software, Bus Lifts, Fare Systems, PRESTO, Maintenance/Admin Small Equipment, Fueling **IT:** Computers, Monitors, Mobile Phones, Servers, Storage and Back-up, Wireless, Network Infrastructure, Cable Plants, Communication System, Software **City Support Fleet:** Licensed Fleet, Off-Road Vehicles, Fleet Equipment **Fire:** Front Line Licensed Vehicles & Apparatus, Support Vehicles & Equipment, Spare Vehicles, SCBA, Bunker Gear **Parks:** Small Engine Equipment, Park Furnishing, Fitness Equipment, Flower Beds **Recreation:** General & Major Equipment, Indoor & Outdoor Fitness Equipment, Furniture **Cultural Services:** Outdoor & Specialty Equipment, Furniture, Public Art **Library:** Equipment, Media, Software **Animal Services:** Equipment

The total replacement value of all assets covered under this report is illustrated by service in Figure 15 below. Transportation, Facilities, and Stormwater, collectively account for over 80% of the asset portfolio by replacement value. Transportation services, with a replacement value of $3.9 billion, constitute the largest portion at 43% of the total $9.0 billion. Facilities represent 19% of the portfolio, equivalent to $1.7 billion, and serve multiple service areas, including Animal Services, Cultural Services, Recreation, Parks, Transit, Library, Fire, and other corporate services. Recreation Facilities represents the majority within the Facilities category. Stormwater, valued at $1.7 billion, constitutes 18% of the total replacement value. The replacement value reported in the below figure is represented under the "Responsibility View" framework.

Figure 15 – Total Asset Replacement Value of $9.0 Billion (In Millions – $2023)

Recreation, $59 , 1%

Fleet , $56 , 1%

IT, $162 , 2%

Parks, $691 , 8%

Transit , $618 , 7%

Stormwater, $1,672 , 18%

Facilities, $1,742 , 19%

Fire, $63 , 1%

Other, $42 , <1%

Transportation, $3,882 , 43%
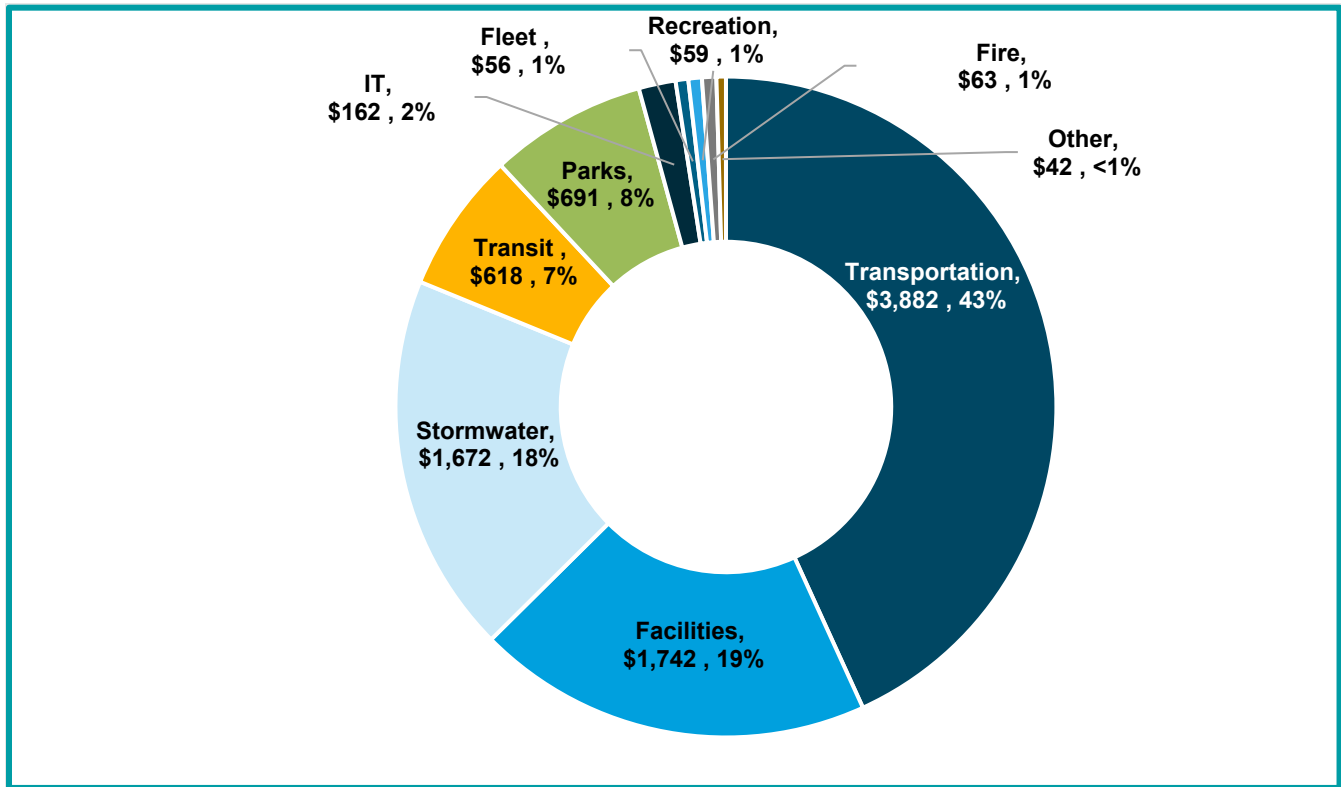
Note: "Other" includes Library, Cultural Services and Animal Services

The SOLI report cards provided in the service area appendices (Appendix A through Appendix J) provide a more detailed breakdown of asset valuations at the sub-asset level and the inventories of assets (as of year-end 2022).

Asset Condition

Consistent with the Canadian National Infrastructure

Report Card as well as other major organizations and institutions reporting formats, a five-point rating scale, as shown in Table 5, was used to assign a condition to all assets. The City aims to continuously improve its assets condition assessment protocols to bring them in line with industry best practices to better reflect reliability and adequacy of the assets to provide service.

Table 5 – Five Point Infrastructure Rating Scale

Rank	Condition	Definition
1	Very Good	The infrastructure in the system is in generally good condition, typically new or recently rehabilitated. A few elements show signs of deterioration that require attention.
2	Good	The infrastructure in the system is in good condition; some elements show signs of deterioration that require attention. A few elements show sign of significant deficiencies
3	Fair	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.
4	Poor	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.
5	Very Poor	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.

The following approaches were used to assess asset condition:

- **Facility Condition Index (FCI)** - The FCI is a standard facility management benchmark that objectively assesses the current condition of a building asset. The 2022 SOLI continued the use of the Facility Condition Index (FCI) calculation as the primary method to determine the overall condition of each facility. The facilities Condition grade (Very Good to Very Poor ratings) goes hand-in-hand with FCI and is an industry standard way of evaluating asset condition in a way that is understandable to the public and Council. Building Condition Assessment (BCA) data determined the overall condition of facility assets. Table 6 below indicates the Facilities Condition Grading System used in this SOLI Report.

Table 6 – Facilities General Condition Grading System

Grade	Description	Condition Criteria	FCI Rating
1	Very Good	Only normal maintenance required	0% - 2%
2	Good	Minor Defects only - Minor maintenance required	2% - 5%
3	Fair	Maintenance required to return to accepted Level of Service - Significant maintenance required	5% - 10%
4	Poor	Requires Renewal - Significant renewal/upgrade required	10% - 30%
5	Very Poor	Significant asset component replacement required	Over 30%

- **Pavement Condition Index (PCI)** – The PCI is an industry standard benchmark used to indicate

the general condition of pavement. The method to calculate the PCI is based on a technical inspection of the number and types of distresses in a pavement. Pavement distress includes low ride quality, cracking, bleeding, bumps and sags, depressions, potholes, etc. The result of the analysis is a numerical value between 0 and 10, with 10 representing the best possible condition and 0 representing the worst possible condition.

- **Bridge Condition Index (BCI)** – The BCI is a commonly used benchmark that rates the condition of a bridge by evaluating and rating its sub-components, such as foundations, piers, deck structure, sidewalks/curbs/median, abutments or sidewalls, railings, etc. Each element of the bridge is rated from 1 (the element is on the verge of failure) to 100 (condition as new). An overall measure for the bridge is based on the rating of its elements. All bridges with a span greater than 3 Metres are inspected every two years as per the Provincial mandate.

- **Age and Expected Useful Life** – When no formal condition assessment was available, the Age of the asset and its Expected Useful Life

(EUL) were used to estimate the current condition. The EUL is the average amount of time in years that an asset is estimated to function when installed new and assuming routine maintenance is practiced.

- For most assets, the general deterioration curve presented in Table 7 has been applied to derive the condition from the remaining assets useful life and vice versa. However, for some other asset types, such as storm sewers and fleet, a more refined asset class specific deterioration curve was applied. The estimated engineered useful life of an asset is the period of time the asset is expected to provide service. The use of an asset ultimately influences the life of the infrastructure and its ability to provide service.

- Unlike other assets, trees are unique as they appreciate over time. Their replacement cost considers that mature trees cannot be directly replaced with other mature trees; instead, smaller trees must be planted to grow to maturity. The deterioration curve methodology outlined in Table 7 does not apply to trees.

Table 7 – Overall Condition Grading Standard Framework for the City

Grade	Condition	Percentage of Remaining Useful Life
1	Very Good	80-100
2	Good	60-80
3	Fair	40-60
4	Poor	20-40
5	Very Poor	0-20

- **Expert Opinion –** Where formal condition assessment, reliable age data, or the results of the Age & EUL analysis failed to represent actual condition observed by Staff, expert opinion of the City of Brampton service area experts were used to estimate asset condition. For example, all software incorporated into the SOLI report is considered to be in Very Good condition despite the age of the asset. The data would say some software is in poor or Very Poor condition, relative to the year it may have been acquired, while the expert knows the asset is overall in good condition. The opinion of the expert would override age and useful life in this circumstance. The expert opinion condition was evaluated by comparing Staff experience to the definition as noted above.

Based on the inputs described above, Figure 16 provides a snapshot of the overall condition of municipal infrastructure in the City of Brampton. In general, the assets considered in this report are assessed in "Good" condition with roughly 5% of the asset base measuring "Very Poor" to "Poor", indicating some assets in these categories may require more immediate renewal/replacement considerations. The overall "Good" condition rating can largely be attributed to the City's infrastructure being relatively new in age combined with the sound asset management practices the City has employed to date.

The conditions illustrated in the figure below represent the cumulative value of assets categorized in the five condition areas. As Transportation, Facilities, and Stormwater Infrastructure represent about 81% of the City's total replacement value, the condition of these specific assets has a greater influence on the overall condition rating identified. Another key consideration is the number of assets classified as being in "Very Poor" condition. Based on the current data presented, these assets make up around 1% of the total.

Figure 16 – Summary of Brampton's Asset by Condition (In Millions)
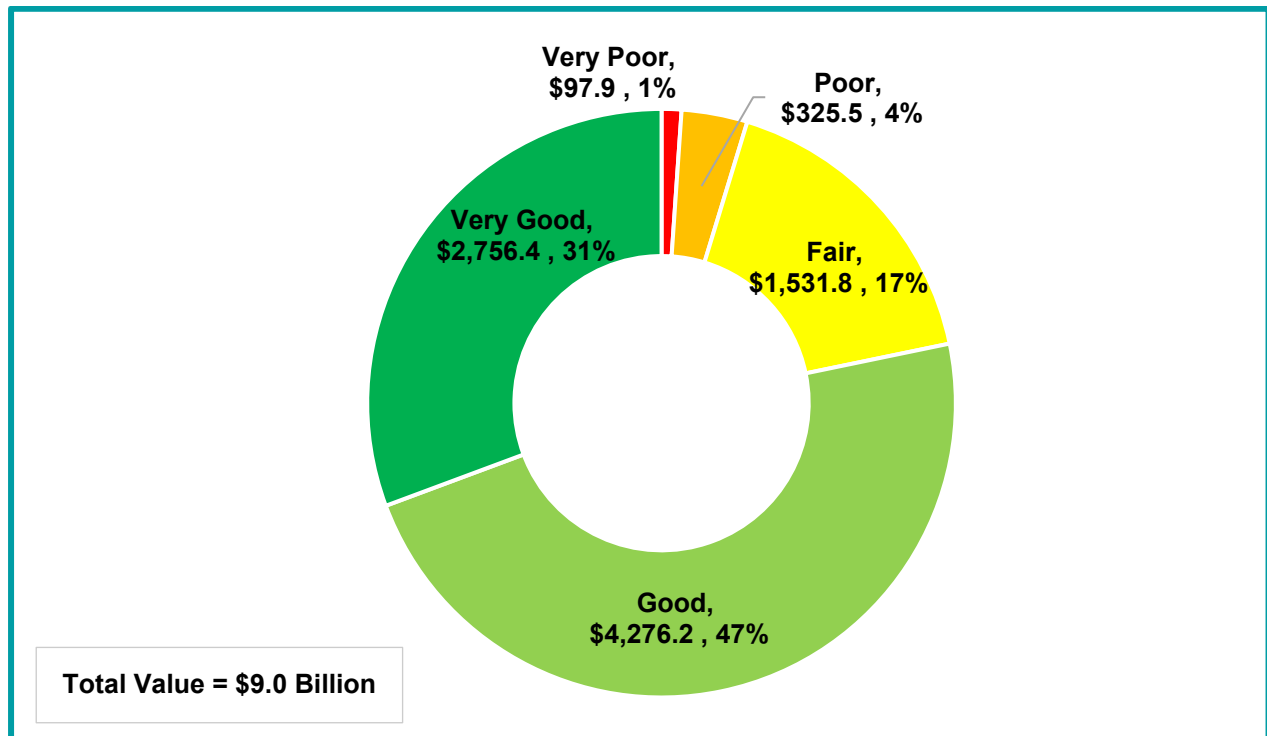
The available replacement value and condition assessment information specific to the service areas is presented in individual report cards. Each report card presents a comparison of the capital asset inventory and replacement values from the 2021 SOLI Report with the results of the 2022 SOLI Report. Please note, for comparison purposes, the valuations illustrated from the 2021 SOLI Report remain in $2022 while the 2022 SOLI report figures are represented in constant $2023. Figure 17 below provides a more detailed review of the condition assessment by service area. A few notes for consideration:

- The service areas identified below are shown within the responsibility view framework. This means that all assets related to Facilities, Fleet and IT reside under the respective service areas mentioned below. For example, Recreation does

not include the recreation centres themselves – the centres would be reported under Facilities.

- The majority of assets in "Very Poor" condition were assessed based on the "age" of the asset relative to the useful life and may not accurately reflect actual asset condition. The assets continue to remain in service and are functional. In addition, those service areas represent a small share of the City's overall asset portfolio.

- For some service areas, such as Fleet, an age-based assessment is used. This assessment is complimented with inspection protocols to better understand asset condition to evaluate the replacement needs.

- Please note, the service area report cards in Appendix A through Appendix J only illustrate the overall asset conditions and do not differentiate "Very Poor" assets between age and condition based.

Figure 17 – Summary of Asset Condition by Service Area
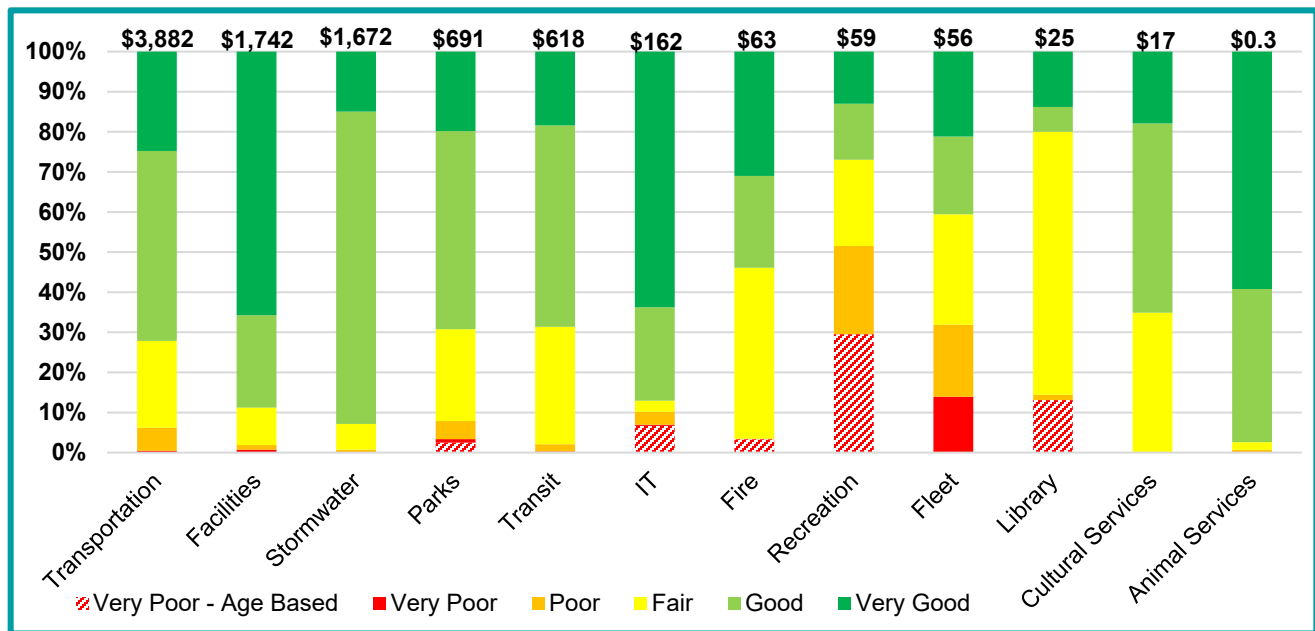
Note: Values identified at the top of each bar represents the replacement value of infrastructure under the "Responsibility View" for each service area (in Millions). The red-hashed sections reflect age based Very Poor assets which may not truly reflect the condition of the asset – as the City matures its practices, progress is expected in better reporting of these assets condition where feasible.

Approach to Informed Decision Making

To achieve the objectives of asset management planning, the City utilizes various types of assessments to optimize resource allocation, reduce risks and ensure the efficient and effective management of its diverse portfolio of assets. The data confidence scale outlined in

Table 8 defines the various measures used to qualify the accuracy and reliability of the information used to develop this report. The assessment of condition is a key component in determining the projection of investment needs for asset repair and replacement.

The choice of condition assessment depends on the type of asset. The 2022 SOLI report implemented the following condition assessment methodologies:

- Facilities – Facility Condition Index
- Roads – Pavement Condition Index
- Bridges – Bridge Condition Index
- Software and Some Other IT Assets – Adequate functionality to provide service
- All other assets – Age and Condition Based Assessment

The following provide a description of the different approaches used:

1. **Age-Based Assessment:** Relies on the assumption that asset conditions deteriorate with time, and their remaining lifespan estimated based on their age.
   Application: Organizations often use age-based assessments as an initial step to establish a baseline understanding of asset conditions. This approach is particularly relevant for assets with well-documented deterioration patterns, allowing organizations to forecast future maintenance and replacement needs where inspection costs outweigh the benefit of actual condition data.

2. **Inspection-Based Assessment:** Involves regular inspections and data collection to assess an asset's current condition, identify maintenance requirements and guide asset management decisions.
   Application: Provide up-to-date data on asset conditions that are crucial in targeting and performing lifecycle activities at the right time. Organizations employ this approach to manage assets with variable deterioration rates and to monitor asset health continuously.

3. **Risk-Based Assessment:** Focus on identifying and managing assets that pose the highest risk assets to an organization, considering factors such as criticality, operational impact, safety and financial implications.
   Application: Used to prioritize resources and efforts toward assets with the greatest potential impact on safety, service delivery and financial sustainability. This approach ensures the application of resources where needed most.

The current City-wide data confidence to use the information presented in this report (which is consistent with the 2022 SOLI) for investment related decision-making is assessed as Medium (Condition Based), as indicated on the scale in

Table 8. Based on a weighted replacement value of all services and their condition assessments, 79% of assets have utilized inspection-based assessments. For certain asset classes, inspection programs with

a full condition assessment is not feasible and these assets will continue to use an age-based approach. Therefore, the City is targeting a maturity rating based on inspection assessments of approximately 91%. Over the long-term, the City will move towards the use of risk-based assessments to prioritize resources and efforts toward assets with the greatest potential impact on safety, service delivery and financial sustainability.

Table 8 – Data Confidence Rating Scale

Scale	Confidence Rating	Assessment Approach	Data Quality Description
	High Confidence	Risk based assessment based on comprehensive data incorporating inspection based condition assessments where feasible and performing risk assessment	Robust data, extensive analysis, and rigorous validation. There is a high degree of certainty in the results and they are considered highly reliable.
	Medium Confidence	Inspection-based assessments	Reasonably strong data and analysis but may have some limitations or uncertainties. The results are credible but not without some degree of risk or uncertainty.
	Low Confidence	Age based assessment not accounting for variations in asset performance.	The assessment has significant limitations or uncertainties, and there may be gaps in data or methodology. The results are less reliable and should be interpreted with caution.
	Very Low Confidence	Age based assessment without sufficient records and requiring validation	The assessment is highly unreliable, lacks sufficient data or analysis, or is subject to significant flaws or biases. The results should be viewed skeptically and may not be suitable for decision-making

Note: Slider indicates the City of Brampton's position on the confidence rating scale (Medium)

Levels of Service
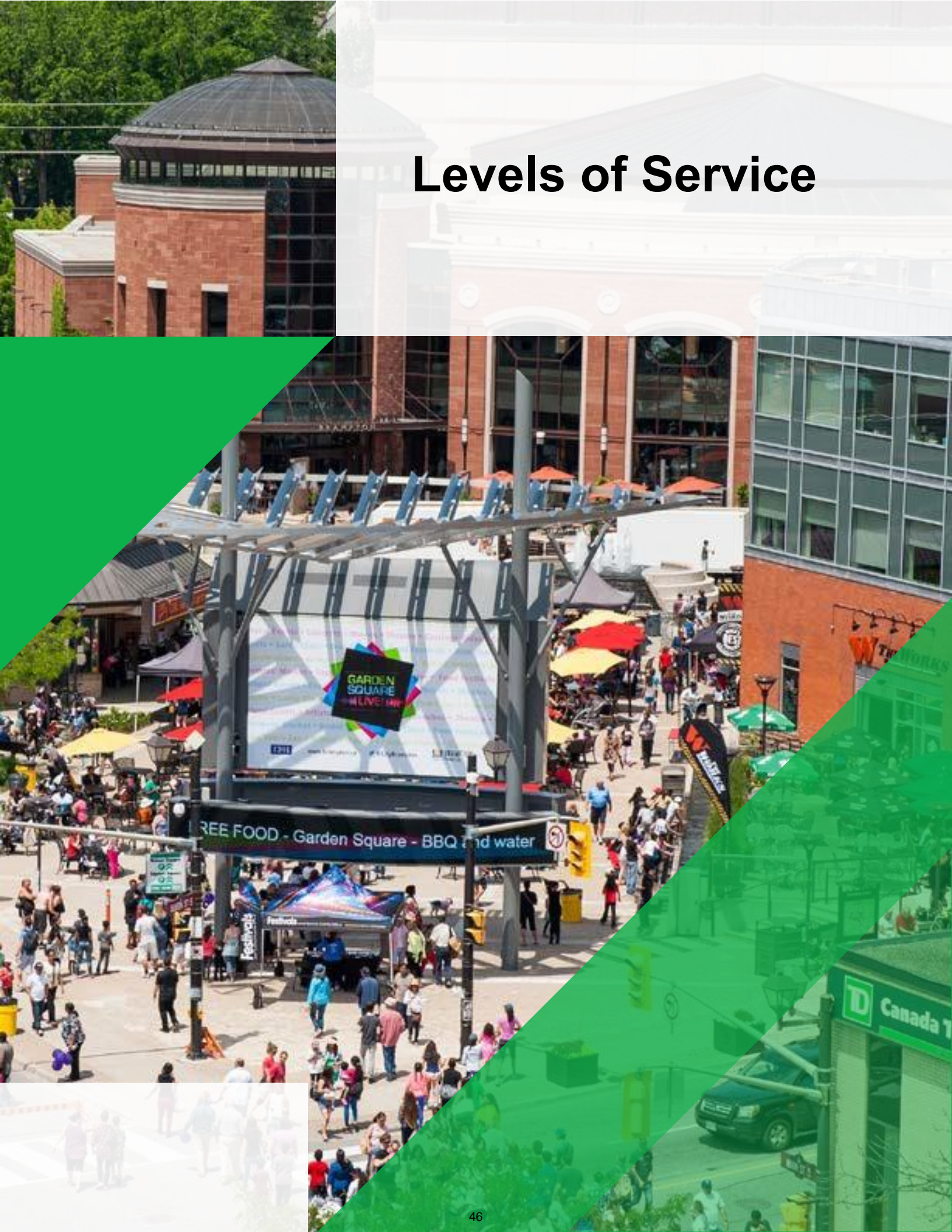
The City of Brampton strives to provide the best possible quality of service for its residents and businesses, while ensuring that services continue to be affordable so the City remains an attractive place to live and work.

As the City's asset management program has evolved, it has become clear that the City will need a more advanced level of understanding of the extent of the services provided to measure both effectiveness and affordability. The legislative environment, in particular *O. Reg. 588/17*, requires municipalities to develop and document their levels of service (LOS). More specifically for core assets, the regulation prescribes explicit customer and technical levels of service metrics. While the same is required for all other assets, the performance measures used to track them are at the discretion of the community.

The City has strived to develop several key levels of service measures for its service areas, which will allow for tracking of these LOS. This is a crucial step to help inform the decision-making process. Discussions with staff have resulted in a levels of service table for each service area, which can be found in Appendix A through J. These tables establish a link between the current levels of service and proposed or targeted levels of service, as well as the costs associated with achieving these targets, including recommendations for non-infrastructure programming and additional cost requirements.

In developing LOS for its services, the City followed a structured approach following three key steps that are shown in Figure 18 below.

Figure 18 – Steps to Developing Levels of Service
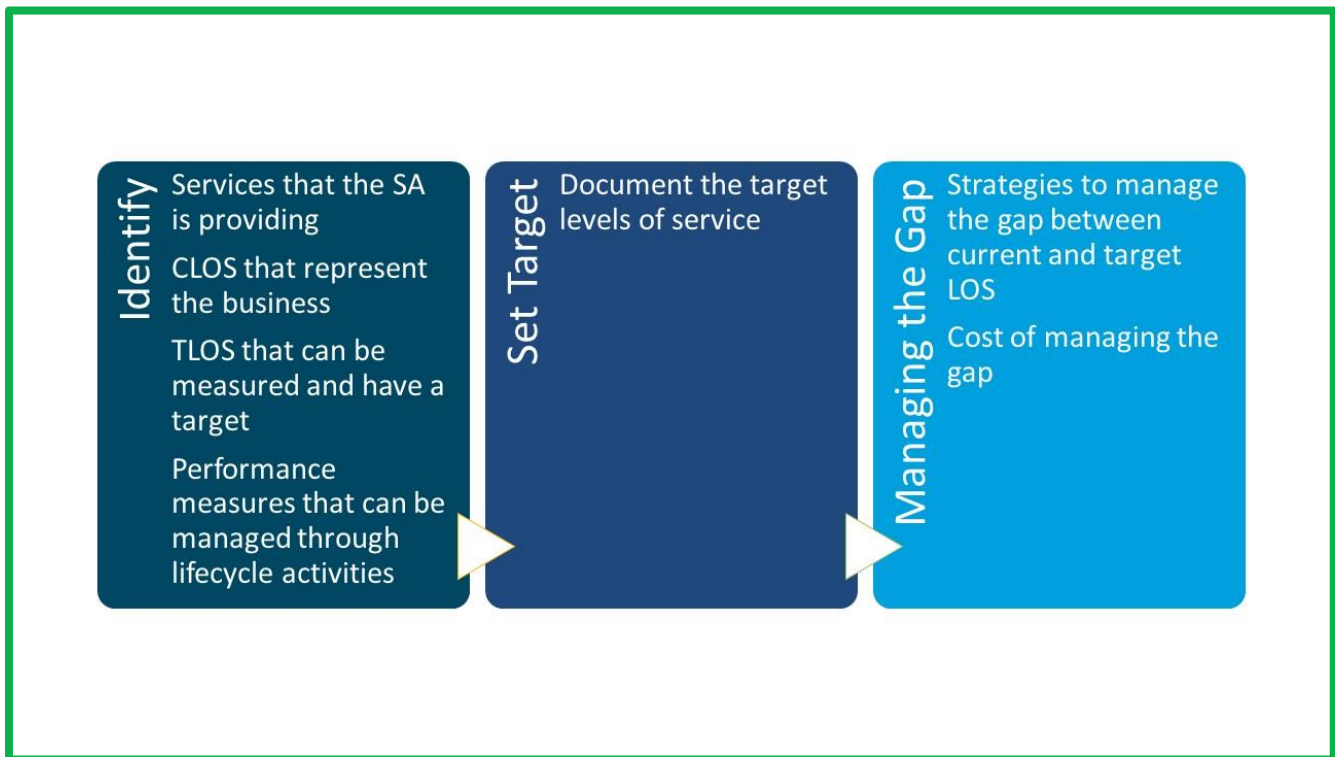
The City's approach to developing LOS involved three main steps. Firstly, the staff identified the services provided and set Corporate Levels of Service (CLOS) aligned with business objectives, alongside measurable Technical Levels of Service (TLOS). Then, they set clear targets based on these TLOS. Lastly, they developed strategies to bridge any gaps between current performance and target LOS, considering associated costs. This approach ensures alignment with organizational goals, stakeholder expectations, and prudent resource management.

Figure 19 summarizes the City's Level of Service framework which is being used as the basis for measuring performance.

Figure 19 – Levels of Service Framework
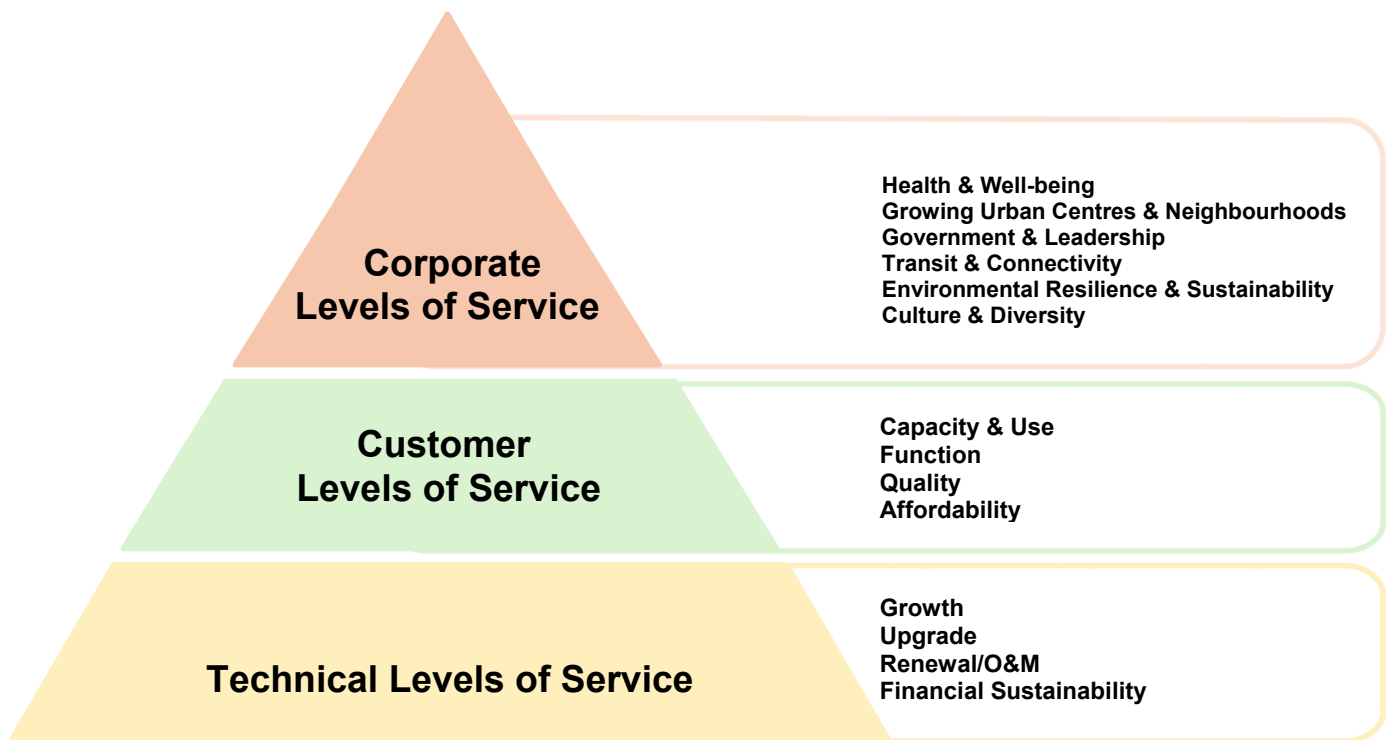
The framework outlined in Figure 19 includes several key elements:

- **Corporate Levels of Service –** Considered to be the overarching principles to ensure that levels of service are in alignment with the City's strategic themes and resulting customer and technical levels of service.

- **Customer Levels of Service[4] –** Definitions and statements describing the stakeholder's expectations of the services provided by the City in order to align the organization's value delivery with the community's needs. Customer levels of service are typically grouped into four service attribute categories: capacity and use, function, quality, and affordability, as shown below.

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[4] Note that *O. Reg. 588/17* requires specific qualitative descriptions referred to as Community Levels of Service in the regulation. These are required for the core assets of roads, bridges and culverts and stormwater.

Figure 20 – Customer Levels of Service

Figure 20 – Customer Levels of Service
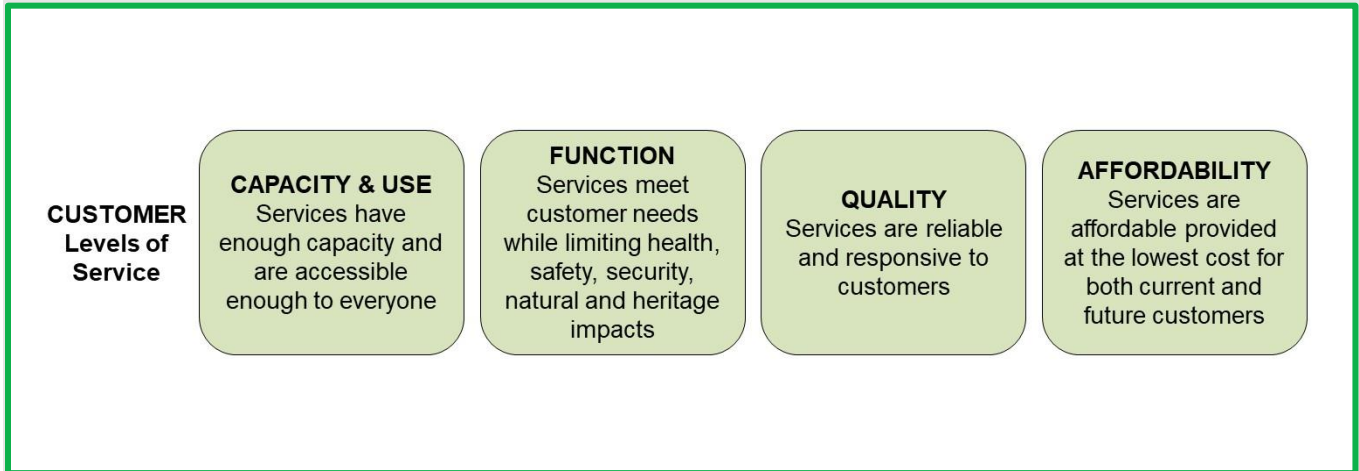
- **Technical Levels of Service** – Measures the allocation of resources to service activities that the organization undertakes to best achieve the desired community outcomes and demonstrate effective organizational performance. Technical levels of service are also typically grouped into four categories: Growth, Upgrade, Renewal/O&M and Financial Sustainability, and align to the customer LOS categories, as shown below.

Figure 21 – Technical Levels of Service
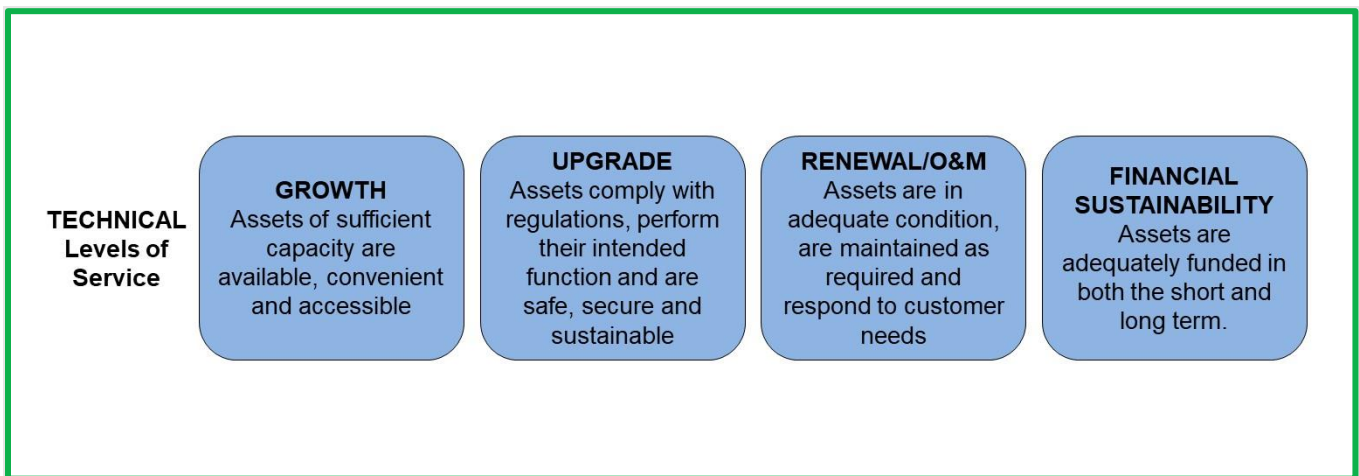
Current Levels of Service

The City developed performance measures for the infrastructure assets, as mandated by *O. Reg. 588/17*, ensuring compliance with qualitative descriptions and technical metrics. These measures were derived from data collected over the last two calendar years. The process involved aligning measures with the City's strategic objectives and input from stakeholders during consultation sessions held with service area representatives. It ensured that the current levels of service accurately reflected the performance and condition of infrastructure assets.

Appendix A through J include the detailed information on current levels of service for all service areas. These levels of service tables were developed to align with several key principles that include:

- LOS measures are relevant to each of the specific service areas;
- LOS are feasible to track and the data to inform the technical measures are readily available or will be tracked for future iterations of the AMP; and
- LOS is a key public engagement component, which are planned to be developed through public input and community consultations. This consultation will ensure that the LOS will be utilized to inform decisions on service provision in the coming years.

Performance measures are crucial for tracking levels of service as they provide quantifiable metrics to evaluate the effectiveness and efficiency of service delivery. By systematically monitoring these measures, the City can assess whether service standards are being met, identify areas for improvement, and allocate resources effectively. An iterative consultation process helped in developing an internal tracking tool to capture the necessary data for calculating the current levels of service and monitoring the trends moving forward.

Proposed Levels of Service

O.Reg 588/17 requires municipalities to define its proposed levels of service by July 1st, 2025. These proposed levels of service (PLOS) are intended to provide the City with a measurable future target state for the services it provides. The current levels of service, which were originally developed in the 2021 Corporate AMP and have been updated as part of this SA AMP, lay the foundation for the proposed LOS. For every level of service that the City measures, a corresponding set of key proposed LOS measures should be developed in consultation with Council, service area representatives and the public to ensure alignment with stakeholder expectations. This consultation process varies across service areas, where some have utilized surveys, public consultations, tele-town halls, or analyzed resident complaints, while others have followed a more intuitive approach. By engaging stakeholders through various channels, the City ensures that the proposed levels of service reflect the diverse needs and priorities of the community, fostering transparency, accountability, and stakeholder buy-in.

As part of this Service Area AMP, extensive consultation with service area representatives was conducted to develop proposed levels of service based on the needs of the community and assessing their appropriateness for the City.

Appropriateness Assessment:

The appropriateness assessment is conducted by the service area staff through internal assessment processes. This ensures that the proposed levels of service are carefully evaluated based on the following criteria:

1. **Options & Associated Risks:**

   Service area staff assess various options for the proposed levels of service and analyze the risks associated with each option to the long-term sustainability of the municipality. This assessment considers factors such as service quality, operational efficiency, and financial sustainability.

2. **Differences from Current Levels of Service:**

   The City staff compare the proposed levels of service with the current levels. This comparison identifies areas where adjustments or enhancements are necessary to address evolving stakeholder needs, regulatory requirements, and technological advancements. While some proposed levels of service may mirror the current levels outlined in the previous AMP, adjustments or enhancements may still be necessary to ensure alignment with organization goals.

3. **Achievability:**

   The service areas have assessed the feasibility of achieving the proposed levels of service, considering factors such as available resources, technological capabilities, and operational constraints. Efforts have been made to ensure that the proposed targets are realistic and attainable within the municipality's operational capacity. Notwithstanding the City's intended ability to achieve the targets, it is expected that the proposed levels of service continue to be reviewed and monitored and further adjustments may be warranted moving forward.

4. **Affordability:**

   The affordability assessment for the proposed levels of service is conducted in conjunction with the budget process, ensuring alignment with the financial resources and constraints of the municipality. This process inherently involves approval by Council and the organization, with affordability considerations integrated into budgetary decisions.

Moving towards the proposed levels of service will require specific interim planning and targets to ensure that the resources and work needed to achieve the proposed levels of service is sustainable and affordable. Finally, continued monitoring would need to occur to ensure that the planning needed to meet proposed levels of service continues to be achievable and sustainable.

Asset Management Strategy

Demand Management

Demand management within this SA AMP involves responding to future changes in the City that may impact the demand for municipal services. This section of the report is intended to identify the factors that may influence the demand, outline strategies for managing it and estimated associated costs. The demand placed on City services would evolve as the priorities of the community change, technologies emerge and existing services are improved. This section of the report is informed by analysis and surveys completed by each service area, as well as relevant master planning documents which approach demand management with a narrower scope than the contents of this plan. This section further builds on the framework developed during the Corporate AMP by outlining the framework for consideration and provides an overview of:

- Demand Drivers & Forecast;

- Impact on Levels of Service; and

- Demand Management through Lifecycle Activities.

Moving forward, the City is expected to continue to see a fairly significant amount of development over the long-term. This level of growth will continue to require additional services, such as improved access to all modes of transportation, to ensure that quality of life is maintained for the existing and new residents while also ensuring new facilities, parks and other services are expanded to keep pace with the increased demand.

Demand Drivers and Forecast

As indicated in the previous section, the City of Brampton has experienced significant growth over the last few decades and the demand placed on City services is expected to continue to increase with growth. Overall, the demand pressures identified in this section will require the City to review and manage existing levels of service while evaluating the need for new services to expand the servicing capacity to meet the demand pressures or rectify deficiencies in the City's asset portfolio.

Population Growth: Since 2006, the City's population has increased by nearly 230,000 residents and 60,000 employees. This growth has propelled the acquisition of several new assets and expansion of City services to ensure service levels are maintained and the needs of both existing and new residents are met. The total population of the City of Brampton is estimated at approximately 678,000 (2021 Census but adjusted to account for undercoverage) with a fairly substantial amount of residential and non-residential growth slated over the long-term. It is projected that, by 2051[5], the City's population will reach 985,000 and employment

of 355,000 employees. The projected increase in residential growth supplemented by continued economic development will place increased demand on municipal infrastructure. For example, further growth in the City's population will place an increase in demand for Animal Services, including longer wait lists and space constraints for intake of additional animals.

Figure 22 below tracks both historical and forecast population, households and employment in the City from 1996-2051.

Figure 22 – Historical & Forecasted Population, Occupied Households & Employment (1996-2051)
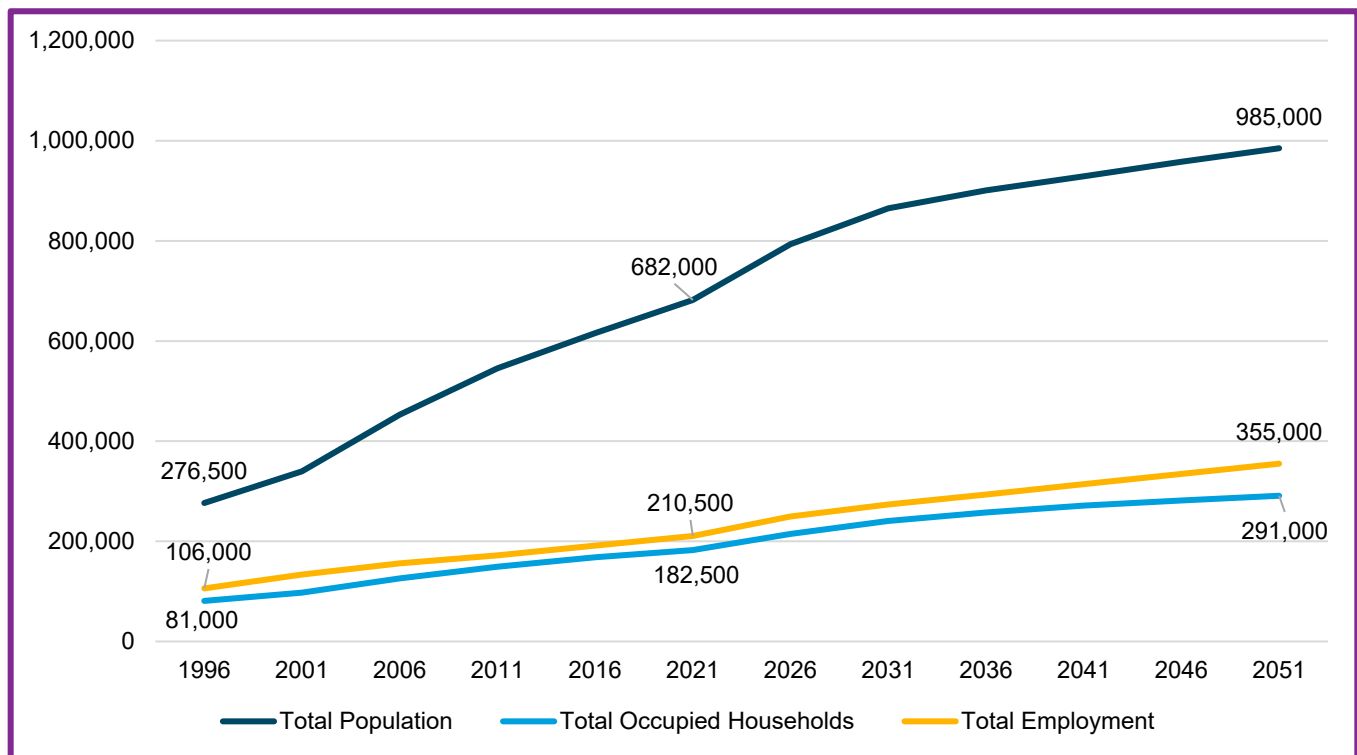
Source: Statistics Canada and Hemson Consulting 2024. 1996-2021 population, household, and employment figures are based on 2021 Census. 2051 population, households, and employment figures are based on the 2022 Region of Peel Official Plan. Population adjusted for census net undercoverage.

Net Migration: Brampton has experienced positive net migration for all age groups between 2011 and

2016. As seen in the chart titled "Percentage of Net Migration Changes (2016-2021) Relative to 2016

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[5] This represents the figures approved in the new approved Region of Peel Official Plan and the minimum targets in the Brampton Plan approved by City council in November 2023. The content of the Peel 2051 RPOP is guided by the requirements of the Planning Act, and key Provincial plans and legislation such as A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020 (Growth Plan).

Population" below, Brampton has one of the highest migration rates of the municipalities surveyed. As more people are moving into Brampton rather than moving out, the City will likely continue to experience an increase in demand for services. When considered under the lens of Transit services, the increase in demand for services will create overcrowding and delays due to congestion.

Figure 23 - Percentage of Net Migration Changes (2016 - 2021) Relative to 2016 Population [1]
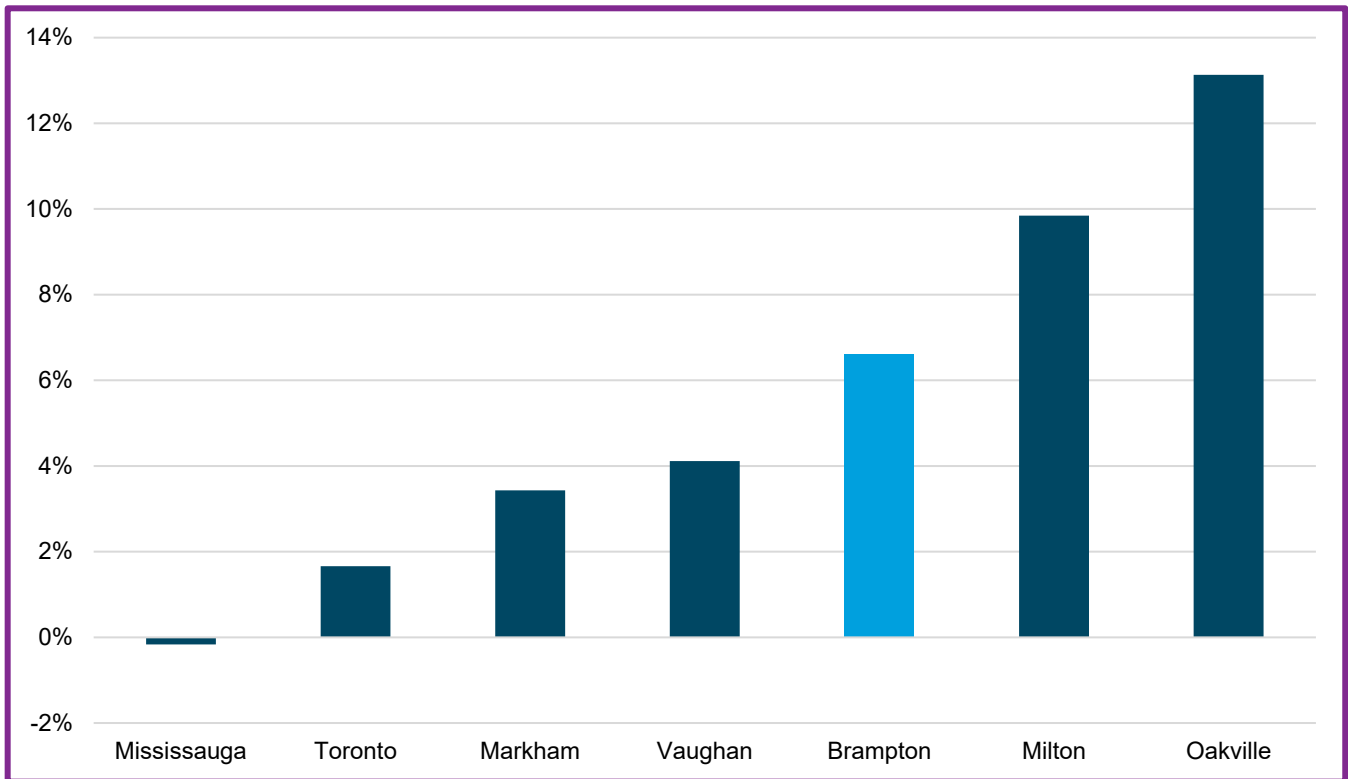
[1] *Informed using 2016 and 2021 Census information*

Age Structure: Brampton's age structure is relatively young, and as the population ages the need for a variety of different services will change from the current standards.

Figure 24 – City of Brampton Age Structure (2021) [1]

Age	Female	Male
0 - 4	17,370	18,400
5 - 9	19,035	20,545
10 - 14	20,455	21,855
15 - 19	20,565	22,325
20 - 24	25,345	31,370
25 - 29	25,815	28,195
30 - 34	24,905	24,115
35 - 39	25,565	23,080
40 - 44	24,140	21,710
45 - 49	22,565	20,950
50 - 54	21,330	20,565
55 - 59	20,285	20,265
60 - 64	16,970	16,915
65 - 69	14,285	12,900
70 - 74	11,945	10,710
75 - 79	7,860	7,040
80 - 84	5,190	4,115
85 - 89	2,885	2,175
90 - 94	1,315	770
95 - 99	375	160
100+	70	20

■ Male ■ Female
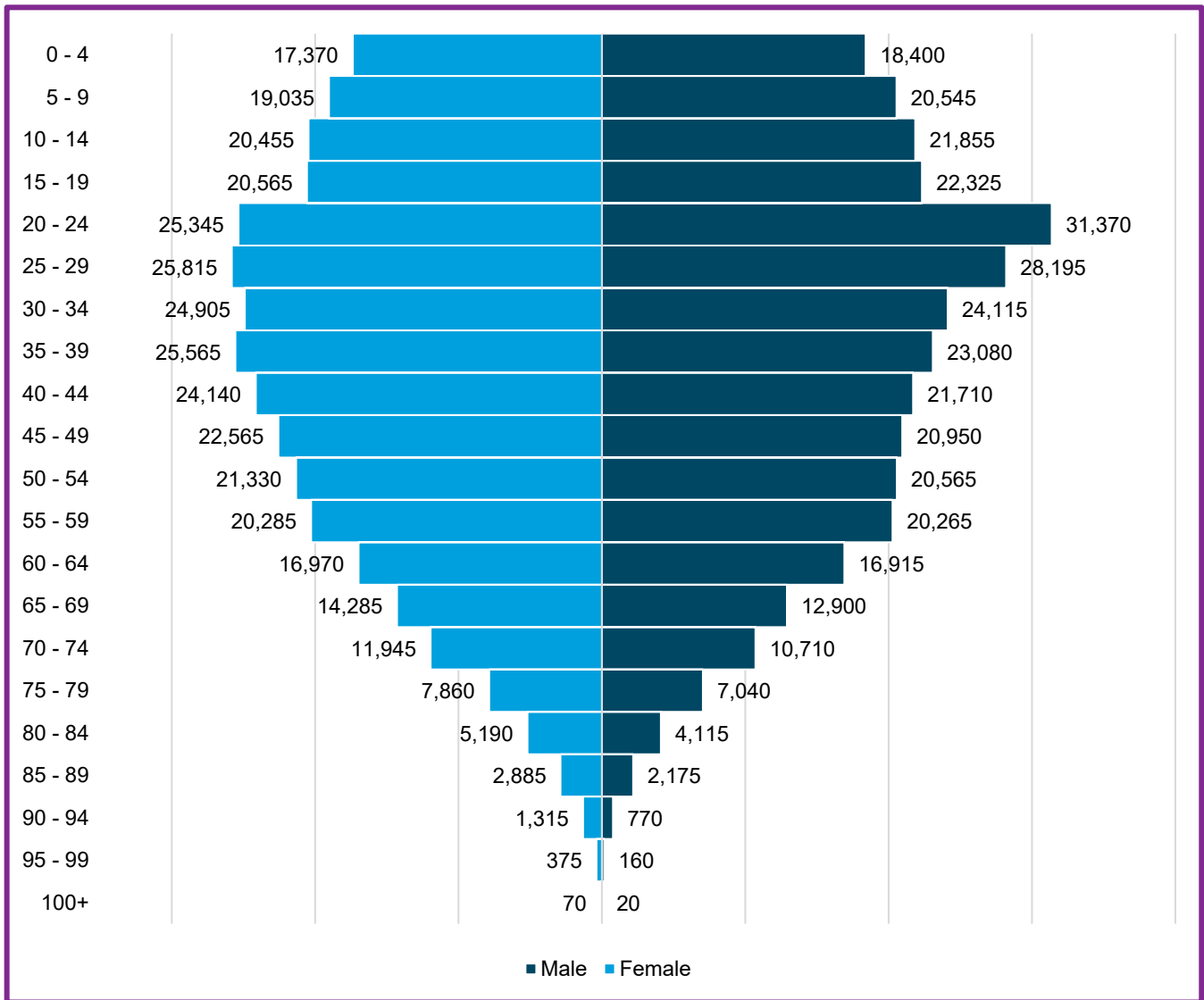
[1] *Informed using 2021 Census information*

Urbanization: The availability of greenfield lands is generally becoming scarcer and, therefore, many communities are looking to increasing density and intensification to continue to accommodate growth. In general, intensification is development that allows for more people to connect, work and play within the existing urban boundary. Overall, this intensification happens through redevelopment, expansion and/or re-purposing of existing areas, buildings or vacant lands. The City of Brampton is planning for intensification within its built boundary and in its urban growth centers to meet the specific targets outlined in the growth plan. The infrastructure needs and service requirements from intensification are often much different than those required by greenfield developments. The City needs to ensure development in these built-up areas and planned intensification occurs in a sustainable and coordinated fashion. For example, higher density typologies and secondary units in houses as a result of urbanization require a different response to structural fires and medical emergencies.

Diversity: The diversity that exists in Brampton in terms of persons from different social, cultural, economic and religious backgrounds, and persons with disabilities are important to consider when identifying priorities and building new infrastructure. For reference, according to 2016 census, the City had the 4th largest visible minority population in Canada with over 70% of the population reported as being a visible minority. As the demographics continue to adjust, additional pressure is placed on the City to ensure the infrastructure and services meet the demands of an evolving user base. As an example, more diverse communities require a larger range of sporting and outdoor facilities to support a wider array of cultural demands.

Technological Changes: For some service areas, the advancement in technology can be pivotal in the way the City delivers services and the costs associated with providing them. For example, as it relates to Transit services, the introduction of autonomous vehicle technology could reduce or eliminate the human element of Transit. This has the potential of avoiding collisions and reducing operating costs, which may also enable Brampton Transit to improve safety and efficiency. Similar technological advancements in Information Technology are likely going to continue to evolve and the City's ability to manage these assets could change moving forward. It will be important for the City to recognize the asset interdependencies which would exist with IT infrastructure and other City services. For example, technological changes have placed an increased demand on digital library materials and programming offerings for residents in the City.

Climate Change: Due to the changing nature of the environment, climate change can be a leading element that can place increase demand and stress on the City's infrastructure. Further to this, the growing awareness of environmental sustainability has brought increased focus on federal and provincial emission policies and municipal practices to drive change and implement green policies. These initiatives are leading to the introduction of more hybrid and electric buses for Brampton Transit, electrification of the City's fleet and use of green building standards for new building construction. As an example, through efforts to become more environmentally sustainable, the City's current facilities assets are expected to be replaced with environmentally friendly infrastructure. Along with these initiatives, green infrastructure such as natural assets, low impact developments (LIDs) and other environmental features will help the City meet its climate change priorities.

Customer Preferences: Other emerging trends and customer preferences may affect the future demand for City services, which would have a direct impact on the assets required to deliver these services. The nature and extent of this impact is very dependent on the type of service. For example, the landscape of Recreation services offerings is seeing a shift from high-demand organized sports towards unstructured and self-scheduled "drop-in" forms of recreation.

Legislative Changes/Council Decisions: Legislative changes may put demand pressures on the Service Areas to comply with its requirements. These future changes are unknown but may have potential impact on the way the City delivers its levels of service. Specifically, the province of Ontario has established a transition board to review

key Regional services which could transfer the responsibility of certain services to the lower-tier communities. At this time, no decision has been made on this transition, however, these legislative changes will impact the demand placed on specific services in this plan. For example, the retention of new infrastructure and services to Brampton would mean IT services, particularly associated with management of assets would change as the City expands its service portfolio and FTEs.

Special Projects: There are some special City projects that could affect the future demand for City services, which would have a direct impact on the assets required to deliver these services. Recognizing that the nature and extent of this impact is dependent on the type of service, the impacts could be profound. One particular example would be new secondary institution space – the new institution would increase the demand for library services with an influx of new students. In addition, in the short-term, there would be a displacement of library facility space to accommodate the secondary institution reducing the available library space capacity.

Impacts on Levels of Service

The demand drivers outlined above would impact customer levels of service in the City over time. Although the changes in demand might occur gradually, the City needs to be cognizant of the relationship that exists between demand and levels of service so it can be planned for appropriately over the long-term. Of particular relevance, the following customer levels of service would be impacted by the demand drivers outlined:

- **Capacity & Use:** Describes the assets' capacity to provide service to meet demand and whether the asset is available at all times that service is

demanded.

- **Functionality:** Describes to what extent the assets comply with regulations, perform their intended function and are safe, secure and sustainable.

- **Quality:** Describes the physical condition of assets, the level they are maintained at and satisfaction of customers.

The section below provides a summary of how the three customer levels of service are impacted by the various demand drivers.

Capacity & Use: Brampton is considered as one of the fastest growing cities in Canada. With continued growth in population, expansion of the commercial, industrial and office use base bringing new employees to the City, the existing infrastructure will be impacted. Without additional investment to expand the servicing capacity of the existing infrastructure, service levels could fall as the assets would not be available to meet the demand. Without investment, this increased demand could mean transit routes/busses are over capacity, recreation centre programs are full, libraries are not strategically located in new growth areas and new parks and amenities are not developed with the new communities. The City has a robust capital investment plan to acquire new assets to meet the needs of the community – the City levies DCs via eight independent by-laws to recover for growth-related capital infrastructure needs. The City is in the process of preparing an updated DC Study to pass new by-laws to continue to ensure DCs are used to the extent permitted under the Development Charges Act.

Functionality: As the City continues to evolve and technological advances take place, the assets may not perform their intended function. Furthermore, as climate related events continue to take fold, the City will need to continue to be responsive to adapt its assets and infrastructure to meet these specific demands. These specific demand drivers could have a material impact on the City's functional levels of service. The City has been at the forefront to be more environmentally sustainable as current assets are expected to be replaced with environmentally friendly and technologically advanced infrastructure to manage demand. Some examples include the greening of the City's fleet, retrofitting existing facilities, and upgraded software and IT to manage the demand of residents.

Quality: In most cases, all the demand drivers noted above could have a varying impact on the physical condition of assets. For example, as the population grows and without the proper and timely investment in new infrastructure, the assets could deteriorate at a faster rate with over-use. Another example, if there is a change in customer preferences and the City does not keep up with the demands of the residents, some assets may be over utilized while others are underutilized, therefore, could create overspending on managing underutilized assets while those resources could have been deployed to the over used assets.

Demand Management through Lifecycle Activities

The demand drivers identified in the previous section could impact each asset lifecycle activity. Overall, the demand for new services will be met through a combination of managing existing assets, upgrading existing assets and providing new assets.

The section below outlines the link that exists between demand and the lifecycle activities. This Service Area AMP represents a significant improvement to identify the demand management drivers for each service area. The Service Area AMP identifies the following six key lifecycle activities which this AMP is structured upon:

1. Non-Infrastructure Solutions
2. Operations & Maintenance
3. Renewal & Rehabilitation
4. Replacement
5. Disposal/Removal
6. Expansion/Upgrade

Non-Infrastructure Solutions: Actions or policies that do not necessarily relate to direct work on assets and can increase the efficiency and effectiveness of municipal infrastructure. Generally, managing demand does not always implicitly require an expansion of services and acquisition of new assets. Some of the demand can be managed by strategic non-infrastructure solutions. Particularly for some of the service areas, the solutions could be of use to manage demand:

- Transit – Continued review of route planning to manage peak period demands.
- Recreation – Dynamic pricing model to encourage increasing participation rates during low-volume periods to smooth out peak period usage.
- Library – Targeted programming during low volume periods to attract visitors from peak programming times.

Operations & Maintenance: In order to respond to the various demand drivers, the City may require an expansion of existing infrastructure. Once the new

demand is met with additional capacity, the City would then be responsible for operating and maintaining those assets over its useful life. Therefore, the level of growth will also place pressure on the City's operating budget to manage the maintenance activities to ensure the new assets remain safe, operational and provide expected levels of service while in service.

For most assets included in this SA AMP, the maintenance costs of the new assets have been estimated by maintaining the relationship of the existing maintenance expenditures associated with the existing asset base to the new assets being acquired.

Renewal & Rehabilitation: Based on discussions with the service areas, increased demand does not necessarily change the regular renewal and rehabilitation activities already planned for in an asset's life in most instances. However, for some demand drivers related to Transit or Recreation, changes in customer preferences would impact the City's asset renewal and rehabilitation plan to be responsive to the evolving needs of residents. In the Recreation context, facility renovations take place to respond to the different lifestyles and preferences of the residents.

Disposal/Removal: Based on discussions with the Service Areas, most asset disposal activities are immaterial and do not have any net fiscal impact to

the City which should be considered at this time. In some instances, the City could generate some revenues selling off old assets to other communities (i.e. buses at the end of their useful life) which those proceeds are then applied to the acquisition cost to replace the asset. Alternatively, for assets such as city trees, those assets would need to be removed before emplacing a new one. As a result, for the purposes of this analysis, any asset Disposal activities are assumed to be captured in the renewal and replacement cost of the assets.

Expansion/Upgrade: The forecast population and employment growth slated for the City will place an increased pressure on the existing infrastructure and assets. In order to manage the demand, the City will be required to emplace a significant amount of new infrastructure to ensure service levels are maintained. The immediate 10-year planning period will see the population reach approximately 880,000 people with 282,000 employees. This growth calls for a capital spending requirement of about $6.7 Billion related to the services considered in this plan. Of note, most of this value can be attributed to higher-order transit which, if constructed, would attract a share of funding from upper levels of government for both capital and operating expenses. Also, the higher order transit infrastructure is being emplaced to benefit development occurring outside of this ten-year period.

Risk Management

The City has always considered risk as part of daily operating practices to guide what lifecycle actions are required to allow assets to meet level of service objectives. In 2022, as part of development of the Corporate AMP, the City recognized that risk was generally managed at the various departmental levels with varying methodologies and strategies. For this reason, a Risk Management Strategy (RMS) was developed as part of the Corporate AMP to ensure a standardized and consistent approach to asset risk management was utilized across all of the City's service areas. The RMS ensures that a system is in place to help guide the decision-making process for prioritization of projects across asset classes. The RMS is aligned with the risk framework standards of ISO 31000, which is utilized world-wide and gives the City an industry standard to strive for. Figure 25 below outlines the components of the risk management strategy.

The City of Brampton is currently developing an Enterprise Risk Management Framework (ERM) aimed at fostering a standardized understanding, management, and monitoring of key risks across the organization at a corporate-wide level, while also leveraging departmental-level insights. This ERM framework will inform and be informed by the Risk Maturity Model utilized in this plan, facilitating a reciprocal exchange between the two frameworks. This iterative process will be instrumental in integrating risk discussions into strategy, policy, budgeting and delivery of services. Moreover, it will offer opportunities for scenario planning and establish an early warning system to identify risks effectively. By integrating the RMS into the ERM framework, the City aims to coordinate ERM activities seamlessly across the organization, ultimately working towards achieving the desired strategic state, which is projected to align with ISO 31000 standards.

Figure 25 – ISO 31000 Risk Management Process
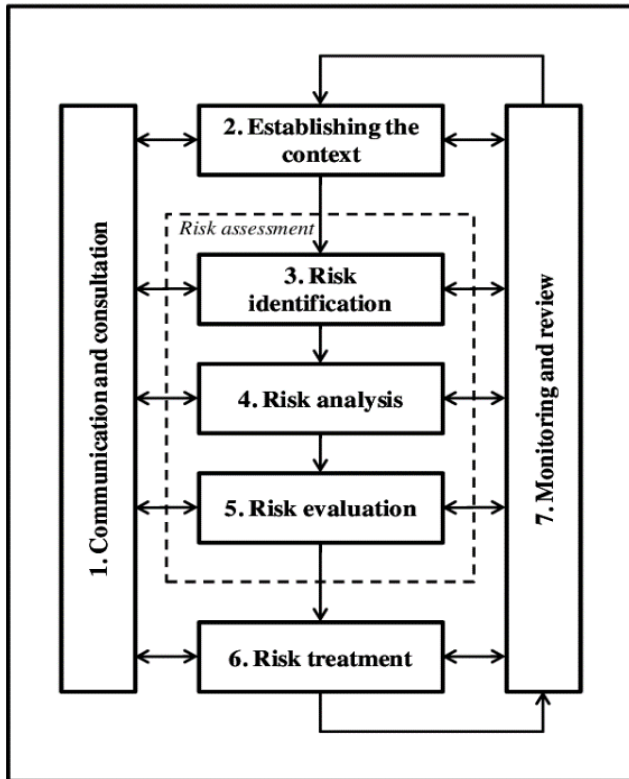
Risk Assessment

The RMS has been developed in line with each distinct component of the Risk Management Process from Figure 25. Service areas have historically utilized individual subject matter experts to assess risk and prioritize investment. This has not previously been documented. The process outlined here establishes a documented understanding of the risk of asset failure and enables effective management of assets utilizing a risk treatment approach. The results should be interpreted recognizing that the City will need to make improvements to the risk analysis over time and improve its maturity score in this category, however the analysis lays the groundwork for future work.

The assessment follows the framework that was established through development of the Corporate AMP. While the Risk Assessment is consistent in its

definitions and structures corporate wide, some components have been specifically developed with an approach unique to each service area. The consequence of failure and risk treatment were developed through individual consultations with service areas. As a result, the corporate RMS has now been applied at the service area level with detailed results for each service area presented in the appendix. Furthermore, the Risk Assessment focuses on the risks associated to providing the desired levels of service as discussed in Levels of Service: Current and Desired Levels of Service.

Risk Analysis

The RMS recognizes that all risks are a result of the likelihood and consequence of risk related events. The following outlines the detailed methodology used in this approach.

Likelihood

The likelihood of an asset risk event refers to how likely it is for a risk event to occur. The likelihood of failure is determined on an asset-by-asset basis and with input from service area subject matter experts. It is based on a qualitative score from 1 to 5 where 5 represents the highest likelihood of failure. Table 9 summarizes the definition of likelihood.

Table 9 – Likelihood of Failure Definitions

Level	Name	Description
P1	Rare	Event could occur very infrequently or only in exceptional circumstances; but is not expected.
P2	Unlikely	Event could occur infrequently.
P3	Moderate	Event should occur at some time.
P4	Probable	Event will probably occur regularly or in most circumstances.
P5	Almost Certain	Event is expected to occur very frequently or in most circumstances.

The likelihood of failure represents a qualitative assessment of the perceived potential of an asset failing to provide desired levels of service. The higher the value assigned to an asset (i.e. closer to P5) the more likely that asset is perceived to have the potential to no longer provide the level of service expected. Assets with a higher likelihood of failure would be prioritized for lifecycle activities to address the issues that create the perception of high likelihood of failure. Conversely, an asset that is likely to continue to provide the desired level of service, would have a lower likelihood of failure (i.e. closer to P1). Changes to the likelihood are largely driven by the asset's capacity and use, functionality and quality, therefore the likelihood should be monitored and adjusted accordingly over time as evaluations of the risk factors occur.

Consequence

An outcome of an event affecting the levels of service is described by the consequence. The consequence of failure is determined based on the degree to which a risk event would impact levels of service based on the following criteria:

- **Health & Safety:** Associated to the magnitude or seriousness of injuries that can occur under a certain risk event. This would correspond to the legal and regulatory aspect of risk where factors such as regulatory changes would affect the consequence.

- **Reputation/Social:** Refers to the perception of the public of the service being provided by the asset. This would correspond to the strategic aspect of risk where factors such as shifts in demographic or social consciousness would affect the consequence.

- **Service:** Considers the level of disruption if an asset does not provide the target level of service. This would correspond to the operational aspect of risk where factors such as changes to the level of service would affect the consequence.

- **Economic:** Refers to the financial/economic impact if an asset does not provide the desired level of service. This would correspond to the financial aspect of risk where factors such as current economic or market conditions are drivers of the consequence.

- **Environmental:** Considers the impact to the natural environment, and the timeframe in which the impact can be reversed. This is related to both legal and regulatory compliance and the strategic aspects of risk with a key driver of risk intensification being climate change.

Similar to likelihood of failure, consequence of failure has been determined on an asset class and sub-class basis and in consultation with service area subject matter experts. An asset is assigned a consequence based on a 1 to 5 scale where 5 represents the highest consequence if an asset in this asset class fails. Table 10 summarizes the consequence of failure and its definitions based on the criteria above. The consequence framework provides a standardized method to assess the consequence of assets unable to provide desired levels of service, however it is utilized within the context of the unique levels of service provided by each service area.

Risk Assessment for Customer Levels of Service

The importance of the risk assessment stems from the concept that certain factors affect the levels of service provided by each asset. The RMS defines likelihood and consequence factors for each of the three customer levels of service categories, this results in an evaluation of risk in all three areas:

- **Capacity & Use:** Describes the assets capacity to provide service to meet demand. It also describes whether the asset is available at all times that service is demanded. Within the City's context, this typically relates to whether assets have enough capacity to meet the demands for service from a growing population.

- **Functionality:** Describes to what extent the asset complies with regulations, perform their intended function and are safe, secure and sustainable.

- **Quality:** Describes the physical condition of assets, the level they are maintained at and satisfaction of customers. The quality of an asset tends to change over time as the asset ages.

The approach therefore allows for the recognition of asset failure not just in the traditional sense (an asset breaking down) but also in terms of an asset failing to provide desired levels of service. Asset failure is often referred within the context of an asset removed from service, however this framework will help identify assets or asset classes which are considered to have failed in either their capacity/use, functionality or quality.

Table 10 – Consequence of Failure Definitions

Consequence Criteria	Consequence of Failure				
	C1 Insignificant	C2 Minor	C3 Moderate	C4 Major	C5 Catastrophic
Health & Safety	Negligible injuries	Minor injuries, medical attention required	Serious injuries, multiple minor injuries	Multiple serious injuries, Loss of life	Multiple loss of life or City-wide health-related disaster
Reputation/ Social	Event only of interest to individuals. No community concern.	Minor community interest. Local media report.	Public Community Discussion. Broad adverse media coverage.	Loss of confidence in Council. National publicity. Public agitation for action.	Public investigation. International coverage. Management changes demanded.
Service	Service not affected or minimal impact	Localized disruption of non-essential service	Localized disruption of essential service	Widespread short-term disruption or localized long-term disruption of essential service	Widespread and long-term disruption of essential service
Economic	Damages, losses or fines <$10,000	Damages, losses or fines $10,000 to $200,000	Damages, losses or fines $200,000 to $2,000,000	Damages, losses or fines $2,000,000 to $10,000,000	Damages, losses or fines >$10,000,000
Environmental	Negligible impact fully reversible within 1 week.	Material damage of local importance. Prosecution possible. Impact fully reversible within 3 months.	Serious damage of local importance. Prosecution probable. Impact fully reversible within 1 year.	Serious damage of national importance. Prosecution expected. Impact fully reversible within 5 years.	Serious damage of national importance. Prosecution. Long term study. Impact not fully reversible.

Risk Evaluation

After establishing the parameters associated to likelihood and consequence, the information is used to generate a quantitative assessment based on the following formula:

$$\text{Likelihood x Consequence = Risk Rating}$$

$$\text{where Likelihood = \{1,2,3,4 or 5\} and Consequence = \{1,2,3,4 or 5\}}$$

For example, an asset with likelihood of 5 multiplied by consequence of 5 would generate a risk score of 25 (P5, C5). This would indicate that the asset is at high risk of failing to provide desired levels of service in the near term, and is of vital importance, therefore would require immediate effort in order to allow the asset to continue to provide service effectively.

The RMS is then expanded to incorporate the customer levels of service for both the likelihood and consequence of failure. Therefore, a more detailed evaluation of the likelihood and consequence of failure are clearly defined as resulting from the customer levels of service. This provides a clearer relationship between the services provided and the linkage to the perceived risks. The more advanced likelihood and consequence formula is as follows:

$$\text{max Likelihood = max (Capacity \& Use, Functionality, Quality) and}$$

$$\text{max Consequence = max (Capacity \& Use, Functionality, Quality)}$$

$$\text{where Capacity \& Use = \{1,2,3,4 or 5\}, Functionality = \{1,2,3,4 or 5\}, Quality = \{1,2,3,4 or 5\}}$$

The resulting quantitative risk assessment in this expanded risk framework is therefore determined as follows:

$$\text{max Likelihood x max Consequence = Risk Rating}$$

To clarify the approach, Table 11 outlines a sample of an evaluation utilizing 3 hypothetical assets. In this example, Asset 1's likelihood of failure has been evaluated for each of the customer levels of service. Since Capacity & Use and Functionality are the highest values, the max value of 2 is considered the likelihood. For consequence Capacity & Use and Functionality are again the highest values and the max value of 3 is considered the consequence. Multiplying the likelihood and consequence then results in the risk rating of 6. Assets 2 and 3 show similar approaches that result in higher risk ratings of 12 and 20 respectively. The advanced model presented above and in the sample in Table 11 provides the advantage that the primary drivers of risk can be identified more clearly.

Table 11 – Sample Risk Assessment Evaluation

Asset	Likelihood				Consequence				Risk Rating
	Capacity & Use	Functionality	Quality	Max Likelihood	Capacity & Use	Functionality	Quality	Max Consequence	
Asset 1	2	2	1	**2**	3	3	2	**3**	**6**
Asset 2	3	2	1	**3**	2	1	4	**4**	**12**
Asset 3	5	1	5	**5**	2	3	4	**4**	**20**

Table 12 summarizes the risk rating categories in the risk assessment matrix. Assets identified to be closer to the bottom left of the matrix are considered lower risk to the City with assets identified to be closer to the top right of the matrix considered higher risk. The risk categories, and associated colour coding, are defined as follows:

- **Insignificant (Green)** – Accept risk, no risk treatment required.
- **Low (Light Green)** – May be acceptable but monitoring of assets may be required.
- **Medium (Yellow)** – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- **High (Orange)** – Requires consideration by management, risk management and monitoring are required.
- **Extreme (Red)** – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

Table 12 – Risk Assessment Matrix

		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	Medium	Medium	High	High	Extreme
	P4	Low	Medium	Medium	High	High
	P3	Low	Low	Medium	Medium	High
	P2	Insignificant	Low	Low	Medium	Medium
	P1	Insignificant	Insignificant	Low	Low	Medium

Note: The framework generates risk assessment matrices for each of the customer level of service criteria: capacity/use, functionality, and quality and across service areas.

Based on the criteria in Table 12, despite the obvious risk associated with the "extreme" classification, assets in a "high" risk category should garner equal attention as these assets could disrupt the City's level of service and could transition to an extreme classification without the proper intervention activities. Furthermore, in recognizing the risk rating of a particular asset, the RMS allows for the identification of the key driver of the risk based on the likelihood and consequence. As mentioned in the example from Table 11, a key driver of risk for Asset 3 was the likelihood of failure related to capacity and use. This would therefore indicate the lifecycle activities that would need to be undertaken to upgrade the asset or improve its capacity to

address the risk. This demonstrates the usefulness of the RMS in helping inform what lifecycle activities should be undertaken on assets.

The evaluation of assets utilizing the RMS are used as a complimentary process to annual capital budgeting exercises. The City's current capital budgets are generally developed based on an assessment of capital needs at a departmental level and independent from each other. The RMS allows the City to assess the risk of assets at both a departmental level and a corporate level to determine assets with the greatest need to undertake lifecycle activities. The evaluation can help inform a list of prioritized works which would

include the set of lifecycle activities needed to address high risk assets.

Cumulative Results of the Risk Analysis

Figure 26 summarizes the cumulative results of the Risk Analysis undertaken for all service areas. In total, about $3.4 billion in assets have been assessed, representing all asset categories, with the exception of transportation and stormwater which were assessed in their respective departmental asset management plans in 2022. Of the $3.4 billion, about $1.3 billion (40%) have been assessed to be in low to insignificant risk. About $1.9 billion (56%) are assessed to be in moderate risk, making up the majority of the assets. The remaining, $146 million (4%) have been assessed as high risk. No assets have been assessed to be in the extreme risk category.

Although the cumulative risk analysis shows that virtually all assets (about 96%) are in moderate risk

or lower, the City continues to experience risk pressures. Through the risk analysis and consultation with service area representatives, the largest drivers of risk continue to be associated to capacity constraints, particularly at peak service periods and the condition of assets, particularly those in Very Poor condition. Asset categories which have identified these pressures will need to be monitored closely as demand for service continues to increase and assets age over time.

The results of the risk analysis are a direct result of the review and consultation of likelihood and consequence parameters by the City's subject matter experts. As a result, it reflects on the ground knowledge of staff who work closely with those assets they are responsible for. However, the City intends to continue to make improvements to the risk assessment in subsequent asset management plans to better align with desired levels of service, lifecycle costs and to help inform the decision-making process.

Figure 26 – Summary of Risk Assessment by Replacement Value (In Millions)
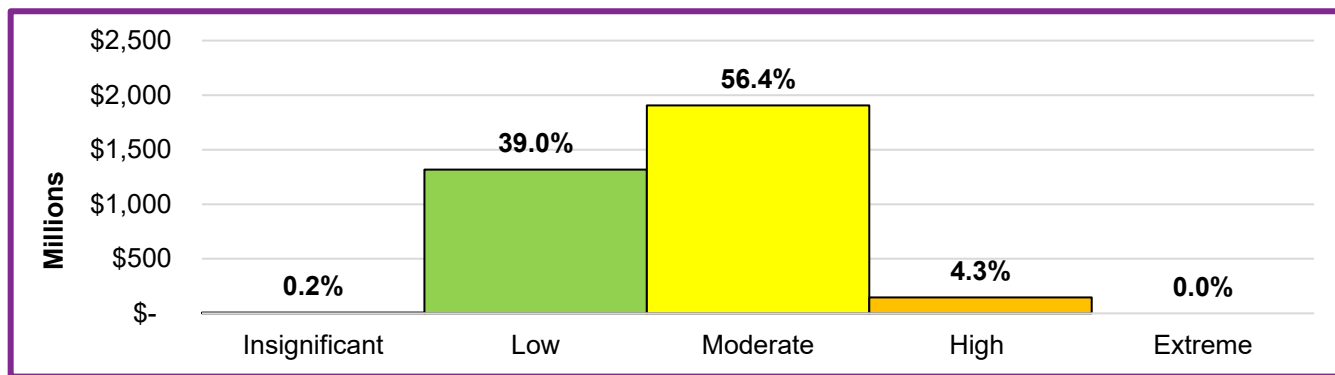
Figure 26 summarizes the $146 million in assets considered to be in the high-risk category. Of this amount the majority of assets of about $127.1 million (87%), is related to facilities. A further $16.1 million (11%) is related to IT assets. The remaining amount is associated with $1.7 million in Parks

assets (1%) and $1.1 million (1%) in transit.

A summary of the major drivers of risk associated to the $146 million of high-risk assets is outlined as follows, with additional details provided in each service area appendix:

- **Facilities** - The $127.1 million of assets within the high-risk category is associated to service areas that are already struggling with capacity, such as library and recreation services, which have resulted in a high probability of failure in capacity at peak demand periods. The needs of these service areas have been identified by the individual demand sections of this asset management plan. Furthermore, some corporate and parks facilities have been identified to have a lower Facility Condition Index, which has consequently raised their risk rating. The methodology for developing conditions for facilities is based on overall estimates of the condition, and it is expected that this methodology will be improved in the coming years.

- **Information Technology** - The high-risk assets, valued at about $16.1 million, include only the end user assets and the network infrastructure that have been identified to have a high probability of failure (P4 and P5) due to being in Poor and Very Poor condition. However, the asset condition has been calculated based on asset age and therefore the analysis may represent a higher risk score solely based on this approach.

- **Parks** - The high-risk assets represent less than 0.5% of total Parks assets, or $1.7 million. This is driven by trees with a moderate consequence (C3) of failure which also have a high probability of failure (P5) due to assets being in Very Poor condition.

- **Transit** - The $1.1 million of assets within this high-risk category is composed of specialty equipment, support fleet and some on-road facilities which have been classified as high probability of failure (P5). However, these assets utilize an age-based approach to determine conditions and many are beyond their useful life. Although not in a high risk category, the entire fleet of heavy-duty (or revenue) transit vehicles, with a value of about $495 million, are classified as moderate risk because despite being in good condition on average, the consequence of failure for these assets is high (C4).

Figure 27 – Summary of High-Risk Assets by Service Area (In Millions)

Parks, $1.7, 1%
Transit, $1.1, 1%
IT, $16.1, 11%
Facilities, $127.1, 87%
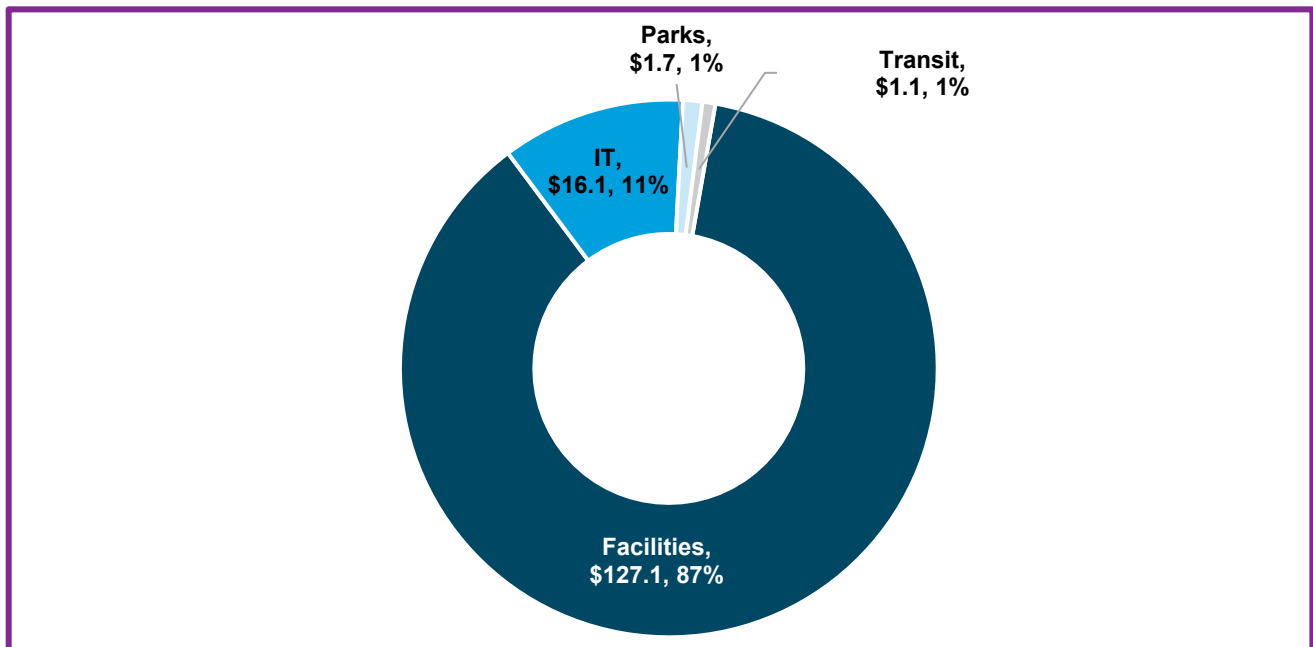
Risk Treatment

The core function of the Risk analysis is to provide the City with a risk profile of assets. Another component is to develop a guideline of risk treatments to manage or reduce asset risks to the City. Of particular importance is identifying what risk treatments are required in order to manage/reduce the risk of assets failing to provide desired levels of service. Different risk treatments will have varying effect on levels of service and it is important to ensure that the optimal risk treatments are utilized.

Based on the risk analysis and in consultation with service area representatives, the City has developed a high-level assessment of risk treatments for each service area. The risk treatment for each service area is outlined in each service area appendix. To summarize, as the main drivers of risk have been largely identified to be capacity constraints particularly for transit and facilities as well as higher likelihood of failure driven by age based conditions, the risk treatments suggest approaches that address these risk factors. These include increasing the available facility space for facilities such as libraries and recreation as well as prioritizing assets identified to be in Very Poor condition for consideration on the City's capital program.

The City also recognizes that the risk analysis, and risk treatment approach, will need to mature further over the coming years to realize its full effectiveness. The City will need to develop the risk analysis further to support the prioritization of lifecycle activities and costs, while integrating the approach to develop the desired levels of service based. This will allow the City to integrate a risk based approach to asset management by incorporating in the City's decision-making process. This approach will provide the additional advantage of being able to calculate residual risk as part of the overall RMS. Further discussion on planned improvements to the risk analysis can be found in the Monitoring & Improvement Plan section of this report.

Climate Change Integration

Corporate asset management in municipalities largely relates to the management of existing assets to keep them in a state of good repair while planning for future repair and/or replacement of their assets across all service areas. However, impacts of climate change are already being experienced in Canada and around the world. It is important for municipalities to implement climate consideration measures and plan for future climate change impacts to ensure the effective delivery of services, especially as it pertains to the maintenance of key City infrastructure. As per *O. Reg. 588/17 s3(5)*, municipalities must include a commitment in their asset management planning to address the vulnerabilities of climate change with respect to operations, levels of service and lifecycle management. There must also be consideration for anticipated costs, mitigation and adaptation approaches and disaster planning to meet all regulatory asset management requirements in Ontario. This section aims to build a foundation for future policies regarding climate change integration in the City.

According to the *Climate Trends and Future Projections in the Region of Peel* (2016) report, the City of Brampton is expected to experience warmer air temperatures, increased precipitation, and more extreme weather events in the future. Specific weather events in the City of Brampton include hotter, drier summers, warmer winters with increased precipitation, increased frequency and intensity of storms and increased intensity of extreme winds. These changes in the City's climate will likely lead to increased risks associated with flooding, heatwaves, infrastructure damage, risks to the health and safety of residents, and the alteration or loss of habitats.

Climate change mitigation and adaptation planning is an important step forward for municipalities. Therefore, the City is taking steps to integrate climate change considerations into its asset management planning practices.

Climate Change Planning in the City of Brampton

With a commitment to being a Green City, in 2019 Brampton City Council voted unanimously to declare a climate emergency while aiming to reduce greenhouse gas (GHG) emissions generated in the City by 80 per cent by 2050. Furthermore, the City of Brampton has undertaken several mitigation and adaptation strategies with respect to asset management.

Climate Change Mitigation Strategies

Climate change *mitigation* in the City of Brampton involves taking steps, through plans and policies, to reduce the City's overall carbon footprint and reduce harm to the environment as an attempt to limit future climate change events and their impacts on residents. Through the *Grow Green Environmental Master Plan* and other green initiatives such as *Community Energy and Emissions Reduction Plan* (CEERP), *Energy Emissions Management Plan*, *Sustainable Fleet Strategy*, and the *Brampton Transit Zero Emission Bus Implementation Strategy and Rollout Plan* (ZEB Strategy), the City already takes serious steps towards mitigating climate change. From an asset management perspective, mitigation strategies will have an effect on municipal levels of service and incur additional costs that need to be considered and planned proactively through the City's regular asset management practices.

Grow Green Environmental Master Plan (EMP)

The Brampton Grow Green Environmental Master Plan aims to conserve, enhance, and balance the City's natural and built environments to create a healthier, resilient, and environmentally sustainable City. It provides goals, actions, and targets for improving Brampton's environmental performance in the areas of People, Air, Water, Land, Energy, and Waste. It establishes objectives to reduce impacts on air quality, including decreasing GHG emissions and reducing energy consumption, and manage the impact of energy usage on the environment. The Plan sets out supportive actions, including the development of a community energy plan and a GHG emissions reduction strategy.[6]

Community Energy and Emissions Reduction Plan (CEERP)

The City has already begun to undertake steps towards climate change planning and integration into asset management. A key component of this preparation includes the City's CEERP, which is "an evidence-based, comprehensive plan to drive innovation, employment and economic development while achieving the City's environmental and climate change goals, along with its associated social benefits.[7] The plan targets the reduction of carbon emissions while planning for the consequences of potential climate change hazards. The CEERP combines efforts of the City, local utilities and community stakeholders to create a roadmap to improve energy efficiency, reduce GHG emissions, ensure energy security, create economic advantage and increase resilience to climate change. The plan details specific objectives and targets to 2041, including:

- Green Communities – Includes goals towards achieving near net-zero GHG emissions for new communities;

- Transportation Efficiency – Reducing average

[6] Grow Green Environmental Master Plan
[7] Community Energy and Emissions Reduction Planhttps://www.brampton.ca/EN/residents/GrowGreen/Pages/Community-Energy-and-Emissions-Reduction-Plan.aspx

trip length, increasing trips via walking, cycling and transit, and increased use of electric vehicles and vehicle efficiency;

- Home and Building Efficiency – Increasing efficiency of homes and buildings in the City (including water efficiency); and

- Green Infrastructure – Planting of a million trees by 2040, increased restoration of natural heritage system and integrate of natural assets into asset management.

When looking specifically at these initiatives, it is clear that asset management planning plays a key role in achieving these goals, whether it be through improving active transportation and transit infrastructure, building energy and water efficient City buildings, and the integration of natural assets into the asset management framework. By incorporating the initiatives of this plan into asset management planning through risk frameworks and levels of service, the City can better prepare for future potential events.

Energy Emissions Management Plan – A Zero Carbon Transition

The Energy Emissions Management plan is focused on reducing GHG emissions within the City's facilities. The mission of the Plan is "to meet the challenge of a zero carbon transition in alignment with provincial and federal emission targets". The plan sets out an interim target of achieving a 20% GHG emission reduction target by 2024 (over the 2010 baseline), as well as long-term goals of GHG emission reduction targets of 30% and 80% by 2030 and 2050, respectively. The plan details several actions to be undertaken at existing City facilities, ways to minimize energy emissions at new facilities

and steps to maximizing cost recovery in order to meet these interim and long-term targets.[8]

Sustainable Fleet Strategy

Prepared in August of 2021, the Sustainable Fleet Strategy provides a detailed analysis of the City's current fleet assets (City Support Fleet and Fire Engines) and includes proposed opportunities for fuel use and GHG reductions that are economically attainable and work towards the City's GHG emissions reduction target of 50% by 2041 compared to 2016 levels. In addition, the strategy provides a framework and action plan that models the potential solutions available to the City.[9] In 2023, the City ranked as a Top Green Fleet in the prestigious 2023 Green Fleet Awards competition, by the National Association of Fleet Administrators (NAFA) Fleet Management Association.[10]

Brampton Transit Zero Emission Bus Implementation Strategy and Rollout Plan (ZEB Strategy)

The City's inaugural ZEB Strategy conducted by the Canadian Urban Transit Research and Innovation Consortium provides technical and economic analyses and potential strategies to transition the current fleet of fossil fuel-based buses. This includes transitioning diesel and hybrid electric buses, to fully zero emissions battery electric buses (BEBs) or hydrogen fuel cell electric buses (FCEBs), or a combination of the two technologies. The ZEB Strategy builds on Brampton's commitment to environmental resilience and sustainability by enhancing energy and climate resilience. Additionally, the ZEB Strategy supports transit connectivity by providing a pathway towards adopting a sustainable all-electric zero emission bus

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[8] [Energy & Emissions Management Plan](#)
[9] [Sustainable Fleet Strategy](#)
[10] [Green Fleet Award News Release](#)

fleet as early as 2040: significantly reducing the City's GHG emissions and carbon footprint and protecting our environment for a sustainable future.

Climate Change Adaptation Strategies

Through climate change *adaptation* policies, the City will adjust its current weather and climate expectations and plan to reduce the impacts of Climate Change events on the City's existing infrastructure and levels of service. The City is currently undertaking various initiatives as part of its plans to climate change adaptation, including the Climate Change Adaptation Plan (CCAP), Green Infrastructure Standards and the Intensity-Duration-Frequency (IDF) Curve Update. The City works closely with conservation authorities to predict the extent of climate change impacts on flooding risk as well as defining the most vulnerable areas. Details on these projects are expanded below.

Climate Change Adaptation Plan (CCAP)

The Climate Change Adaptation Plan will be a 5-year plan that will move Brampton into becoming a climate-ready, resilient City. The Plan will help reduce our vulnerability to climate change through a series of recommended actions to ensure our communities are prepared for future climate impacts. It is intended to evaluate, guide, and integrate the diverse policies, programs, and activities of the City, conservation authority partners, and other stakeholders to ensure that our collective efforts are directed towards the long-term health and resilience of Brampton.

Green Infrastructure Standards

The City has undertaken works to continue the development of standards and specifications for the implementation, operating and maintenance of

green infrastructure in the City. This system helps to carry out the green initiatives outlined in other plans such as the CEERP. These standards accelerate the integration of Green Infrastructure with other stormwater management infrastructure to create a more sustainable and resilient stormwater system.

Intensity-Duration-Frequency (IDF) Curve Update

This on-going initiative will update the core criteria for design of municipal infrastructure which is based on the likelihood of occurrence of specific storm events (typically storms that will occur once in every 5 year or 10 years for sewer design, and 100 years for stormwater retention pond design). This update will expand the data set used for the statistical analysis to include all available data to the current period, and will incorporate the more extreme weather events of the last 20 years. The results of the analysis are anticipated to show expected increases in the magnitude of storm events, which would have implications for the sizing of municipal stormwater infrastructure during the design phase.

Climate Change Impacts on Level of Service

Through the 2021 Corporate AMP, a series of level of service metrics that introduce mitigation and adaptation planning for climate change in the City were introduced. To further enhance the analysis and the recommendations of the Corporate AMP, the SA AMP has reported on several climate change related initiatives. Tracking these performance measures allows the City to use the level of service framework to progress towards solutions, minimizing the impacts on residents and the services used by them daily.

Table 13 below provides a summary of the climate change related level of service measures which have been established through development of the SA AMP for each service area. It is expected that tracking of climate change related levels of service and identification of risk will continue over the coming years. Properly identifying the cost impacts of the various climate change related factors which may impact the City's ability to maintain the levels of service might be more advanced and achieved post 2025 and may need to be supplemented as the City's climate change adaptation and mitigation strategies evolve over time.

Table 13 – Climate Change Adaptation and Mitigation Levels of Service

CLOS Category	Customer LOS Measure	Technical LOS Category	Technical LOS Measure	Current Performance	Desired Target Performance
Facilities					
Function	Facilities are green and environmentally sustainable	Upgrade	Tonnes of GHG Emissions from City owned buildings. [Accounts for Tonne of GHG Emissions from immobile sources]	16,353	13,305 by 2030
Function	Electric Vehicle Charging Stations are Available to Provide Services	Upgrade	# of Charging Stations - Public and Staff accessible (excludes chargers for Transit and Fire Heavy Duty Vehicles)	63	86 by 2033
Transit					
Function	Transit licensed vehicles are green and environmentally sustainable	Upgrade	% of City owned Heavy Duty Transit Vehicles that are Hybrid or electric	30%	100% as early as 2040, and no later than 2050, subject to Council consideration of the ZEB Strategy and allied budget/funding requirements
Function	Transit Services are green and environmentally sustainable	Upgrade	GHG emissions in tonnes of eCO2 for Transit Buses	37,130 tCO2e	An estimated 95% emission reduction over 2019 levels, as early as 2040, and no later than 2050 (based on Brampton Transit ZEB Strategy, 2024) and subject to available funding to support fleet transition.
Function	Transit Services are green and environmentally sustainable	Upgrade	GHG emissions in tonnes of eCO2 for Transit support fleet (low and medium duty)	413 tCO2e	More than 80% reduction in GHG for overall city fleet except Transit buses (includes City support fleet, Transit support fleet and all Fire fleet) Transit buses excluded. (based on Sustainable Fleet Strategy 2021-2035)

CLOS Category	Customer LOS Measure	Technical LOS Category	Technical LOS Measure	Current Performance	Desired Target Performance
Information Technology					
Function	Brampton IT assets are environmentally sustainable and actively pursuing green initiatives	Disposal	Percentage of computer and related equipment disposed of in an environmentally friendly manner	100% of all equipment where feasible	100% of all equipment where feasible
Corporate Fleet					
Function	Fleet services are green and environmentally sustainable	Upgrade	GHG emissions in tonnes of eCO2 for Overall City Support Fleet (except Fire and Transit)	2663 (2019)	More than 80% reduction in GHG for overall city fleet except Transit buses (includes City support fleet, Transit support fleet and all Fire fleet)
Fire					
Function	Fire Fleet services are green and environmentally sustainable	Renewal	GHG emissions in tonnes of eCO2 for Fire Licensed Vehicles	775	50% reduction in GHG emissions by 2035 compared to 2019 baseline for Fire fleet (including heavy duty front line vehicles and support fleet (low and medium duty vehicles)
Parks					
Function	Trees and plants are sustainable and providing an enhanced environment	Upgrade	# of Trees Planted	7,300 (new and replacements)	7,000 City-paid trees planted annually (new and replacements) Vision 2040 Target: 1 million trees

Climate Change Risk

As part of the Risk Management Strategy developed through the Corporate AMP, a set of criteria was developed to assess the risks associated with climate change events and how these events may affect the level of service. To further enhance this understanding, and through this SA AMP process, a set of consultations were held with subject matter experts to understand the level of climate change risk.

Table 14 summarizes the results of the preliminary risk evaluation conducted with each service area for each asset class. In summary, the City's climate risk to levels of service can largely be classified in the moderate range meaning that there is limited exposure and adequate protection to ensure service levels are upheld in a climate event. That said, climate risks still remain and Table 14 outlines those potential risks at a high level. The City employs adaptation measures to ensure that impacts from

adverse weather is minimized and service disruptions are kept to a minimum.

This preliminary evaluation of the overall climate change associated risk is largely based on past climate change events and the impacts these events have had on the infrastructure. The City is currently working on a Climate Change Adaptation project which aims to further detail and categorize risks associated with current and future climate change impacts and prioritize adaptation strategies.

Table 14 – Climate Change Impacts by Service Area

Facilities
• With increasing frequency and intensity of extreme weather events such as freezing rain, ice storms, windstorms, intense rain, and extreme temperatures, the structural integrity of facility roofs may be compromised. Furthermore, HVAC and air-conditioning systems may face greater demands. This could potentially result in increased energy consumption and operational strain. • Increased climate-related wear and tear might also reduce the useful life of the asset components and accelerate the need for lifecycle interventions. • To address these challenges, the City is undertaking energy retrofits and upgrading its infrastructure to more modern standards.

Transit
• Transit Services could be impacted by freezing rain, ice storms and flooding. • Preliminary discussions have not identified immediate vulnerabilities. However, more intensive and frequent flooding events may affect roads condition which may in turn affect transit services. • Growing electrical transit fleet may be more susceptible to energy disruptions and may be more dependent on emergency energy supply.

Information Technology
• Due to increase in climate change related events such as of freezing rain, ice storms, flooding, windstorms and intense rain, IT infrastructure assets could be at higher risk, leading to servers, wireless and communication systems being out of service. • IT assets may also require increased emergency energy supply due to power outage events. • The City recognizes these potential challenges and will monitor the vulnerabilities over time to better prepare for and mitigate the risks as they arise.

City Support Fleet
• Fleet assets are primarily at risk of rain or freezing rain and extreme temperatures. These events could impact the components of fleet assets and may require increased maintenance or even replacement of the asset. • Fleet services may also be impacted indirectly if access to roads is affected due extreme weather events. • Growing electrical vehicle fleet may also be impacted due to energy disruptions and be more dependent on emergency energy supply. • The City recognizes these potential challenges and will monitor the vulnerabilities over time to better prepare for and mitigate the risks as they arise.

Fire

- Fire service assets are largely utilized for emergency work, therefore, they are heavily impacted by higher frequency and severity of climate change driven weather events.
- Fire services face higher demand due to increased calls for assistance during severe storms.
- Extreme weather patterns cause more rainfall events, flash floods, and soil erosion, exacerbating emergencies like flooding.
- Drought and Wildland Fires
    - o Drought in city natural resources and parks pose hazards.
    - o Fluctuating weather patterns bring unexpected temperature drops, necessitating immediate and potentially unsafe heating solutions.
    - o Increased frequency and severity of fires pose risks to firefighters and their availability.
    - o Climate change results in longer fire seasons, requiring fire services to be prepared for a larger portion of the year.
- Climate impacts can lead to higher costs for municipal services, including firefighting, equipment maintenance, replacement, and personnel training. Labour shortages further strain resources.
- The City acknowledges these challenges and plans to mitigate risks through financial planning, appropriate funding, training, and information sharing to adapt to the new realities of climate change.

Parks

- Park assets are particularly susceptible to climate change as they contain natural assets.
- Trees suffer damage from freezing rain and windstorm events, posing immediate concern. This may accelerate the need for tree replacement.
- Heat waves and hotter climates affect trees, flower beds, support the development of invasive species and plant diseases, and may also result in dry patches in sport fields. Heat waves reduce the utilization rates of outdoor amenities.
- High levels of rainfall affect access to playgrounds, amenities and other park services.
- The City acknowledges these challenges and plans to mitigate risks through financial planning, appropriate funding, training, and information sharing to adapt to the new realities of climate change.

Recreation

- Higher frequency and severity of climate change-driven weather events heavily impact outdoor activities.
- Indoor activities face challenges with heating and cooling requirements due to climate change events as well.
- Changes in seasonal patterns can result in disruption of outdoor recreational activities:
    - o Alteration in timing and availability of recreational activities.
    - o Shortening of winter sports seasons due to warmer winters.
    - o Health risks for individuals engaging in outdoor activities due to increased heatwaves and poor air quality.
- Recreation services with the help of other service areas with interdependent assets are prepared to plan for risks associated with extreme weather events through financial planning, information sharing, training, expanding programs and sports affected by climate change.

Cultural Services

- Performing arts related services could be disrupted by ice storms, windstorms and intense rain.
- May result in some minor scale back of services, however the disruption would mostly be localized.
- Weather events could impact the long-term wear and tear of public art assets and may require increased maintenance budgets.
- The City will continue to monitor the impacts of climate change on cultural assets and plan to mitigate these risks appropriately.

Library

- Print media collection could be damaged due to extreme rain events that cause flooding in library facilities.

Animal Services

- Equipment may not be affected directly by climate change, but it could be impacted due to the vulnerability of animal shelters.

Governance

Asset management governance can be defined as the manner in which the City allocates responsibilities and how it makes decisions when undertaking asset management activities. In this sense, the City is always looking to optimize its governance structure to effectively implement its asset management program while at the same time enabling asset management to be a sustainable and effective practice across the organization. The City's governance structure aligns with the following principles:

- Clear direction, leadership and organizational stability;

- Effective resource allocation, planning and management;

- Organizational cohesion across and within organizational layers and vertical business lines; and

- Ensures desired customer levels of service are met.

This section aims to outline existing structures and teams involved in the City's asset management practices. To achieve this, a set of tools are utilized to assess the governance structure including a Responsible, Accountable, Consulted and Informed matrix (RACI Matrix) and an asset interdependency analysis. Both of these tools are grounded in the development of the City's Corporate AMP.

Asset Hierarchy

Appendix K.2 provides detailed asset hierarchies for each service area considered under this plan, including a corporate-wide hierarchy for the City. These hierarchies are a key component of asset governance as they detail the City's asset structure and who is responsible for managing them. As the City continues to grow, these hierarchies will be adjusted to reflect the current state of infrastructure.

Roles & Responsibilities

Asset management resourcing requires that certain staff be leaders in asset management ensuring that communication, planning, and assessment of outcomes are being undertaken. The City's Strategic Asset Management Policy (SAMP) which came into effect on July 1st 2019 outlines the roles and responsibilities of the key City staff in advancing asset management practices.

To better assess the governance framework for asset management at a level that considers key asset management activities, the City undertook the use of a "RACI" matrix to map the roles and responsibilities of the resources that undertake asset management related work. RACI is short for "Responsible, Accountable, Consulted, and Informed." The RACI matrix is a tool that helps identify roles associated to certain tasks and the degree of involvement to complete those tasks. The roles are defined as follows:

- **Responsible:** The individual(s) responsible for the project delivery or completing the task.

- **Accountable:** The individual who is the approver or ultimately answerable for the correct and thorough completion of the deliverables. This individual ensures that the work is done effectively and makes final decisions.

- **Consulted:** Those whose opinions, knowledge, or coordination of tasks is required to support the development of the necessary deliverable or task (i.e. two-way knowledge exchange).

- **Informed:** Those who are kept up to date on progress or updated as a matter of courtesy but not required to contribute to the deliverable. Often these individuals are only notified at the completion of the task or deliverable.

To develop an effective RACI matrix, the analysis is also aligned with the key asset management activities that the City undertakes to meet the desired level of service. Figure 28 shows the matrix with the key asset management activities defined in the first column. Furthermore, the City groups who are stakeholders in the key asset management activities are outlined on the top row. Table 15 outlines a brief description of each of the groups. The RACI matrix has been developed at a high level to capture the level of involvement of each group in undertaking the key asset management activities that help meet the desired levels of service. In general, the set of responsibilities is similar across service areas therefore the matrix in Figure 28 is assumed to be a good representation of the general responsibilities across the City.

Table 15 – Key Stakeholder Groups

Name	Description
Council & Executive Leadership	Council members and board members who have overall responsibility for the organization's assets and strategic direction. Also includes Executive leadership made up of Commissioners and the Senior Leadership team who implement policies and initiatives set by Council, and ensure that departmental goals align with the City's overall objectives.
Operations Manager	Operations Manager ensures that assets are utilized efficiently, monitor performance metrics, coordinate maintenance activities, and address any operational issues that arise.
Maintenance Manager	Maintenance Managers focus on maintaining the physical condition and functionality of assets to prolong their lifespan and optimize performance.
Strategic Planners	Strategic planners develop long-term asset management strategies and plan to align asset management activities with organizational goals and objectives.
Finance Department	The finance department is typically involved in asset management activities such as budgeting, financial reporting, and cost analysis.
Internal Stakeholders (Other Departments)	Staff from other departments that are involved in asset management activities where independencies exist between the service areas.
External Stakeholders	These may include residents, vendors, regulatory agencies, and other external parties with an interest in or impact on the organization's assets.

Figure 28 – RACI Matrix

Key Asset Management Activities	Council and Executive Leadership	Operations Manager	Maintenance Manager	Strategic Planners	Finance Department	Internal Stakeholders (Other Departments)	External Stakeholders
Demand Management Planning • Assess current and future demands for assets and services to ensure alignment with organizational objectives and stakeholder needs. • Activities may include analyzing historical data, forecasting demand trends, conducting stakeholder consultations, and developing strategies to address demand fluctuations.	A	R	R	R	C	C	C
Asset Acquisition • Acquire new assets or upgrade existing ones to meet organizational requirements and objectives. • Activities may include conducting needs assessments, identifying suitable asset options, evaluating procurement methods, negotiating contracts, and overseeing asset procurement processes.	A	I/C	I/C	R	C	C/R	I
Inventory Management • Systematic tracking, recording, and management of all assets within the organization's inventory. • Activities may include establishing inventory control procedures, conducting asset audits, updating asset records, managing asset databases or systems, and ensuring compliance with regulatory requirements.	I	R/A	R/A	I	I	I/R	I
Operations and Maintenance • Day-to-day operations and routine maintenance activities necessary to ensure the optimal performance and reliability of assets. • Activities may include scheduling maintenance tasks, performing routine inspections, conducting repairs, optimizing asset utilization, and implementing preventive maintenance programs.	I	R/A	R/A	I	I	C/R	I
Renewal, Replacement and Disposal • Determine when assets need to be renewed, replaced, or disposed of based on factors such as age, condition, performance, and cost-effectiveness. • Activities may include conducting lifecycle assessments, developing asset renewal plans, procuring replacement assets, implementing asset disposal strategies, and adhering to environmental regulations.	A	C	C/R	R	C	C/R	I
Performance Monitoring • Monitor and evaluate asset performance against established performance indicators and targets. • Activities may include collecting performance data, analyzing performance metrics, generating performance reports, identifying areas for improvement, and implementing corrective actions as needed.	I	R	R	A	I	I	I
Financial Planning and Management • Develop and manage budgets, funding strategies, and financial resources related to asset management activities. • Activities may include budget forecasting, cost estimation, financial analysis, funding prioritization, resource allocation, and ensuring compliance with financial regulations.	A	C	C	R	R	C	C

Governance of Interdependent Service Areas

The City of Brampton provides a series of different services to its residents. Although many of the services provided by the City may be managed and provided independently from each other, certain service areas are codependent and coordinate asset management activities to utilize relevant expertise and achieve cost efficiencies. Currently, much of this coordination occurs at the departmental level and has largely remained undocumented as part of the City's overall asset management strategy. The City recognizes that development of a framework to identify asset interdependencies is important in order for the City to coordinate asset management activities across service areas in the most cost-effective manner.

Asset interdependency is defined as:

"The extent to which customer levels of service (capacity, functionality and quality) provided by one service area, are dependent on the lifecycle activities carried out by another service area."

In order to help identify the asset interdependencies across different service areas, an interdependence model was developed as part of the 2021 Corporate AMP. The model outlines and qualifies the relationship between customer levels of service and lifecycle activities across service areas. Customer levels of service are considered based on asset capacity, functionality and quality while lifecycle activities are considered for operations/maintenance, renewal, replacement and expansion activities. City staff undertook a qualitative review to identify if a dependence exists for each level of service attribute relative to the lifecycle activities across service areas. Furthermore, the City has also identified the potential asset relationships with external partners

particularly the Region of Peel as it relates to Regional roads, water, wastewater, and stormwater services. Table 16 summarizes the services areas that have been considered under this exercise.

Table 16 – Inter-Municipal Asset Interdependency

Area	Service Areas Considered
City of Brampton	• Transportation • Stormwater • Facilities • Transit • Information Technology • City Support Fleet • Fire • Parks • Recreation • Cultural Services • Library • Animal Services
Region of Peel	• Stormwater • Water • Wastewater • Roads

Note: Transportation and Stormwater assets are captured in their respective departmental plans but are included here for completeness. The services provided by the Region of Peel represent the Regional responsibility as of January 1 2024.

The dependence of levels of service to other service area lifecycle activities were assessed based on a scoring system out of 12 points. A score of 12/12 would indicate a high asset dependence where a score on the lower end of the spectrum, closer to 1/12, would indicate low asset dependence. The scoring system was derived qualitatively with consideration to some key factors:

• Where justifiable and interdependence is more obvious, the relationship between service areas is considered to be strongly dependent. Dependence exists where it is understood there is a need for capital coordination and/or an SLA (Service Level Agreement) between the service

areas that clearly states the services required and the desired levels of service.

- Avoiding indirect interdependencies, such as risk events, other infrastructure external to the City such as utility infrastructure or phone lines, and hypothetical scenarios. This maintains the analysis focused on direct implications to the City asset management practices.

- Where interdependency is not obvious, it would be assumed that the relationship between service areas is lower.

The interdependence is then assessed on a qualitative basis based on the 12 point scoring system. Table 17 outlines a summary of the scoring system. A score greater than 66% (out of 12) indicates a strong dependence, indicated by a darker colour. Lighter colours indicate weaker dependence. A not applicable category is assigned in comparison of service areas with themselves, as this comparison does not add value to the analysis.

Table 17 – Interdependence Assessment Parameters

Colour Code	Description	% of Interdependence (out of 12)
	Strong Dependence	>66%
	Moderate Dependence	34%-66%
	Low Dependence	1%-33%
	No Dependence	0%
	Not Applicable	Not Applicable

Note: Not applicable applies to comparisons of service areas with themselves which are excluded.

Figure 29 summarizes the key results of the qualitative asset interdependency analysis that was undertaken. There are a number of service areas where strong interdependency exists between the lifecycle activities and the levels of service provided by another service area.

To optimize service delivery in Brampton, it's crucial to address these interdependencies among its service areas. This would include prioritizing identification of critical interdependencies, establishing effective communication channels, fostering collaboration and joint planning, enhancing data sharing and integration, developing SLAs, and implementing robust monitoring and evaluation mechanisms. By following these best practices, the City can streamline operations, allocate resources effectively, and improve service delivery to residents and stakeholders.

Figure 29 – Asset Interdependence Matrix

Dependence Matrix	City Infrastructure (Technical Levels of Service)												Regional Infrastructure (Technical Levels of Service)		
	Transportation	Stormwater	Facilities	Transit	Corporate Information Technology	Fleet	Fire Services	Parks	Recreation	Cultural Services	Brampton Library	Animal Services	Storm Water (Regional)	Water / Wastewater (Regional)	Roads (Regional)
Transportation															
Stormwater															
Facilities															
Transit															
Corporate Information Technology															
Fleet															
Fire Services															
Parks															
Recreation															
Cultural Services															
Brampton Library															
Animal Services															
Storm Water (Regional)															
Water / Wastewater (Regional)															
Roads (Regional)															

City Services (Lifecycle Activities)

Regional Services (Lifecycle Activities)

Asset Information Management

The City's asset management programs are continuously evolving. The City has deemed it necessary to develop an Asset Information Management Strategy (AIMS) to help guide the development of a framework to identify the asset specific data needs and devise a guiding plan to achieve asset data objectives to 2025 and beyond. AIMS is has been developed as a key tool to help achieve the regulatory requirements of *O. Reg. 588/17*.

The AIMS was initially developed in early 2021 and further updated through Corporate AMP. The AIMS is intended to be a high-level guiding plan that establishes the vision for asset data management at the City and also helps to assess the current position in terms of data and systems to support asset management. The intent is to help the City improve the maturity of its asset information management processes associated with the broader asset management practices. Although AIMS was intended to be reviewed again in conjunction with updates to the Corporate AMP, it was deemed reasonable to advance the AIMS process as part of Service Area AMP development.

AIMS Framework

The AIMS framework has been developed to assist City staff in planning and tracking the action items to elevate the maturity of asset information and increase confidence in decision making. Furthermore, an internal tracker tool (AIMS Tracker) was introduced and utilized, which tracks the progress of key AIMS objectives as it relates to each of the 10 service areas, including expected completion timing and progression status.

The AIMS framework considers specific asset management tools which are critical to informing the City's asset decision making process. AIMS strives to advance the City's asset-related data management practices through the adoption of baseline data standards in the key areas outlined in the table below.

Table 18 – AIMS Framework

Review Categories	Review Sub-Categories	Asset Data Type
Holistic Review	HR 1.1 Active Holistic Review of Business Requirements.	Relevant business requirement elements
Data Management	DM 1.1 Formalize asset data governance including interdependent assets. DM 1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	Governance Collection Protocols
State of Local Infrastructure (SOLI)	SOI 1.1 Improve on inventory data and attributes. SOI 1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions.	Asset Identification Asset Location Asset Classification Physical Attribute Condition
Levels of Service	LOS 1.1 Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data. LOS 1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance. LOS 1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for Service Area AMPs.	Performance Predictive

Review Categories	Review Sub-Categories	Asset Data Type
Lifecycle Strategies	LC 1.1 Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework. LC 1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement. LC 1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities.	Risk/Criticality Work Management Lifecycle
Financing Strategies	FS 1.1 Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information. FS 1.2 Develop requirements and explore use of current systems for decision support. FS 1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	Asset Values Expenditure Forecasts Funding Sources Funding Gaps

Based on the AIMS framework provided, the City undertook an assessment of existing data related to all service areas, including a review of data types, categories and subcategories. The assessment looked at how each information category has progressed and how the information is governed in each of the 10 service areas reported in this AMP. The results of these assessments are tabulated and included in the Appendix A through Appendix J. As part of the assessment exercise, each major action category advancement is captured through a high-level status indicator (Not Started, Minimally Completed, Significantly Completed, and Completed). This assessment was based on a qualitative evaluation informed by staff's opinion and judgement. The assessment also identified the immediate next steps required to improve the service area's maturity in each sub-category.

Organizational Improvements and DSS

The City of Brampton is committed to continuous improvement and adoption of appropriate Asset Management planning and investment practices, including increased transparency and shortening lag between information and decision. As our asset management processes mature, it informs more comprehensive, principled, and evidence-based decision-making practice around lifecycle spending on assets. These processes and practices are in support of the delivery of services to the City's residents and businesses.

The City has recently engaged a consultant to investigate the best direction and assess the viability of employing an overarching Decision Support Solution (DSS) in order to improve Asset

Management planning and investment decisions. The consultant will review the City's current Asset Management environment, practices and existing systems to identify gaps, benchmark against other similar municipalities, and prepare a business case for a DSS, if it is recommended. Such systems can help the City build an environment that is capable of linking various asset management activities within the organization in a holistic and systematic manner. One of the objectives for this step is to ensure that the City will not end up with an additional software solution but rather utilize an existing solution that may be capable of such use and is set up and connected in an optimal way to serve the needs. As noted, the organizational preference is utilization of the existing solutions however, in the process, if a solution is to be recommended, an undisputable benefit analysis and a business case is expected as a deliverable. This will ensure the proposed solution meets the City's objectives without overburdening the corporation's IT infrastructure. Ultimately, DSS is intended to support evidence-based decision-making practice for lifecycle spending on assets to better serve its residents and businesses.

Communication

The City of Brampton's Corporate and Service Area AMPs are intended to help stakeholders (City employees, City Council, and the community) by educating, informing and engaging with them on all aspects of the City's asset management program. This Service Area AMP provides timely, comparable and accurate information regarding the City's assets to facilitate decision making on a service area basis.

Consistent with the Corporate AMP, strategically planned communication can support this plan and the City's corporate asset management program by ensuring that stakeholders are aware and understand the need for asset management and its purpose. This also provides opportunities to participate and collaborate in the program, engage and support program requirements, define program goals and have access to information, interactive tools, and capabilities to support asset management requirements.

The Corporate AMP outlined a proposed Communications Strategy (CS) to establish an integrated approach that enabled clear, accurate and timely communication with stakeholders to inform, educate and bring awareness (and potential engagement) to key messaging related to the City's asset management program. This service area plan is aligned with the proposed strategy found in the Corporate AMP. This section aims to provide a high-level overview of the strategy presented in Corporate AMP, the full details of which can be referenced in the 2021 report.

The purpose of the CS is to ensure that:

- Communication approaches are integrated within the City's asset management program;

- Information is easily accessible, relevant, timely and accurate;

- The release of key public documents, such as SOLI reports and Service Area AMP, is communicated using the City's main methods of delivery for each audience;

- Ensure contributions of stakeholders are regularly acknowledged; and

- Achieve a level of public engagement that meets the requirements of O Reg 588/17.

Stakeholder Engagement Strategy

Every citizen of, and business within, the City of Brampton is a stakeholder in the City's corporate asset management program, however, it is the degree of stakeholder engagement that is different across groups within the City. In keeping with the principles of the previous section, it is therefore important to identify who stakeholders are and what their level of engagement should be. This exercise is important in developing the materials that are to be communicated to each group and identifying what level of consultation is required from them.

The City, through both the 2021 Corporate AMP and 2024 Service Area AMP processes, has developed communication channels across the organization and with the public to ensure all key stakeholders are involved and informed in the asset management inputs and results. Some of the key concepts employed to achieve this include the following:

- **Advisory Committee (Steering Committee)** – A core group within the City, including CAMO and senior leadership that oversee the entire asset management process to ensure quality and delivery of results to the public.

- **Focus Groups (Working Group)** – Comprised of CAMO and service area representatives that provide the data and subject matter expert knowledge that informs the asset management plan.

- **Training Sessions/Capacity Building Sessions** – Typically conducted by CAMO for

the focus groups to provide information on the core concepts of asset management planning and provide an outline as to the information and data requirements for individual service areas.

- **One-on-One Meetings** – Held amongst the focus groups to gather information and data, discuss results, and inform decision making throughout the asset management process.

- **Regular Updates & Reports** – To keep Council and the public informed, regular updates asset management plans are developed to report on the results of the information gathered and analysis performed.

- **Public Meetings & Workshops** – To best communicate results to Council and the public, public meetings and workshops are held to provide information on the key concepts of asset management planning, the results of recent reporting, and future steps to continue to meet legislative requirements.

- **Online Platforms** – Includes the City's website, social media, and media relations that provide updates and reporting on asset management that is accessible to the public.

- **Surveys and Feedback Mechanisms** – A tool for engaging the public for their input on asset management planning topics such as condition of assets, proposed levels of service, etc.

Table 19 is a generalized list of the external and internal groups that have some level of interest and/or influence in the development and outcomes of the asset management program, as well as the applicable key tools for engagement.

Table 19 – Key Stakeholders

Stakeholders	Key Engagement Tools
City Council	• Regular Updates & Reports • Public Meetings & Workshops
CAMO	• Advisory Committee • Focus Groups • Training Sessions/Capacity Building Sessions • One-on-One Meetings • Regular Updates & Reports • Public Meetings & Workshops
City Staff **(Includes Service Area SMEs and CLT)**	• Advisory Committee • Focus Groups • Training Sessions/Capacity Building Sessions • One-on-One Meetings • Regular Updates & Reports • Public Meetings & Workshops
Upper Levels of Government	• Regular Updates & Reports
Taxpayers	• Online Platforms • Surveys & Feedback Mechanisms

Key Tools of the Communication Strategy

The corporate asset management program entails several working tools that will necessitate different levels of communication.

Table 20 outlines a summary of each of these tools and deliverables that were developed as part of the communication strategy.

Table 20 – Key Tools of the Communication Strategy

Key Tools	Description
Communications Activity Flow Chart	• Typical process begins with the information needed to develop the analysis required for reporting (including reports or formal presentations) • Involves oversight and review but service area representatives and CAMO to make revisions as needed, followed by review by senior leadership • Final product would move to Council and communicated through the City's appropriate channels (website, media relations, social media, etc.) • If required, consultation with residents is undertaken at the final stages of the communications process • Unique and specific communication flows should be developed for different deliverables and in consultation with Communication Services who can provide advice on the most appropriate approach • Full flow chart can be found in Figure 4-16 of the Corporate AMP
Corporate Asset Management Plan (Corporate AMP)	• Provides a framework for asset management • Includes summary reports for each service areas and recommendations/action plans for future investment decisions • Composed of several elements, including State of the Local Infrastructure, Levels of Service, Asset Management Strategies, Financing Strategy, and other supporting elements (Communication Strategy, Climate Change Integration, Demand Management, etc.) • Update every 5 years
Service Area Asset Management Plans (Service Area AMP)	• Provide framework for asset management at a service area level to provide greater focus to each service area's unique challenges • Includes the development of a risk assessment and risk framework at the service area level that will be brought to Council for overall approval and direction • Update every 5 years with annual review of asset management planning process
State of the Local Infrastructure (SOLI) Annual Report	• Annual report that summarizes the assets owned and operated by the City, including information on their replacement value, condition and age • Reported under a "Responsibility" view to provide reader with a report that outlines how the assets are managed • Most recently completed for assets as of 2022 (and included as part of this plan) • Update annually

Key Tools	Description
Levels of Service Tracker	• A framework was developed as part of the 2021 Corporate AMP (and maintained under this Service Area AMP) to track current levels of service • Service Area AMP also considers proposed levels of service for each service area (which were determined based on consultation with individual service areas)
City of Brampton Website Asset Management Section	• The City's website has a dedicated section related to all asset management plans and relevant information (https://www.brampton.ca/EN/City-Hall/Corporate-Asset-Management/Pages/Welcome.aspx) • It is recommended that the City continue to post relevant reports and information to the website to ensure communication with the public

Public Engagement Plan

O.Reg. 588/17 emphasizes the need for engaging the public on asset management matters. The City's key objective has always been to keep the public informed on City decisions and continue to ensure a level of transparency as expected from taxpayers. Therefore, consistent with the regulation and current City practices as outlined in the 2021 Corporate AMP, a specific public engagement process will continue to be developed. The City outlined a maturity scale for public engagement through the 2021 Corporate AMP (Table 4-22) that included the following:

• Basic Maturity – The public can attend meetings where asset management is being discussed or approved

• Intermediate Maturity – The public can attend meetings where asset management is being discussed or approved and provide input on some aspects

• Advanced Maturity – The public is invited to provide input into asset management during initial stages of development

The 2021 Corporate AMP provides several key objectives that will allow the City to achieve an "Advanced" maturity level. Reaching this objective is expected to take several years and a phased approach will ensure incremental improvements in meeting the requirements of *O.Reg. 588/17*. Further details can be found in Table 4-23 of the Corporate AMP.

Lifecycle Management

The City of Brampton strives to provide its services at the highest quality possible while managing risk at the lowest possible cost. To achieve this, the City undertakes different actions to ensure that the City's infrastructure assets continue to provide appropriate levels of service. Furthermore, the associated lifecycle activities and costs to maintain current levels of service have been prepared based on the parameters of *O.Reg. 588/17.*

Lifecycle Management Activities

The City of Brampton is a multi-service delivery organization with responsibility for managing assets across various service areas throughout the City. Currently each service area largely undertakes the management of these assets utilizing service area specific lifecycle strategies to provide services. These lifecycle strategies are captured through a mix of service area policies/formal procedures or informal procedures that may not be necessarily documented. These lifecycle strategies formulate the actions required to continue to provide services.

Consistent with the recommendations of the City's Corporate AMP and regulatory requirements, the

City's asset-related work has been categorized into six lifecycle action categories:

- Non-infrastructure solutions;
- Operations & Maintenance;
- Renewal & Rehabilitation;
- Replacement;
- Disposal/Removal; and
- Expansion/Upgrade.

These categories represent the actions undertaken throughout the lifecycle of assets to ensure assets provide desired levels of service. The lifecycle activities are developed consistent with the *Building Together – Guide for Municipal Asset Management Plans* and the *MFOA Asset Management Framework*, both of which are outlined in this section.

Non-Infrastructure Solutions

Non-infrastructure solutions refer to actions or policies that can lower costs or extend asset life but is not directly related to work on the asset itself. The City currently undertakes various types of non-infrastructure solutions on an ongoing basis, which includes initiatives like integrated infrastructure planning and co-ordination with other levels of government, demand management through the growth-planning process or continual improvements to City processes to achieve cost efficiencies. The current practice is that the costs associated with the City's non-infrastructure solutions are largely captured through the City's capital budget on an annual basis.

Operations & Maintenance Activities (O&M)

These activities refer to servicing assets on a regular basis in order to fully realize the original service potential of the assets. Operations and maintenance typically will not extend the life of an asset or add to its value, however, not performing regular maintenance may reduce an asset's useful life and/or levels of service. O&M therefore ensures the asset continues to deliver defined levels of services.

Currently the City's asset O&M requirements and required resources are assessed and prioritized based on:

- Carrying out legislated operations and maintenance activities at or above minimum standards to ensure safety and environmental sustainability in accordance with appropriate regulations;

- Conducting routine and preventative

maintenance activities to ensure preservation of existing assets; and

- Analysis of current operations and maintenance contracts and known historical costs of delivering defined levels of services to forecast future operations and maintenance costs.

Best asset management practices include an appropriate mix of maintenance management techniques, so the assets do not fail prematurely and continue to perform well throughout their estimated useful life. These maintenance management techniques include:

- **Preventative Maintenance** which are regularly scheduled activities, completed while the asset is still in an "operational" condition. The purpose of preventative maintenance is to ensure the asset remains in service throughout its design life. The City currently captures preventative maintenance costs through the capital budget.

- **Demand Maintenance** (also known as "Reactive") are physical repairs to an asset that has broken down or has ceased to function as intended. The repair generally reinstates the asset to a normal operating condition but does not extend the life of the asset. These types of repairs are expected as assets age and are part of the overall lifecycle management to keep the asset operational for as long as physically and economically viable. It is important to consider that when the repair costs begin to escalate as the asset ages, and it becomes not feasible to operate, the asset may be best suited to be renewed or replaced. Finally, the City currently captures demand maintenance costs through the operating budget.

Renewal/Rehabilitation Activities

Renewal/rehabilitation activities are mostly associated to significant repairs designed to extend the life of an asset. These types of activities are typically undertaken at key points in the lifecycle of an asset to ensure the asset reaches or exceeds its designed useful life. The City undertakes renewal activities throughout the asset portfolio in order to realize the full potential life of the asset, with the decisions on the scope and timing of renewal largely based on assessing the conditions of assets. Costs associated to renewal activities are captured through the City's capital budget and are largely embedded in individual project costs.

Of note is that renewal and maintenance activities are strongly linked; maintenance strategies can hasten or delay the need for renewals, and if renewals are deferred, maintenance needs will often increase. However, there is a distinction between both types of activities in that the magnitude and frequency of the works are different. Renewal activities are generally considered capital in nature while O&M are considered ongoing activities on assets. O&M therefore ensures that assets continue to operate properly throughout its useful life, while renewals can extend the asset's useful life. The distinction is also clear for costs, where renewal activities are considered to be capital related and maintenance costs are set through accounting policies and standard operating procedures, and are considered operating costs. The City's operating and capital budgets are mainly consistent with this distinction.

Replacement Activities

Replacement activities are expected to occur once an asset has reached the end of its useful life and renewal/rehabilitation or maintenance is no longer an option. Replacement activities are usually considered to be capital in nature as they are usually accounted as fixed costs. The City undertakes replacement activities on a regular basis particularly for assets with smaller design lives or rolling stock such as vehicles, furniture or equipment. The City captures all its replacement activity costs through the annual capital budget.

Disposal/Removal Activities

Disposal/removal activities are actions associated with removing and disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed. Typically, most assets will have one-time associated disposal costs. The City ensures that the disposal of assets is done in an environmentally safe manner. Some assets such as vehicles may be disposed through sales on the used vehicle market or recycled. The City's disposal costs are generally captured through the capital budget and are included as part of individual project costs, typically when replacement or major renewal takes place.

Expansion and Upgrade Activities

These are planned activities to extend or expand municipal services to accommodate various demands (growth, legislative, environmental etc.). As development occurs, additional infrastructure is required to service new residents and businesses. This would include constructing new recreation facility space, new fire vehicles to accommodate new high-density developments or developing new parkland and outdoor spaces for example. Expansion activities are net new additions to the City's asset portfolio. Costs associated to expansion activities are typically capital in nature and are related to acquisition of assets or construction costs of infrastructure. The City captures expansion activity costs through the capital budget.

Also included in this activity would be asset upgrades which could be related to enhancing the functionality of the assets to meet the City's desired performance targets. An example would be upgrading/retrofitting the City's existing Transit facilities to accommodate new electric transit fleet.

Lifecycle Activities and Cost Assessment Approach

As part of the Service Area AMP process, the project team conducted meetings with each service area to assess the existing lifecycle activities, their costs and the lifecycle requirements to sustain the current levels of service and meet the proposed levels of service.   These meetings aimed to achieve the following objectives:

- **Operating and Maintenance (O&M) Analysis:** Workshops were held to determine operating

and maintenance costs directly associated with asset management activities within each service area's budget. This included a breakdown of costs by key asset categories. Discussions also focused on understanding the specific activities and actions undertaken by each service area to maintain their assets effectively.

- **Capital Renewal and Replacement Needs:** The assessment sought to gain insights into the capital renewal and replacement requirements necessary to sustain the current levels of service for each service area's assets.

- **Expansion and Upgrade Requirements:** Consideration was given to the expansion and upgrade needs required to meet the City's Proposed Level of Service, taking into account long-term sustainability and operational implications.

Operating and Maintenance (O&M) Analysis

Upon review of the City's 2023 budget, workshops were held with each service area to identify which cost centres directly relate to asset maintenance. The activities and costs directly related to asset management were the only items captured in this analysis. For example, the salaries and benefits for transit staff to operate the busses were excluded, while the costs associated with maintaining the fleet were captured. The detailed review of the City's operating budget aimed to achieve two outcomes:

- Determine the portion of operating and maintenance costs attributed to asset maintenance activities within each service area; and

- Allocate these costs to specific asset classes to better understand expenditure drivers.

Table 21 below illustrates that the average annual required operating and maintenance expenditure need to maintain the City's assets amounts to about $158.7 million. A couple of important considerations:

- Over 70% of the maintenance expenditures are related to salaries, wages and benefits and contracted services. For example, the City contracts out a number of services to maintain assets: facility maintenance (cleaning, small repair work, IT servicing and programming, grass cutting, etc.)

- Preventative maintenance costs, totaling about $4.8 million, are now captured in the capital budget. In this Service Area AMP, these preventative maintenance costs are represented in the operating and maintenance component of the lifecycle cost analysis to maintain consistency with general asset management practices.

Table 21 – Annual O&M Related Expenditures (In Thousands)

Service Area	Required Annual O&M Expenditure
Facilities	$19,624
Transit	$39,561
Information Technology	$33,456
Fleet	$6,522
Fire	$5,205
Parks	$30,612
Recreation	$19,598
Cultural Services	$735
Library	$3,275
Animal Services	$116
Total	**$158,703**

Capital Renewal & Replacement Needs

After reviewing the City's 2023 capital budget and 5-year capital plan (2023-2027)[11], the project team met with each service area to identify projects for maintaining the City's existing infrastructure to ensure current service levels are met. Careful consideration was given to the assets tied to existing capital asset renewal, replacement and non-infrastructure solution activities. The acquisition of new assets or asset upgrades have been captured separately as those projects can be funded from the range of different growth funding tools (development charges, community benefit charges and Parkland CIL) and are required to meet the City's target levels of service.

Leveraging the calculated age and condition-based capital investment requirements alongside the City's 5-year capital budget, the project team engaged in discussions with service areas to determine appropriate capital spending needs for each asset class. Notably, the City didn't solely rely on calculated requirements but actively engaged in a review of three distinct methods to better understand the capital infrastructure investment needs.

- **Run to Failure:** This approach considers the risk of failure in the investment model. It recognizes that assets with low consequence of failure are unlikely to require a planned replacement activity and assumes that the existing budget allocation is satisfactory. In these instances, the analysis typically relies upon the existing budget allocation and service area input as opposed to the calculated

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[11] Transit Services is the only exception as the 2024-2028 capital plan used to inform the analysis as the 2024 budget year captured significant changes from 2023.

investment needs derived from asset inventories and replacement schedules.

- **Age-Based:** This method identifies the assets that are required to be replaced at the end of its useful life to maintain current levels of service. In such cases, the analysis relies upon the detailed asset inventories which informed the 2022 SOLI Report.

- **Inspection-Based or Benchmark Approach:** This approach extends the asset's useful life based on actual inspection, benchmarking with comparable municipalities and/or subject matter expert's opinion. In this approach, the analysis relies upon the detailed asset inventories which informed the 2022 SOLI Report but modified to recalculate the needs.

Table 22 below provides an overview of the total annual capital investment requirements, by service area, which are included in the analysis. The total annual capital investment required to maintain current levels of service amounts to $133.4 Million, with approximately 45% allocated to Transit Services. A couple of important considerations:

- The capital investment requirements noted in the table below exclude the capital responsibilities associated with both Transportation and Stormwater infrastructure as these services are not included in this Service Area AMP. However, these requirements will be included in the financing strategy in the subsequent chapter.

- The renewal needs are most relevant for facilities and transit fleet. For transit fleet, those assets would undergo scheduled renewal plans and strategies to extend the life of buses to 18 years (from 12 years).

Table 22 – Average Annual Capital Investment Requirements (In Thousands)

Service Area	Renewal	Replacement	Non-Infrastructure Solutions	Total
Facilities	$21,222	$6,685	$2,256	$30,163
Transit	$12,883	$46,088	$220	$59,191
Information Technology	-	$5,861	-	$5,861
Fleet	-	$6,019	-	$6,019
Fire	-	$5,392	$20	$5,412
Parks	-	$20,865	$160	$21,025
Recreation	$168	$2,907	$190	$3,265
Cultural Services	$214	$330	-	$544
Library	-	$1,965	-	$1,965
Animal Services	-	$6	-	$6
Total	**$34,487**	**$96,117**	**$2,846**	**$133,449**

Please note, the activities and actions employed by each service area are detailed in the Lifecycle Cost Appendix Furthermore the capital investment requirements, by asset class, within each service area is also outlined in the appendices of this report.

Expansion and Upgrade Requirements

In consultation with the Service area, the expansion and capital asset upgrade related activities were identified. The City of Brampton levies development charges to recover the capital costs associated with new development. The City is currently in the process of updating its current DC By-laws which is supported by a new 2024 DC Background Study. This study outlines the infrastructure needs to manage the City's planned growth for Library, Parks and Recreation, Fire, By-law Enforcement and Transit Services over the next 10 years. Under the Development Charges Act (DCA), certain costs for eligible services are deemed ineligible for recovery from development charges. These ineligible costs generally include items that are not directly related to the provision or expansion of services and facilities required to accommodate growth resulting from new development. In addition, there are also certain services which would not be eligible for development charges recovery, this generally includes assets related to Cultural Services, Information Technology (IT), and Corporate Facilities. The report has drawn upon recent capital budget data from 2023 to 2027 for services not eligible for development charges, along with input from staff and other relevant capital planning documents. Based on the 2024 Development Charges Study, the first round capital expenditures required over the next decade for expansion and asset upgrade activities are estimated at approximately $9.0 billion. Of this total, the majority is related to new Transit infrastructure including major projects such as the LRT Extension and BRT along Bovaird/Airport corridor. The figure below illustrates the quantum of expansion and upgrade related activities needed to support growth over the long-term.

Figure 30 – Average Annual Asset Acquisition vs. Upgrade Costs (In Millions)
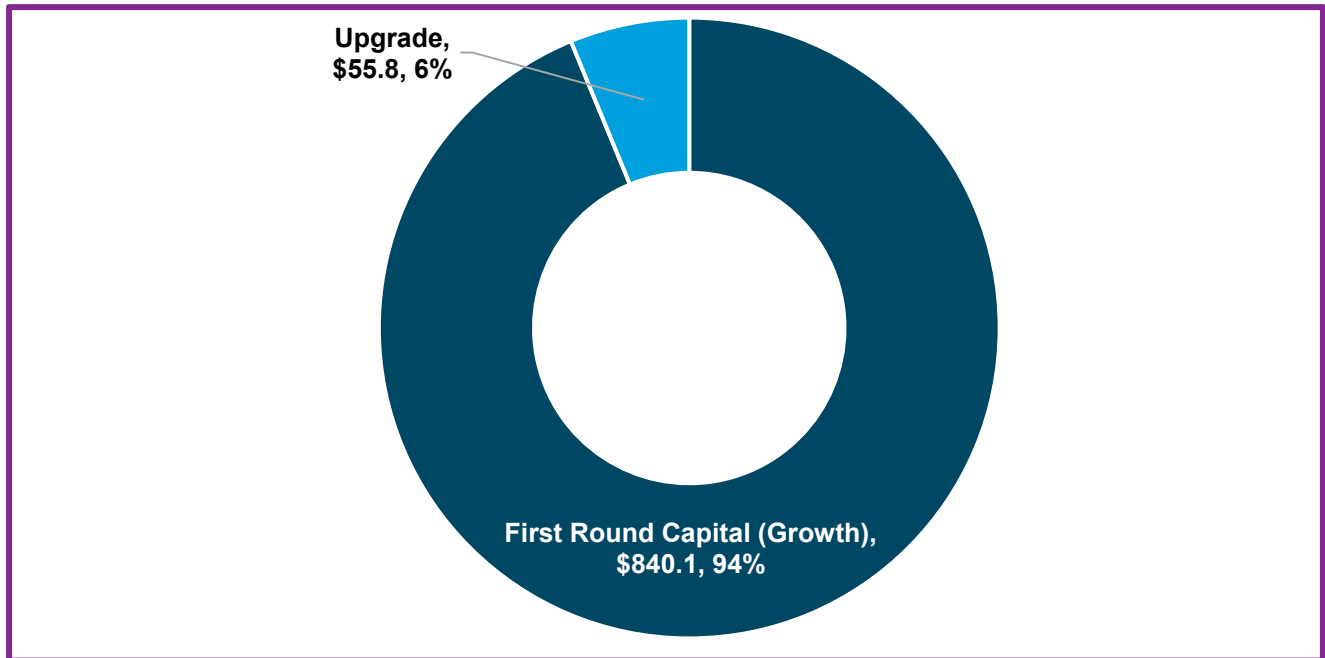
Source: Estimated using: 2024 DC Study capital programs, recent capital budgets information from 2023 – 2027 (for non-DC eligible services) and discussions with staff using other available capital planning documents.

Although most of this infrastructure will attract funding from development charges or direct developer contributions, the infrastructure will become the responsibility of the City to operate, maintain, repair and ultimately replace in the future. As a result, this level of capital related activity will increase the City's asset management related obligations to support these assets. The table below provides an overview of the calculated annual asset management contribution for the 2023-2032

expansion and upgrade related infrastructure needs identified in this Service Area Plan.

The operating impact of the capital program is calculated to reach about $132.0 million per annum, with asset replacement and renewal needs of the acquired and upgraded assets projected to reach $105.4 million per annum at the end of the 10-year period.

Table 23 – Operating and Capital Annual Impact at Year 10 (In Thousands)

Service Area	CAPEX Impact	OPEX Impact
Facilities	$33,113.3	$13,359.2
Transit	$61,904.0	$79,397.9
Information Technology	$213.9	$7,333.0
Fleet	$1,392.4	$1,543.2
Fire	$2,396.9	$1,917.1
Parks	$3,649.9	$6,633.0
Recreation	$207.3	$16,492.4
Cultural Services	-	$257.5
Library	$2,461.2	$5,045.4
Animal Services	-	-
Total	**$105,338.8**	**$131,978.7**

A few important considerations:

- The estimated costs of initial capital expansion activities encompass the full lifecycle asset management requirements for acquiring new assets over the planning period;

- Asset repair and replacement expenditures would largely be required beyond the planning period. The City can plan for these activities as development progresses and non-growth revenues materialize. Notably, the capital impacts generally represent a non-cash expense in this planning period;

- The operating and capital impacts of higher-order transit projects are excluded from the analysis as the asset ownership and cost responsibilities would be shared with other agencies; and

- The projected operating impacts by year 10 for

Transit is attributed to the acquisition of heavy duty buses during the planning period.

The calculated annual funding provisions should be considered within the context of the City's projected growth. Over the next 10 years, the City's population is expected to increase by approximately 148,000 with about 52,500 new households over the same period. Furthermore, the City will add about 53,000 employees accounting for about 3.7 million square metres of additional non-residential building space[12].

This growth will have the effect of increasing the overall assessment base, leading to additional user fee and charge revenues that can offset the capital asset provisions required to replace the anticipated infrastructure.

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[12] Source: City of Brampton 2024 Development Charges Background Study.

Financing Strategy

In line with the asset management best practices, the City's Service Area Asset Management Plan has been developed to address the pressing need for strategic financial planning. Similar to other municipalities within the province, our analysis reveals disparity between current financial allocations and the projected capital investment needs over the next decade. This section outlines the forecasted funding requirements for asset management for the period 2023 to 2032. Additionally, it underscores key strategies aimed at bridging this funding gap efficiently.

Expenditure Forecast

Building upon the comprehensive analysis detailed in the lifecycle chapter, which outlined the various lifecycle activities and their associated operational and capital needs, this section delves deeper into the expenditure forecast. The project team has conducted an in-depth analysis of the financial requirements essential for maintaining current levels of service and meeting proposed levels of service. This analysis not only underscores the financial commitments needed to achieve the best value from the City's assets but also highlights the strategic financial planning necessary to support the community's evolving needs.

Current Levels of Service

The assessment of current levels of service is intrinsically linked to the condition and functionality of existing assets within our community. As the City aims to maintain current levels of service, it's imperative to understand the associated investment requirements.

Following a robust consultation program with each service area, the project team sought to gain a better understanding of the lifecycle activities required to maintain current levels of service. While this analysis does not include Transportation and Stormwater services directly, insights from respective asset management plans, the 2022 State of the Local Infrastructure Report, and service-specific discussions to support the full lifecycle cost model.

To provide understanding of the distribution of expenditure across service areas and lifecycle activities, the following table outlines the annual average values of lifecycle requirements by service area.

Table 24 – Average Annual Investment Requirements from 2023 to 2032 (In Millions)

Service Area	O&M	Renewal	Replacement	Non-Infrastructure Solutions	Total
Transportation	$75.3	$53.2	$78.7	$0.5	$207.8
Transit	$39.6	$12.9	$46.1	$0.2	$98.8
Parks	$30.6	-	$20.9	$0.2	$51.6
Facilities	$19.6	$21.2	$6.7	$2.3	$49.8
Information Technology	$33.5	-	$5.9	-	$39.3
Stormwater	$5.2	$8.1	$13.4	$0.1	$26.7
Recreation	$19.6	$0.2	$2.9	$0.2	$22.9
Fleet	$6.5	-	$6.0	-	$12.5
Fire	$5.2	-	$5.4	$0.02	$10.6
Cultural	$0.7	$0.2	$0.3	-	$1.3
Library	$3.3	-	$2.0	-	$5.2
Animal Services	$0.1	-	$0.01	-	$0.1
Total	$239.1	$95.8	$188.2	$3.5	$526.6

The pie chart below further illustrates the distribution of the cumulative expenditure across service areas over the next 10 years.

Figure 31 – Total Expenditures across Service Areas (2023-2032 – In Millions)

Total Value = $5.3 Billion
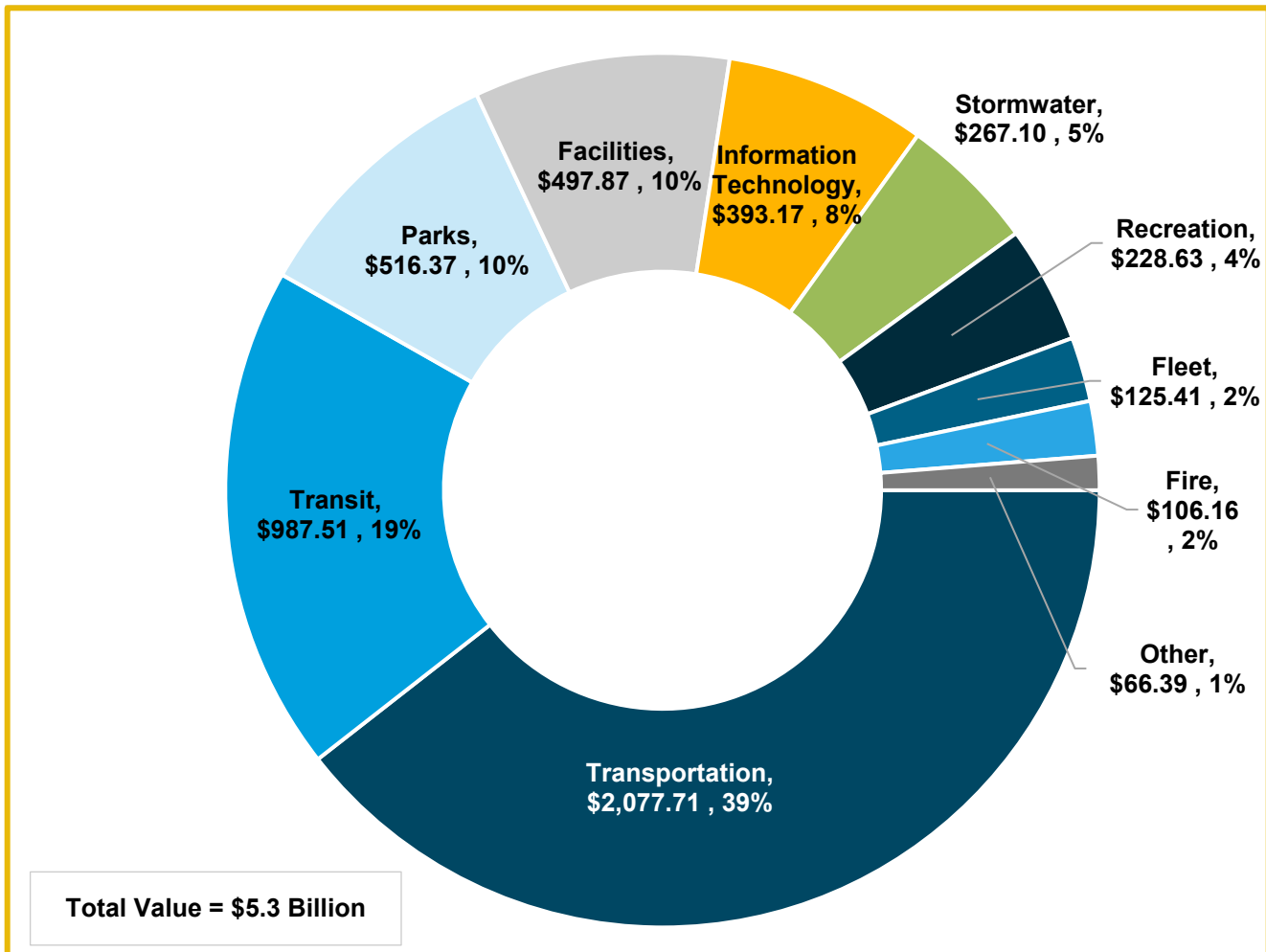
1. For the calculation of annual needs, earning rates are assumed to equal inflation, consistent with a straight-line approach
2: All cost estimates are in 2023 dollars
3: Other includes: Culture, Library and Animal Services
4. All lifecycle activities considered, including Capital (replacement, rehabilitation and disposal), O&M and Non-Infrastructure Solutions
5. Includes Stormwater and Transportation assets not forming part of this AMP

A few key observations from the analysis:

- Transportation services represents the most significant share of the total 10-year needs accounting for 40%, or $2.1 billion, of the total $5.3 billion need.

- The cumulative investment needs over the 10-year period for IT services is higher than the entire replacement value of existing IT assets (valued at $162.4 million as identified in the

State of the Local Infrastructure section) as IT infrastructure is replaced more frequently with higher turnover rates compared to other assets with a longer useful life. Furthermore, a significant share of IT lifecycle costs is attributed to maintaining the asset to ensure it performs to meet the expected Level of Service. These routine maintenance activity expenses are captured in the operating budget.

- A similar observation can be made with Transit, as the investment needs over the 10-year period amount to $988 million, which is second to the cumulative needs for Transportation services despite Transit having a replacement value significantly lower than transportation service assets. This is because Transit fleet is required to be replaced more frequently with higher turnover rates and requires frequent and significant mid-life refurbishments costs to ensure proper service delivery.

- Conversely, despite stormwater services representing nearly 20% of the total City asset replacement value, the full lifecycle costs represent a proportionately smaller share of the total as the linear storm sewer network has a longer design life estimated at 100 years allowing for ample time to save for replacement. The City has undertaken a financing strategy study (e.g. Stormwater Rate Study) to quantify the operating, capital renewal and rehabilitation needs that yield a more accurate representation of the total asset requirements relative to the user fees generated each year. It is expected that the financing strategy for stormwater services will be reviewed in 2024/2025.

Proposed Levels of Service

This AMP identifies expansion and upgrade-related activities to accommodate growth and upgrade existing assets and provides an understanding of the associated financial implications. Capital costs associated with new developments are recovered through Development Charge Levies. The City is in the process of updating its current DC By-laws which is supported by a new 2024 DC Background Study outlining infrastructure needs to manage the City's planned growth for Transportation, Library, Parks and Recreation, Fire, By-law Enforcement and Transit Services over the next 10 years. Please note that Transportation and Stormwater Services were not reviewed as part of this project. Consequently, the capital projects pertaining to these services were omitted from the growth and expansion assessments.

Based on the 2024 Development Charges Study, recent budgets, and service area discussions, initial capital expenditures over the next decade for expansion and asset upgrade activities are estimated at approximately $9.0 billion. While approximately 70% of this total relates to new Transit infrastructure, significant investments are also allocated to Facilities and Parks assets. The table below provides an overview of the calculated total expansion and upgrade-related infrastructure needs over the next 10 years and their implications on annual operating and capital budget at the end of the period.

Table 25 – Growth/Upgrade Expenditures & Their Impacts

Service Area	2023 - 2032			Annual Impact (By Year 10)	
	Growth ($M)	Upgrade ($M)	Total ($M)	CAPEX Impact ($M)	OPEX Impact ($M)
Facilities	$198.2	$33.9	$232.1	$33.1	$13.4
Transit	$615.5	$18.5	$634.0	$61.9	$79.4
Information Technology	$2.8	$0.3	$3.0	$0.2	$7.3
Fleet	$1.1	$0.2	$1.3	$1.4	$1.5
Fire	$1.9	$1.3	$3.1	$2.4	$1.9
Parks	$16.9	-	$16.9	$3.6	$6.6
Recreation	$0.6	-	$0.6	$0.2	$16.5
Cultural Services	$0.4	-	$0.4	-	$0.3
Library	$2.8	$1.7	$4.5	$2.5	$5.0
Animal Services	-	-	-	-	-
Total	**$840.1**	**$55.8**	**$895.9**	**$105.3**	**$132.0**

The operating and capital implications of the growth and upgrade activities are included in the above table to ensure the City has an understanding of the investment required, once the asset is in-service, to meet the proposed level of services. The proposed level of service component is a new element added to this plan to comply with the last stage of the regulation, but it is expected that this component will continue to be reviewed post-2025 in an effort to better align the level of service targets with the cost analysis.

Funding Forecast

The City uses a wide range of funding and financing tools to address the identified capital requirements. Generally, the type of capital project aligns to its funding source. In this regard, growth related projects receive most of their funding through development charges; replacement projects are predominantly funded through tax-based contributions (primarily through Reserve 4 and Reserve 119) and Federal Gas Tax funding.

Funding Sources

Development Charges

Development charges represent a significant funding source for growth-related projects. These charges are levied on developers to offset the costs associated with increased infrastructure demands stemming from new developments.

Special Purpose Levies

The City of Brampton has implemented infrastructure specific tax levies as a means to increase capital reserves for funding capital infrastructure needs. These reserves set aside funds for future spending. This practice can help to stabilize any annual fluctuations in funding requirements, plan for any major long-term infrastructure investments, and prevent sudden spikes in property taxes, rates, and debt levels.

As of year-end 2022, about $677 million in reserve and reserve funds were on hand, although, a portion

of this includes obligatory funds (such as DCs) which the City is collecting for specific purposes. Reserve 4 represents the City's most utilized asset replacement reserve, with net tax contributions of $82.7 million in 2023.

Corporate Debt

Tax and rate supported external debt can be used to fund growth, replacement, and enhancement projects. For equity purposes, debt is best used for projects that provide benefits over a longer timeframe so that the burden of capital cost is distributed between the current and future taxpayers.

The City's current practice of not using tax supported debt for replacement projects has been continued in the Service Area AMP model. This would allow the City to use its debt capacity for strategic projects that increase service levels or growth-related projects that are ineligible for development charges funding.

User Fees

Although the largest revenue source continues to be property taxes, user fees continue to be an important revenue source. Based on the 2023 budget, user fees and service charges amount to about $247.1 million dollars making up just under 30% of the total revenue, making it the second biggest source of revenues. The City will need to continue to rely on user fees particularly for service areas where they serve as key revenues sources, such as transit and stormwater services. The financing strategy includes an assumption on future reliance on user fees to fund operations and

maintenance expenditures for various service areas including revenues associated with the stormwater service charge.

Grants

The City continues to rely on upper level government grants to undertake major capital works. The most reliable source of grant funding for the City continues to be gas tax. In 2023, Brampton received about $34.5 million in federal gas tax funds with the expectation of continued funding in the future[13]. Furthermore, the City is expecting that additional grant funding from upper levels of government will be required to undertake key infrastructure repair works and major future transit expansion projects particularly for initiatives such as the LRT. Recognizing the need for ongoing grant funding to drive capital initiatives in future, the City aims to maximize available grant funding opportunities and continue to use upper levels of government as key partners to maintain assets in the most sustainable way.

For non-growth related transit capital, the analysis assumes the City will receive about $12 million per annum to fund the repair and replacement of transit infrastructure through the new Permanent Public Transit Fund[14]. While the exact amount allocated to Brampton, or any other community, has yet to be finalized, an assumed stream of funds is estimated based on previous funding commitments and the City's population and ridership base relative to other transit communities in Canada. The financing strategy does not include any other grant funding assumptions outside of gas taxes, the new transit

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[13] 2024 Federal Gas Tax Allocation is $36.1 million.
[14] The Federal Government recently introduced the first permanent public transit fund of $3 billion annually starting in 2026-27. The funding will be based on three distinct streams: Baseline Capital, Metro-Region Agreements and Direct Delivery. For the City to access this new funding stream, it would require the municipality to take some actions that are tied to unlocking housing supply. At this stage the City is exploring options to meet this requirement.

stream and known grants from secured applications.

Funding Projections

Over the past number of years, the City's tax base capital contributions have consistently represented the largest share of capital funding sources for asset repair and replacement activities. Figure 32 summarizes the breakdown of assumed revenues, for the purposes of this Service Area AMP, over the planning period focusing on maintaining current levels of service (excludes growth revenue assumptions). For a detailed overview of the key revenue assumptions used to support the Service Area AMP, please refer to Appendix K.3. A projection of annual costs, both operating and capital, to maintain existing service levels is also outlined in Appendix K.3 of this report.

Figure 32 – Funding Sources to Maintain Current Levels of Service (10-Year Total)
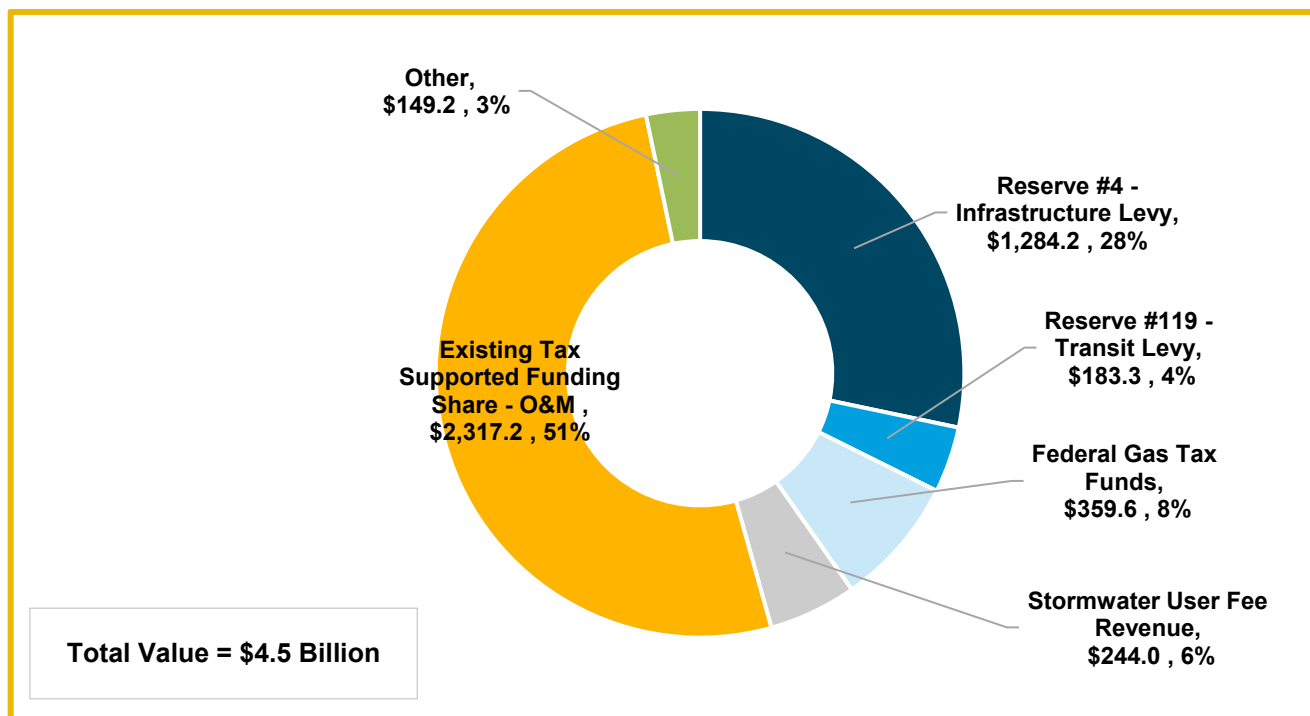
Note: Other represents available reserves (for asset management) and estimated share of transit funding stream for replacement projects. Figure excludes any considerations for additional growth revenues.

A few key observations:

- The dedicated levies are the most significant source of revenue generated and directed to capital asset repair and replacement activities, amounting to $1.5 billion. This includes:

  - $1.3 billion associated with the dedicated 2% infrastructure levy, assuming the City reinstates the annual 2% levy increases in 2025;

- $183 million derived from the dedicated 1% transit levy. Please note that the share included only represents the portion allocated to asset replacement activities while the remaining funds generated are used to help fund new Transit infrastructure.

- The revenue projections assume the dedicated 2% and 1% levy on the previous year's taxation revenue, added to the existing contribution base each year.

- About $2.3 billion relates to existing taxation and user fee support for capital related O&M costs (set equal to costs for existing assets).

- A further $360 million is estimated for Federal Gas Tax funding which is assumed to be allocated to capital asset repair and replacement projects over the planning period.

Other key considerations:

- Unspent funds in capital replacement work in progress accounts have not been considered;

- Federal gas tax funds are assumed to be allocated toward asset replacement projects;

- Provincial gas taxes have not been considered, assuming these funds will continue to be used for transit operating costs;

- Assumed funding from the new Permanent Transit Stream starting in 2026; and

- Other unconfirmed one-time Federal and Provincial grants have not been considered.

Projected Infrastructure Gap

Based on the preceding an analysis, the infrastructure gap has been calculated for existing assets to maintain current levels of service. In addition, the expansion and asset upgrade infrastructure requirements to meet the City's proposed levels of service is illustrated independently. For the purposes of this analysis, the infrastructure gap is defined as the difference between the total full-life cycle costs and the projected revenues over the 10-year period.

Existing Assets

After thorough analysis, a notional infrastructure gap of $334 million is identified (Figure 33) for existing assets after the additional revenues generated from new growth are considered into the calculation. These additional revenues are assumed to be prioritized for existing assets, although, the specific allocations will be determined though future budgets as growth occurs.

| Unfunded Gap $0.33 Billion |
| Projected Growth Revenue $0.40 Billion [1] |
| Total Expenditures $5.27 Billion |
| Total Revenues $4.54 Billion |
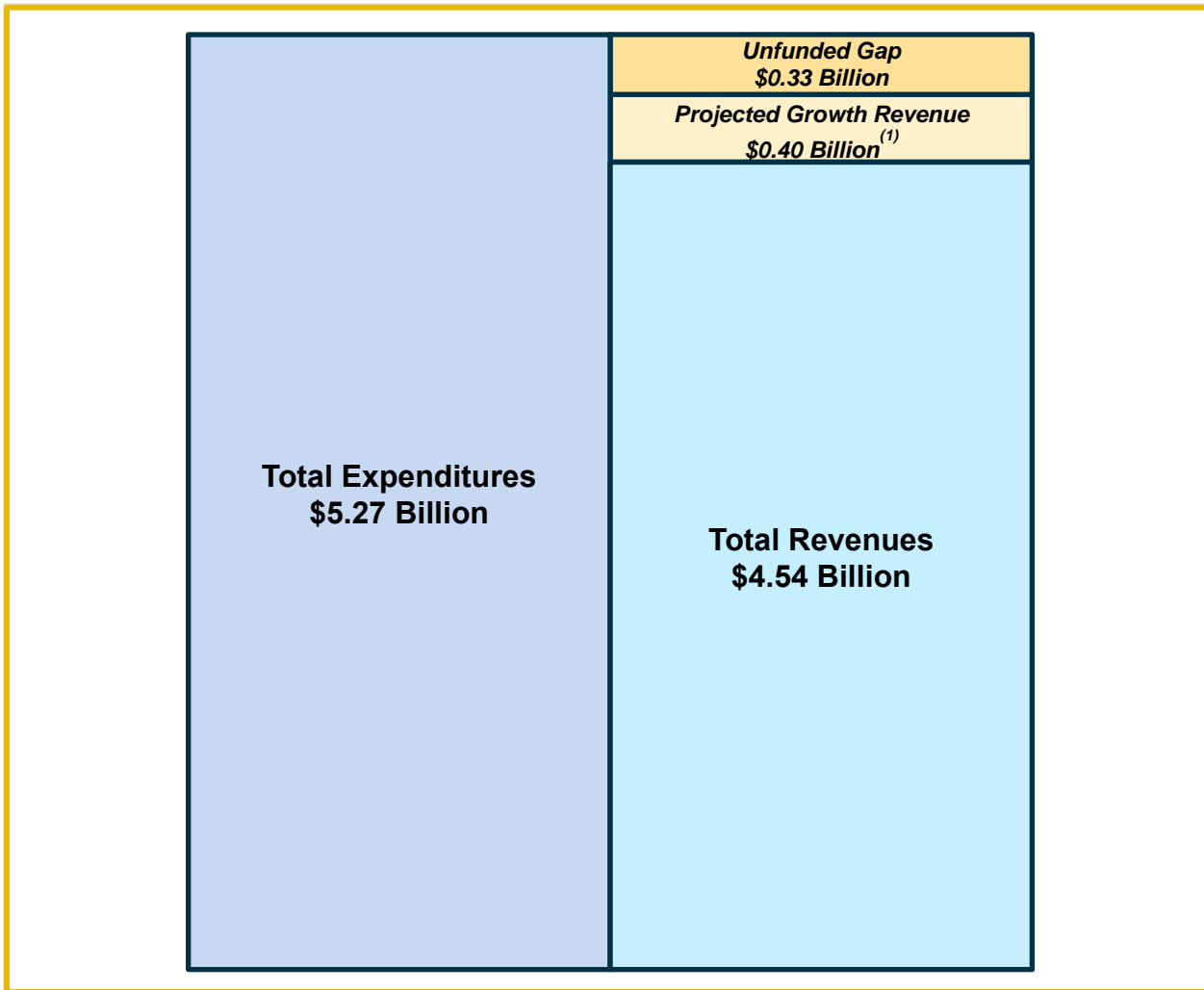
Note: Values have been rounded
(1) Projected Growth Revenue from assessment growth, increases in Federal Gas Tax allocation with population change, increase in special purpose levies and stormwater fees. Excludes DC revenue to fund first round capital.

The chart above displays the following information:

Total Expenditures (Full-Life Cycle Costs): Represents the total full-lifecycle costs required to maintain the City's existing assets throughout their useful life including the provisions for asset repair and replacement, which could occur beyond the 10-year period.

Total Revenues: Represents the total projected revenues based on existing funding commitments over the 10-year period.

- **Projected Growth Revenues:** Revenues anticipated from new growth, assumed to be used towards existing assets, which is generally consistent with the City's existing budget practice. The additional growth revenues are assumed from assessment growth, increases in Federal Gas Tax and Permanent Transit funding stream allocations (with population and ridership changes over the ten-year period), increases in special purpose levies and stormwater fees. Growth revenues are assumed to equal $395 million over the ten-year period. Importantly, despite the City

being poised for growth over the next 10-year, the rate of growth will determine the timing of expense incurred and revenues received.

Acquired/Upgraded Assets

A similar cost analysis has been prepared for expansion and capital asset upgrade related activities that have been quantified in this plan to meet proposed levels of service. It's important to note that Transportation and Stormwater Services are not included in this analysis. Separate projects will be initiated to assess the proposed levels of services for these essential services. This approach is aimed at meeting the phased requirements of *O.Reg. 588/17* for core assets.

The total estimated capital cost of $9.0 billion represents the required investment to meet the proposed levels of services in the City[16]. Of this total, the majority is related to new Transit infrastructure with additional significant investments in Facilities and Parks assets. Key projects include:

- $5.6 Billion allocated to Higher-order Transit Projects (LRT Extension – tunnel alignment, new BRT routes along Queen Street, Steels corridor and Bovaird/Airport corridor);

- 280 new busses (combination of 60ft Diesel and 40ft Hybrid);

- New Facility Construction (Community Centers, Fire Stations, Works Yards, Libraries, Electrification of Transit Facilities, new Animal Shelter); and

- Development of Sport fields and parkland.

In order to fund the capital costs identified, at least 80% is anticipated to be funded from upper levels of government and development charges. If the City does not receive any grant funding for those projects, the current level of service would not be impacted in the short-term.

The capital requirements to meet the proposed levels of services are required to meet the growth targets outlined in the Brampton Plan which is predicated on a more significant rate of development than observed in recent years. If the growth doesn't occur as planned, these key capital projects would likely be deferred until the growth materializes.

Approaches to Closing the Funding Gap

This information illustrated above emphasizes the need for the City to continue the utilization of these funding programs to maintain existing service levels over the long-term. However, as the City's asset management program further advances, it can be expected that the cost analysis be improved to better reflect asset risks, levels of service and a more fulsome understanding of the condition of the City's infrastructure. The table below outlines various strategies available to the City in order to close the gap. The strategies combine both qualitative data improvements and other financial solutions.

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[15] 2024 Contribution from Dedicated 2% Infrastructure Levy = $83.3 Million plus 2024 Contribution from 1% Transit Levy = $14.9 Million
[16] Source of projects is primarily derived from the 2024 Development Charges Background Study.

Table 26 – Approaches to Closing the Funding Gap

Strategy	Approach
Maintain 2% Infrastructure Levy	To continue bridging the funding gap and improve financial sustainability, existing infrastructure levy dedicated towards asset management should be maintained and monitor the revenues derived.
Maintain 1% Transit Levy	The City of Brampton has placed great importance on creating a reliable and well-operated transit system, as it is vital to a thriving City. Having a strong transit infrastructure is important to reducing road congestion, attracting businesses and investments and helping to connect people and jobs. Implementing this levy should be continued, which will help strengthen new services, but it will also ensure existing transit assets are well maintained.
Improved Data Quality	As the City matures its asset management practices, improving data quality across service areas will help to achieve a proper assessment of the condition of assets. Further, some assets are currently assessed on an age-based approach that does not necessarily reflect the actual condition of the asset. Improved lifecycle cost data will facilitate evidence-based decision making and support in achieving lowest lifecycle costing through prioritization of repair and replacement activities.
Levels of Service Measures	As part of the Service Area AMP, levels of services measures by service area have been established. Tracking LOS measures, may identify areas where funding needs could be recalibrated based on performance.
Assessing Risk Tolerance Level	Through this AMP standardized risk framework for asset classes has been applied and asset categories presenting higher risk were identified, as well as measures to address the risks. Further detailed risk analysis including defining risk tolerance level for individual asset classes will help to further refine prioritization of the investment needs and levels of service. Although not always desirable, it may be possible to accept a higher degree of asset risk at the City to help lower ongoing asset costs. An example may less frequent inspection of assets with lower criticality.
Seek Funding Support from Upper Levels of Government	The City of Brampton is demonstrating a significant commitment to asset management and developing a set of renewal practices to ensure that services are delivered in the most cost-efficient manner. Despite the efforts, upper level of government support is required to supplement the City's practices to balance affordability. For long-term financial planning and accurately assessing the infrastructure gap, it is equally important that upper level government funding is stable and predictable.
Explore Public Private Partnership opportunities (P3)	Through P3s, the City can access additional funding, share project risks, and introduce innovative financing structures. Private sector involvement also brings efficiency, innovation, and lifecycle management to infrastructure projects, while facilitating the transfer of expertise to the City.
Continued Project Co-ordination with Region of Peel and Utility Companies	In exploring opportunities with the Region and Utility service providers, overall cost efficiencies may be achieved during linear asset rehabilitation and replacement (e.g. storm sewers, roads, bridges, culverts) by better aligning capital ventures.

Monitoring & Improvement Plan

Continuous improvement is a fundamental aspect of municipal asset management, reflecting the City's ongoing commitment to optimize the performance, efficiency and sustainability of infrastructure assets over time. This process involves systematically identifying areas for enhancement, implementing changes, monitoring outcomes, and adjusting strategies based on feedback and new insights. The goal of the municipal asset management planning regulation (O. Reg. 588/17) is to promote municipalities to take incremental steps to maximize benefits, manage risk and provide satisfactory levels of service to the public in a cost-effective manner.

By establishing the Corporate Asset Management Office (CAMO), the City has initiated the proper steps towards the meeting the requirements of *O. Reg. 588/17* and achieve the following goals and objectives.

- Manage assets based on the principles of sustainability, continuous improvement, and simplicity;

- Enable the integration of corporate priorities within decision making for infrastructure asset management;

- Provide reliable data with the integrity to meet or surpass regulatory demands;

- Enable clear, accurate reporting in a timely manner; and

- Enable robust, repeatable, and defensible decision-making with regard to asset interventions.

With each iteration, the CAMO team has continuously built upon prior phases and efforts towards development of a comprehensive Asset Management Plan, ensuring all regulatory deadlines are met at each stage. This plan is a direct result of the initiatives that were underway during the creation of the 2021 Corporate AMP. The intent is to meet the regulated requirements of developing current and proposed levels of service for all non-core assets.

In the creation of this Service Area Asset Management Plan, the City has also taken steps to improve the availability, completeness, and accuracy of asset data which forms the foundation of the analysis undertaken as part of this plan. These improvements have increased the confidence ratings of the data used to develop this plan and will facilitate the work required to update the asset management reporting in the future.

As part of the 2021 Corporate AMP, the City's asset management practices were assessed using a variety of tools including ISO 55000 and workshops with City staff from various service areas. The results of these assessments were summarized in a table that outlined the key areas for improvement, the actions required, and the intended outcomes. This section aimed to create a plan to guide the City towards best practices in asset management. Many of the objectives outlined in this section have been achieved, while other objectives that were low in priority or set forth on longer timelines are still underway. Additionally, as part of the creation of this Service Area Asset Management Plan, the need for further improvements have been identified and are documented in this chapter, displaying the City's commitment towards achieving best practices through continuous improvements.

Improvement Plan

Improvement initiatives have been identified that will enhance the effectiveness of the City's asset management program. The following table provides recommended improvement initiatives with associated priorities and timelines. Service Area specific improvement initiatives are included in the appendices.

Table 27 – Improvement Plan Initiatives

Area of Improvement	Action	Outcome	Timeline	Priority	Comments
Levels of Service	Align AMP and structure of budgeting process	Easier to determine lifecycle costs specific to TLOS measures	Medium	Medium	Adjusting the budget process following the release of this AMP will require effort from all departments to ensure delineation of different lifecycle activities, resulting in more accurate cost estimations for achieving LOS targets.
	More clearly delineate costs related to achieving PLOS	Support for active decision making rather than reporting of decisions already made	Medium	Medium	
Risk Management Strategy	Incorporate risk into investment decision making	Confirmation through SOLI of the effectiveness of RMS outcomes to address funding needs and LOS deficiencies	Medium	Medium	Risk Likelihood and Consequence evaluated by Asset Category within SOLI Models – Expected to be incorporated in future SOLI updates.
Climate Change Integration	Further development of mitigation and adaptation strategies into asset management	Further understanding of climate change risks on City's delivery of services and support informed prioritization of strategies.	Short	High	While the risks have been discussed in the Climate Change chapter, mitigation strategies and estimated costs will be included in future AMP iterations.
Governance	Build capacity of staff through hiring practices and training	Staff is more knowledgeable throughout on existing and future asset management practices – will create efficiencies and limit knowledge gap.	Long	Medium	Requires longer timeframe before capacity of staff is significantly expanded.
	Further refinement of asset interdependencies	Capitalize on efficiencies across service areas and asset types	Long	High	While some progress has been actualized, a longer timeframe is required to further refine asset interdependencies.
	Improved knowledge transfer through robust asset management processes and systems	Better insight and coordinated effort at the service area level to better inform future iterations of this report	Long	Medium	Longer timeframe is required to be receive larger buy-in from staff.

Area of Improvement	Action	Outcome	Timeline	Priority	Comments
Asset Information	Further the objectives of the AIMS through SA AMPs (includes co-ordination with service area representatives to understand their data and data management needs)	More informed decision making at the departmental level	Medium	Medium	While some progress has been actualized, a longer timeframe is required to completely achieve AIMS objectives.
	Development of a financial decision support solution	Financial efficiencies achieved across the organization	Medium	Low	
Lifecycle Management Strategy	Full integration of LMS with the RMS and LOS frameworks	Fully developed LOS and RMS frameworks based on LMS to inform decision making across all service areas	Medium	Medium	Full integration of LMS with RMS and LOS not yet achieved – target for future AMP iterations.
Financing Strategy	Maintain current levies (Infrastructure Levy & Transit Levy)	Continual bridging of funding gap for improved financial sustainability.	Long	High	While current Infrastructure and Transit levies have been maintained during annual budget process, and opportunities for government funding have been pursued where possible, this will need to continue indefinitely in order to achieve continual bridging of funding gap.
	Seek funding support from upper levels of government		Long	High	
	Continue to monitor and benchmark infrastructure gap with other municipalities		Short	Medium	While infrastructure gap has been monitored as part of this plan, benchmarking against comparators is not expected to be possible until the 2025 PLOS deadline for all municipalities.
	Continuous alignment with Long-Term Financial Master plan and Budget	Determination of reasonability of current reinvestment rates and allows for new targets to be developed to meet current or planned LOS	Medium	Medium	Alignment with Long-Term Financial Master plan and Budget achieved.
	Continued project co-ordination with Region of Peel and utility companies	Cost efficiencies through linear asset rehabilitation and replacement	Medium	Medium	While project coordination has

Note, any service area specific improvements are outlined in the service area appendix and categorized into the following improvement areas:

- Data Enhancement & Governance;
- Process Optimization; and
- Technology & Tools.

Monitoring Plan

With the finalization of this SA AMP, the City is positioning itself to be in compliance with the 2024 and 2025 regulatory timelines set forth in *O.Reg 588/17*. The ongoing goal following the release of this Service Area AMP is to perform annual updates to the technical contents within. The annual asset management program progress updates will be provided to Council. In 2026, an updated Corporate AMP will be provided to council as well. This 2026 Corporate AMP document will document the progress towards the improvements identified above. The roadmap included in the 2021 Corporate AMP identified full asset management integration with financial planning activities and a long-term asset investment strategy by 2026. These goals would be achieved with the recommended actions and outcomes listed above.

A

Facilities

A.1 (Facilities) – Maturity Assessment

61 Pre-Project Score

68 Current Score

91 Target Score

Activities to Achieve Target Score in Future

- Collaborate with internal stakeholders and key departments to develop SLAs outlining the expected service levels for various facility management functions, such as maintenance, repairs, and custodial services.
- Create a roadmap to systematically leverage the capabilities of VFA software such as predictive analytics, scenario modeling, and lifecycle cost analysis.
- Establish protocols for regularly updating and maintaining asset data within the VFA software, ensuring accuracy and reliability for informed decision-making.
- Implement streamlined processes for sharing relevant asset information and project updates between the Facilities division and the building design and construction groups, ensuring transparency and alignment of objectives.

Radar chart with axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement. Series: Pre-Project Score, Current Score, Target Score.

Bar chart:

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	58	72	90
Developing AM Lifecycle Strategies	61	66	87
Asset Management Enablers	63	67	94
Overall Score	61	68	91

APPENDIX A.2 - SOLI REPORT CARD

Facilities

Total Asset Replacement Value (User View - Software & Fleet):	$5.9 Million
Total Asset Replacement Value (All Facilities):	$1.7 Billion
Future Condition Trend (Next 10 Years):	Stable - Assets are renewed as needed and therefore remain in stable condition
Data Confidence & Reliability:	Condition Based

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: **"Responsibility View"** and a **"User View"**

>   *Responsibility View:* Shows the assets under the service area that is responsible for managing them
>   *User View:* Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View:

  ✓ provides a direct line of sight to those assets managed by the service area;
  ✓ will help prioritize lifecycle activities managed by the service area;
  ✓ aligns with industry best practices; and
  ✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in 2023$) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
1. Assets Used by Facilities and Managed by Other Service Areas		
Software	$4.0	4
Fleet	$2.0	67
Subtotal (User View)	*$5.9*	-
2. Assets Used by Other Service Areas and Managed by Facilities		
Corporate Facilities	$355.3	26
Animal Services Facilities	$9.9	2
Cultural Services Facilities	$102.3	1
Recreation Facilities	$743.5	69
Parks Facilities	$24.0	18
Transit Facilities	$197.1	8
Library Facilities*	$103.8	6
Fire Facilities	$110.7	15
Work Operations Facilities*	$95.5	11
Subtotal (Responsibility View)	*$1,742.0*	*156*
Total Replacement Value (User + Responsibility View)	**$1,747.9**	**-**

* Work Operations include facilities associated with Fleet, Stormwater and Transportation
* Four (4) library facilities are standalone buildings while two (2) of the Library facilities are shared facilities with Recreation

APPENDIX A.2 - SOLI REPORT CARD

Facilities

Major Types of Assets within Facilities - Responsibility View

The figure below illustrates the replacement value and condition of Facilities assets under the responsibility view. Under this view, the total replacement value of assets is $1.7 billion. This includes all facilities used across various service areas in addition to Corporate Facilities. As depicted in the figure below, Recreation Facilities are the largest portion representing 43% (or $743.5 million) of the total facilities replacement value. Overall, the facilities are in Good condition, with 89% of assets classified to be in Good or Very Good condition. Approximately 2% of assets are in Poor or Very Poor condition. The facilities condition reporting is set on an FCI calculation basis which considers the cost of immediate repair work required at each facility relative to the replacement value of the facility. In this report, the FCI rating of facilities was updated as an overall improvement to the condition reporting. At the same time, the condition facilities in Poor and Very Poor state of repair were addressed through the inclusion of recent completion of capital projects. Poor and Very Poor condition reporting does not represent a safety issue or preclude service areas from delivering services to meet the needs of residents.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY SERVICE AREA ($M)

- Fire, $110.7, 6%
- Work Operations, $95.5, 6%
- Animal Services, $9.9, 1%
- Library, $103.8, 6%
- Corporate Facilities, $355.3, 20%
- Transit, $197.1, 11%
- Cultural Services, $102.3, 6%
- Parks, $24.0, 1%
- Recreation, $743.5, 43%

RESPONSIBILITY VIEW: FACILITIES ASSET CONDITION ($M)

- Poor, $20.1, 1%
- Very Poor, $12.7, 1%
- Fair, $163.0, 9%
- Good, $400.8, 23%
- Very Good, $1,145.4, 66%
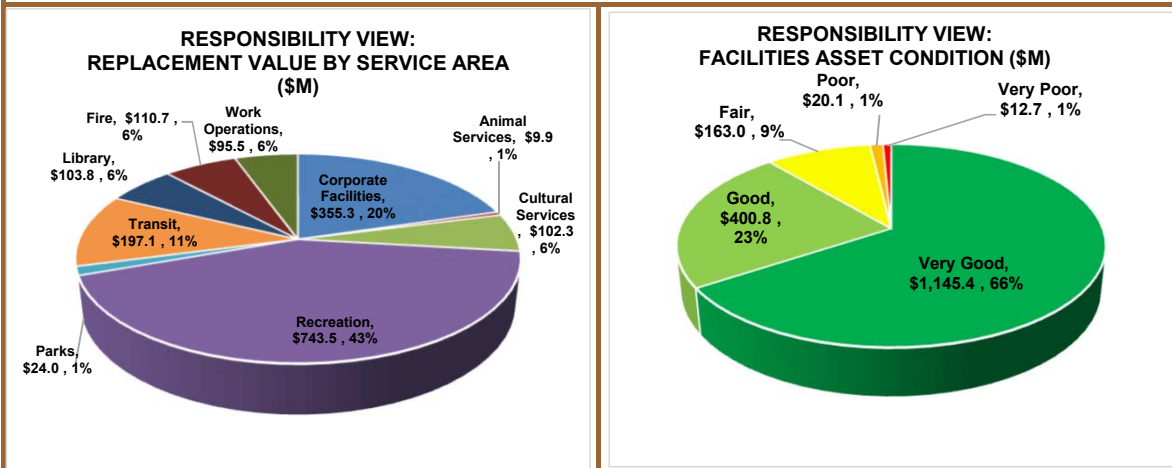
Source: Building Condition Assessments, Suncorp Valuation Report

Major Types of Assets within Facilities - User View

The figures below illustrate the replacement value and condition of assets used by Facilities under the user view. The user view for Facilities captures Software and Fleet, with a total replacement value of $5.9 million. Approximately 79% of Facilities user view assets are considered to be in Good to Very Good Condition with 19% of assets in Poor condition. Assets classified in "Poor" condition are not considered to be unsafe; the condition indicates that these assets need immediate repair work to avoid inflated maintenance costs and provide desired levels of service.

USER VIEW: REPLACEMENT VALUE BY SERVICE AREA ($M)

- Fleet, $2.0, 33%
- Software, $4.0, 67%

USER VIEW: CORPORATE FACILITIES ASSET CONDITION ($M)

- Fair, $0.1, 2%
- Poor, $1.1, 19%
- Good, $0.1, 2%
- Very Good, $4.6, 77%
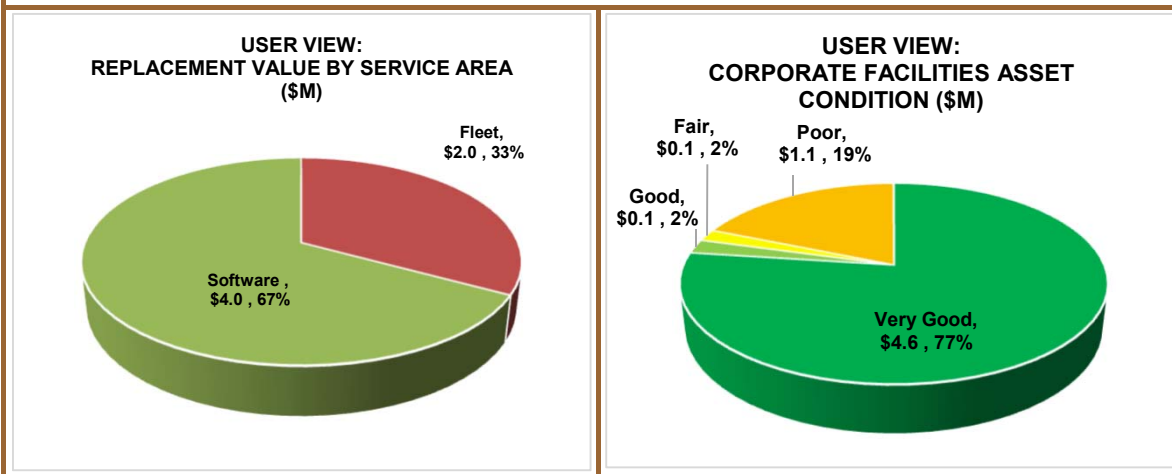
APPENDIX A.2 - SOLI REPORT CARD

Facilities

Age Summary

The following figure summarizes the average age of the City's Facilities assets. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age illustrated.
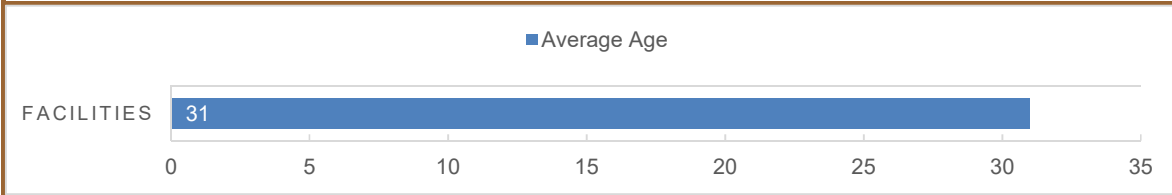
Condition Summary

The figure below illustrates the condition of all facilities assets by service area based on the responsibility view. While the assets are generally in Good to Very Good condition, the overall condition makeup varies by service area. Corporate Facilities, Parks and Recreation all have a small portion of facilities in Poor or Very Poor condition. Again, the condition assessment are determined on an FCI calculation basis which considers the cost of upcoming repair works required at a facility relative to it's replacement value. Poor and Very Poor condition reporting does not represent a safety issue or preclude service areas from delivering services to meet the needs of residents.
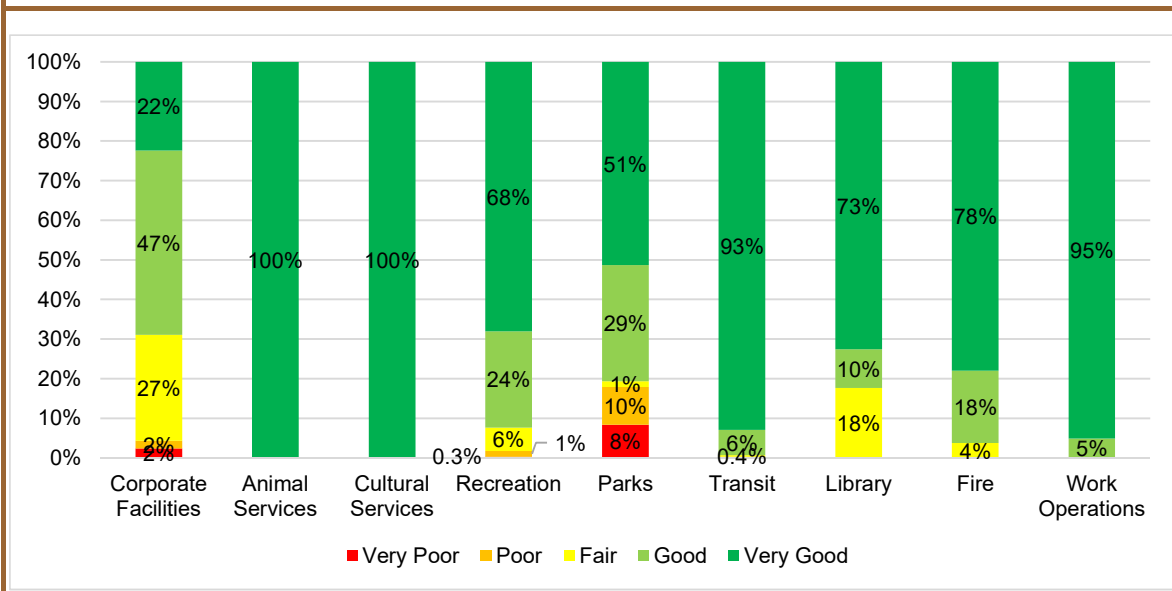
APPENDIX A.2 - SOLI REPORT CARD

Facilities

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Facilities assets in the 2022 SOLI relative to the 2021 SOLI while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the user view framework, which only considers Software and Fleet, the total value of assets has increased by $567,000 to $5.9 million in the 2022 SOLI. The increase can be attributed to cost increases experienced by most asset types.

When considering all Facilities under the responsibility view, the value of all assets increased by 16% (or $237.8 million) from the value in 2021. The increase can be attributed to the cost changes since the last report. Recent costing data was available and used to value the facilities included in this report. The valuations are largely based on the 2022 valuation report prepared by Suncorp, with some adjustments to each facility value to better capture soft costs excluded from Suncorp reports. Note the reduction in the overall value of Fire Facilities is generally related to the decommissioning of Fire Station 3.

Asset	2021 SOLI		2022 SOLI	
Corporate Facilities	26	Each	26	Each
Animal Services	2	Each	2	Each
Cultural Services	1	Each	1	Each
Recreation	68	Each	69	Each
Parks	18	Each	18	Each
Transit	8	Each	8	Each
Library	6	Each	6	Each
Fire	16	Each	15	Each
Work Operations	9	Each	11	Each
Software	1	Each	4	Each
Fleet	*66*	*Each*	67	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Used by Facilities and Managed by Other Service Areas*				
Software	$ 3,637,626	$ 3,973,584	$ 335,958	9%
Fleet	$ 1,719,259	$ 1,950,593	$ 231,333	13%
Subtotal Assets Used by Facilities - User View	**$ 5,356,885**	**$ 5,924,176**	**$ 567,291**	*11%*
2. Assets Used by Other Service Areas and Managed by Facilities				
Corporate Facilities	$ 310,434,809	$ 355,309,853	$ 44,875,044	14%
Animal Services	$ 9,444,949	$ 9,887,046	$ 442,097	5%
Cultural Services	$ 90,902,704	$ 102,301,865	$ 11,399,161	13%
Recreation	$ 626,924,411	$ 743,492,116	$ 116,567,706	19%
Parks	$ 20,723,422	$ 23,959,029	$ 3,235,607	16%
Transit	$ 170,064,733	$ 197,103,902	$ 27,039,170	16%
Library	$ 88,728,313	$ 103,780,112	$ 15,051,799	17%
Fire	$ 118,123,549	$ 110,679,460	$ (7,444,090)	-6%
Work Operations	$ 74,768,505	$ 95,478,671	$ 20,710,166	28%
Subtotal Assets Managed by Facilities - Responsibility View	**$ 1,199,680,585**	**$ 1,741,992,054**	**$ 542,311,468**	*45%*
Total Replacement Value (User + Responsibillity View)	**$ 1,510,115,394**	**$ 1,747,916,230**	**$ 237,800,836**	*16%*

Note 1: Valuations for service areas of Animal and Fire are based on staff discussions which reflect costing from more recent tenders

*Responsibility of managing the assets lies with another service area, but assets are used by Facilities

Percentage of Facilities in compliance with regulations (TSSA, ESA, AODA, Joint Health Safety Committee, OHSA, Building Code, Fire Code)

Both the target and current performance are 100% for this metric. All facilities comply with regulations, and the current budget is adequate to maintain this performance for the foreseeable future, recognizing additional costs may be required to maintain compliance as new facilities are constructed.

Tonnes of GHG Emissions from City owned buildings. [Accounts for Tonnes of GHG Emissions from immobile sources]

The most recent year where this information was available was 2020 and, in that year, about 16,353 tonnes of GHG emissions from City-owned buildings were observed. In general, the City is looking to reduce this output of emissions to 13,305 by 2030. In addition to the feasibility studies for the green retrofits at the Cassie Campbell Community Centre and SaveMax Sports Center, the zero-carbon retrofits of the Susan Fennel Sportsplex, totaling an approximated $37M are an example of the steps being taken each year to achieve this target. These facility retrofitting projects can vary in cost depending on many factors, including project timing, making them difficult to estimate.

Number of Charging Stations - Public and Staff accessible (excludes chargers for Transit and Fire Heavy Duty Vehicles)

There are currently 63 staff and publicly accessible chargers at Brampton-owned facilities with the target set at 86 by 2033. Costs are expected to be offset by charging revenues, which will also help to increase the availability and turnover of charging stations. There are currently plans to convert 14 non-networked stations into networked stations. This project is expected to cost $102,000.

Average Facility Condition Index

The average facility condition index is 2.3%, and staff have identified a target of maintaining this metric at less than or equal to 5%, which constitutes a "good" condition. Building condition assessments are updated every 5 years through external consultants. It is expected that the City will continue to carry out necessary capital repair and replacement initiatives in line with the recommendations from the BCA reports. Based on BCA's any amount of deferred maintenance as a percentage of the facility valuation is used to calculate the condition index.

Facility Condition Index (FCI)

A – New or like new condition
B – In a good state of repair
C – Some non-critical defects, some critical repairs in the near term
D – Some critical defects; many critical repairs in the near term
E – Many critical defects; immediate repair or replacement
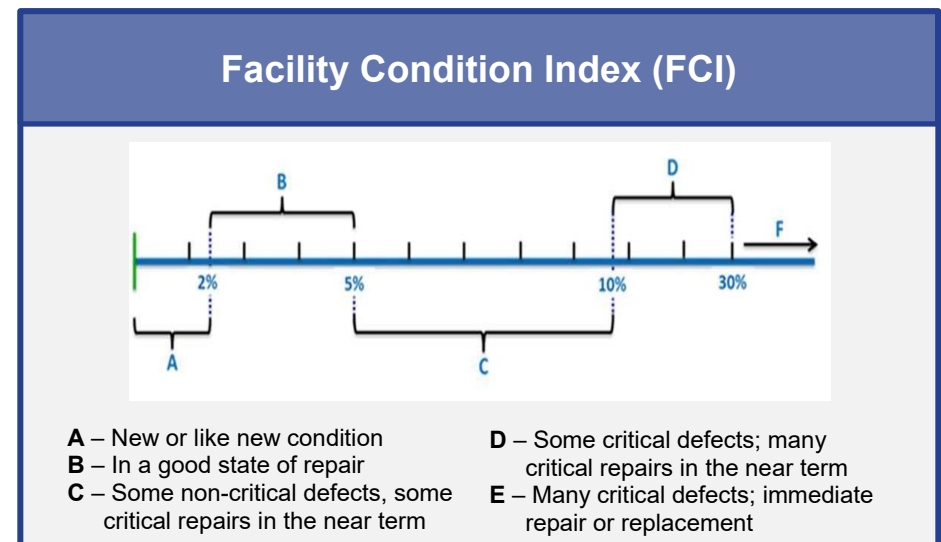
A.3 (Facilities) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Function	To provide safe, functional and accessible public Facilities for the community	Upgrade	% Facilities in compliance with regulations (TSSA, ESA, AODA, Joint Health Safety Committee, OHSA, Building Code, Fire Code)	Facilities	100%	100%
Function	Facilities are green and environmentally sustainable	Upgrade	Tonnes of GHG Emissions from City owned buildings. [Accounts for Tonne of GHG Emissions from immobile sources]	Facilities	16,353 (2020)	13,305 by 2030
Function	Electric Vehicle Charging Stations are Available to Provide Services	Upgrade	# of Charging Stations - Public and Staff accessible (excludes chargers for Transit and Fire Heavy Duty Vehicles)	Facilities	63	86 by 2033
Quality	Facilities are kept in a state of good repair	Renewal/O&M	Average Facility Condition Index	Facilities	2.30%	Less than or equal to 5.0% (Good Condition)

A.4 (Facilities) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth & Net Migration	Brampton has enough employees to provide good value and a high service level to the citizens living here.	Brampton's population is projected to grow to 985,000 by year 2051. More City staff are expected to be hired to maintain service levels for this additional population.	Corporate facilities and operations yards are indirectly impacted as number of employees grows with population. Additional programming within service areas requires additional staff and longer hours of operation.	↑	For impact on public-facing facilities, see demand management for each service area. Corporate Facility expansions required to deal with more staff. No City plan specific to population growth.	The cost for public-facing facilities to keep up with demand is documented under the demand management section for each service area. Additional corporate employees will create further costs to the City in the form of additional space requirements, wear-and-tear on facilities, and maintenance tickets.

A.4 (Facilities) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Age Structure & Customer Preferences	City staff are representative of the high-level demographics of Brampton as a whole, which currently has a young population.	It is expected that the population, and as a result, the users of corporate facilities will continue to age over time. Additional monitoring of this trend will be needed to determine the rate of change.	Accessibility requirements growing as population ages. Although hybrid work policies have resulted in lower employee foot traffic, there has been very little decrease to the service level required. Elevators, cleanliness, etc. still required.	↑	Maintenance work and service requests are attended for some facilities that are open 7 days per week. To maximize utilization facilities are evaluated for change of use and renting. Service needs in terms of maintenance and operations are similar under both scenarios.	Increased overtime costs to perform cleaning and maintenance outside of regular working hours. Rental revenue from tenant would offset all or most of the facility costs, resulting in savings.

A.4 (Facilities) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Climate Change	Climate change events are already prevalent; Brampton's council has stated their initiative to make the City greener.	Through the effort to become more environmentally sustainable, the City's current assets are expected to be replaced with environmentally friendly infrastructure.	New challenges posed and budget required with shift towards climate friendly infrastructure for Reflective and Green Roofs. HVAC and cooling breakdowns occur faster than previously expected as a result of systems are required to run more	↑	Reflective Roofs have increased inspections, maintenance, and service contracts as they are less durable than traditional roofs. Increased cost for replacement as useful life is shorter. Green Roofs require more maintenance for weeding to protect membrane and to deal with animal issues (geese, squirrels, etc.) Perform energy conservation measures by upgrading assets to reduce emissions from seven main sources of GHGs within recreational facilities: Heating and ventilation, Pool water heater, Pool area heating and ventilation, Plumbing fixtures, Ice resurfacing water heating, Ice resurfacing machine, Ice rink radiant heaters	Retrofitting of 5 Recreational facilities (Cassie Campbell Comm. Centre, Save Max Sports Centre, Earnscliffe Rec. Centre, Century Gardens Rec. Centre, Chinguacousy Wellness Centre) $105.5 M Maintenance and overhaul costs are increased for HVAC and Chilling systems
Legislative Changes	Legislated requirements are becoming more stringent, requiring Brampton to adhere to most strict standards.	Legislated changes trending towards stricter standards are expected to continue.	Increased backflow prevention standards from Peel Region. • Implemented in 2017, has since seen a sharp increase in unplanned maintenance.	↑	Survey Facilities to determine what needs to be done to reach compliance. Increase PM Inspections, Reporting, and associated budget for these items.	Cost depends on severity of incident and waterline compliance to bring buildings up to code.

A.5 (Facilities) – Risk Management

Risk Identification

	Consequence				
Likelihood	C1	C2	C3	C4	C5
P5	Medium	Medium	High	High	Extreme
P4	Low	Medium	Medium	High	High
P3	Low	Low	Medium	Medium	High
P2	Insignificant	Low	Low	Medium	Medium
P1	Insignificant	Insignificant	Low	Low	Medium

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions	Consequence				
Likelihood	C1	C2	C3	C4	C5
P5	$0.0	$0.0	$114.3	$2.2	$0.0
P4	$0.0	$0.0	$232.4	$10.5	$0.0
P3	$0.0	$0.0	$96.2	$730.8	$0.0
P2	$0.0	$0.0	$372.8	$0.0	$0.0
P1	$0.0	$0.0	$182.7	$0.0	$0.0

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Facilities. In total, about $1.7 billion in assets have been assessed. Of the $1.7 billion, about $555.5 million (32%) have been assessed to be in Low to Insignificant risk. About $1.1 billion (61%) are assessed to be in Moderate risk, making up the majority of the assets. The remaining, $127.1 million (7%) have been assessed as High risk. No assets have been assessed to be in the Extreme risk category.

Summary of Risk Assessment by Replacement Value ($ Millions)
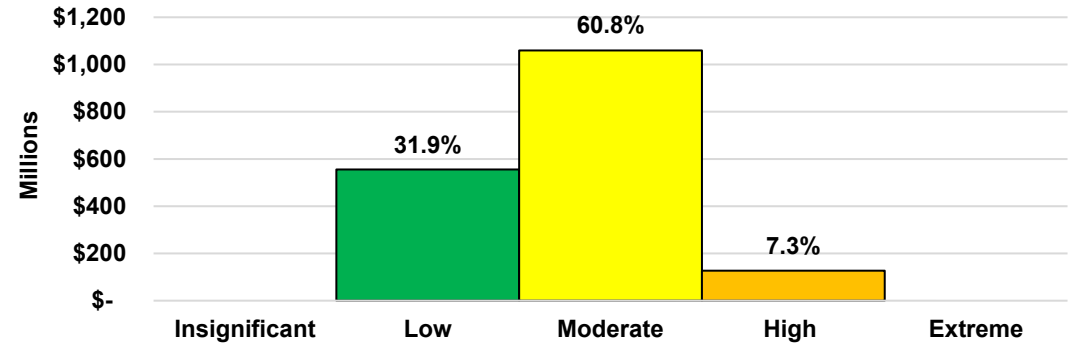
Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:
- The risk map indicates that there are no assets which fall into the Extreme risk category. There are a series of assets which are assessed as High risk.
- The $127.1 million of assets within the High-risk category is associated to service areas that are already struggling with capacity, such as Library and Recreation, which have resulted in a high probability of failure in capacity at peak demand periods. The needs of these service areas have been identified by the individual demand sections of the AMP. Furthermore, some Corporate and Parks facilities have been identified to have lower Facility Condition Index, which has consequently raised their risk rating. However, it is noted that the methodology for developing conditions for facilities is based on overall estimates of the condition, and it is expected that this methodology will be improved in the coming year to better align with conditions on the ground.
- Investing in growing the number of Library and Recreation facilities to decrease the likelihood of capacity constraints will reduce the risk rating of these assets. The capital planning process has identified the facilities with low FCI for treatment and renewal, which is expected to lower the likelihood of failure for those facilities.

APPENDIX A.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Facilities Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, VFA, FAMIS, Various BAS Solutions, RETScreen, eBuilder, AutoCAD, Revit, PeopleSoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
HR Holistic Review (Overall Review of SA)	**1.1** Active Holistic Review of Business Requirements (High Level)	Completed	CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.
DM Data Management (Governance and Collection)	**1.1** Formalize asset data governance including interdependent assets	In Progress - Minimally Completed	Assign specific individual(Position/Role/Team) to be responsible for collecting, managing, and ensuring the quality of asset information. This includes collaborating with other relevant departments such as BDC for information on assets and projects completed to keep the assets in state of good repair, specifically when it comes to assets with heavy interdependencies.
	1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	In progress - Significantly Completed	Establish adjustment factors in VFA to align with industry standards and ensure reported Asset Replacement Values (ARVs) are practical and accurate. Bench mark other successful municipalities. Develop SOPs and checklist to ensure data accuracy and successful software implementation.
SOI State of Infrastructure (Asset ID, Location, Classification, Physical Attribute, Condition)	**1.1** Improve on inventory data and attributes.	In progress - Significantly Completed	Assess and develop a universal barcoding solution for all Service Areas, to standardize asset identification and streamline asset tracking and management processes. Verify that all building assets are recognized by a common asset identifier using RFID or consistent barcoding to facilitate seamless linkage of attributes across different asset registers.
	1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions. Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.	In Progress - Minimally Completed	Ensure robustness of the system by capturing and maintaining comprehensive data on all facilities and assets, including details such as asset cost, condition, maintenance history, and criticality.

APPENDIX A.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Facilities				
Asset Information Systems Maturity Tracker and Roadmap Update				
Asset Related Software Solutions or Tools: **Excel, VFA, FAMIS, Various BAS Solutions, RETScreen, eBuilder, AutoCAD, Revit, PeopleSoft, Questica**				
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**	
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Collaborate with interdependent service areas to establish SLAs with key performance indicators (KPIs). Develop clear metrics and targets to measure performance and facilitate effective coordination.	
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In progress - Significantly Completed	Enhance data collection processes to gather accurate and up-to-date information on asset performance, energy usage and user satisfaction.	
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In progress - Significantly Completed	Use FAMIS data to enhance LOS measures and capture cost to provide major LOS. BAS and electric chargers to capture energy usage and explore use of that software energy analysis for City facilities.	
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Use VFA and FAMIS capabilities to streamline the work order generation process.	
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In progress - Significantly Completed	Ensure that information on completed projects is regularly updated to reflect the latest status and outcomes	
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In Progress - Minimally Completed	Incorporate data from risk assessments, work management activities, and levels of service to inform lifecycle strategy development. Enhance the risk framework by incorporating more accurate data on quality and capacity.	
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Establish adjustment factors in VFA to align with industry standards and ensure reported Asset Replacement Values (ARVs) are practical and accurate	
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Assess the viability of Decision Support Systems (DSS) to enhance financial decision-making	
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In progress - Significantly Completed	Collaborate with IT, FOM and BDC to prepare a roadmap to utilize the functionalities of VFA and FAMIS to capture all lifecycle activities and leverage the information for analysis and decision making.	

A.7 (Facilities) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Service Area
$19.6M O&M Total Cost per Annum
($M)

Recreation, $0.1, 0.3%

Animal Services, $0.1, 1%

Cultural Services, $0.02, 0.10%

Library, $0.4, 2%

Work Operations, $0.9, 5%

Fire, $0.2, 1%

Parks, $0.04, 0.2%

Transit, $0.1, 0.4%

Corporate Facilities, $17.8, 91%
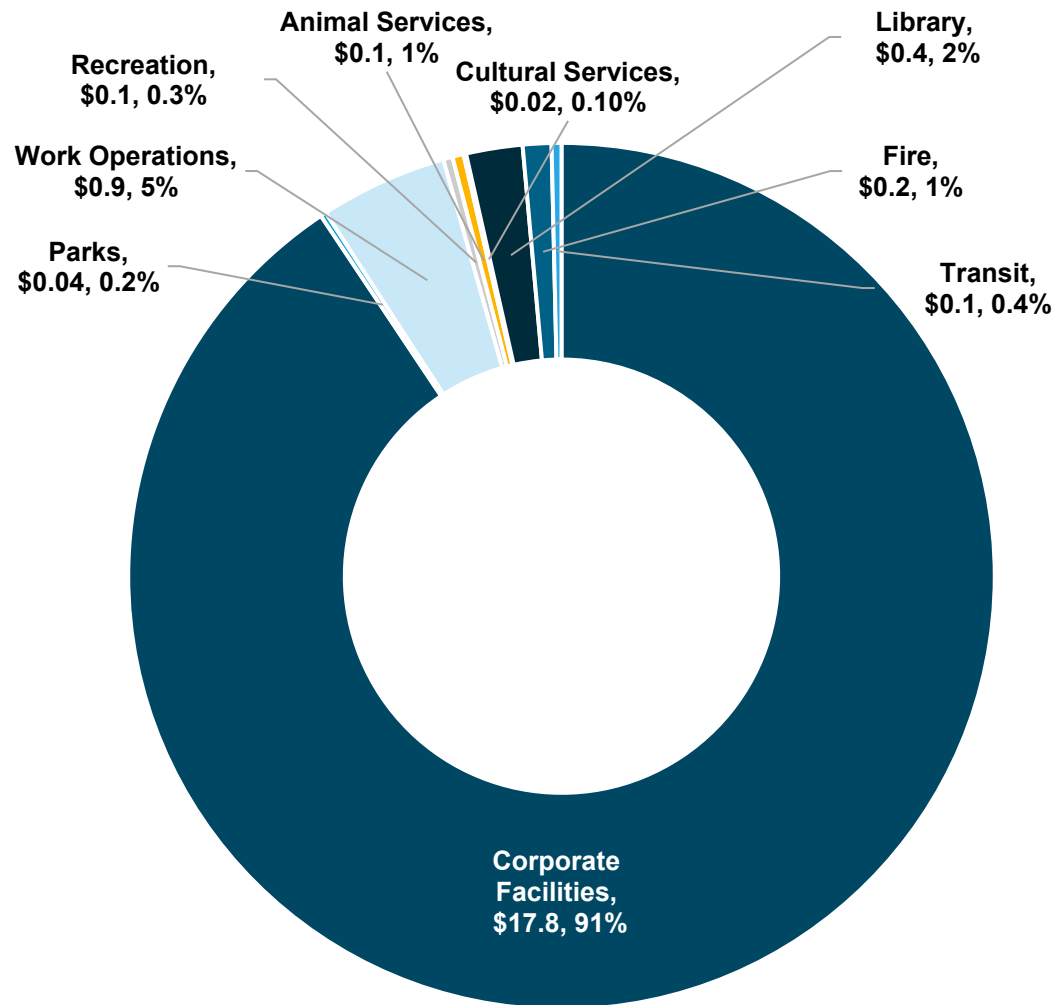
O&M Activities

- The Facility Operations and Maintenance Division (FOM) is generally responsible for the ongoing maintenance of City facilities. As noted in the graph, most costs can be attributed to maintaining corporate facilities.

- In addition to these costs from FOM, some service areas incur costs within their division budget to maintain their respective facilities (i.e. fire, transit and recreation). Those costs are included with the respective service area.

- The FOM division undertakes the following activities: Facilities Maintenance, Energy management, Maintenance Contract Management and Security Services.

A.7 (Facilities) – Lifecycle Management
Capital Activities

Service Area	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Corporate Facilities	$355,310,000	Perpetual Asset	Renewal	$6,275,000
Parks	$23,959,000	Perpetual Asset	Renewal	$758,000
Work Operations	$95,479,000	Perpetual Asset	Renewal	$414,000
Recreation	$743,492,000	Perpetual Asset	Renewal	$12,592,000
Animal Services	$9,887,000	Perpetual Asset	Renewal	$232,000
Cultural Services	$102,302,000	Perpetual Asset	Renewal	$3,128,000
Library	$103,780,000	Perpetual Asset	Renewal	$548,000
Fire	$110,679,000	Perpetual Asset	Renewal	$1,373,000
Transit	$197,104,000	Perpetual Asset	Renewal	$2,587,000
Non-Infrastructure Solutions	-	-	-	$2,256,000
Total	**$1,741,992,000**			**$30,163,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$30.2 million**.

The Building Design and Construction Division is responsible for the capital activities.

Facilities, for the purposes of the asset management plan, are considered perpetual assets that undergo renewal activities to maintain levels of service.

Of the total, Recreation facilities represent the largest share of the total with $12.6 million in annual capital funding needs related to renewal.

Non-infrastructure solutions (NIS) account for an additional $2.3 million annually in capital spending.

A.7 (Facilities) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($M)

- Capital - Non-Infrastructure Solutions, $2.3, 5%
- O&M, $19.6, 39%
- Capital - Renewal, $21.2, 43%
- Capital - Replacement, $6.7, 13%
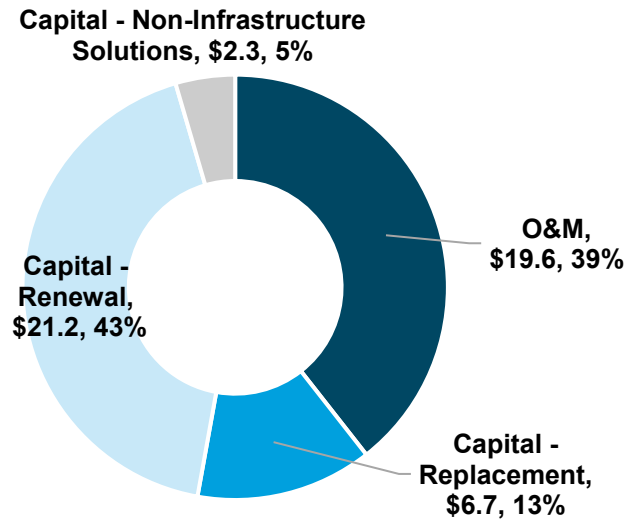
Annual Expenditure by Service Area ($M)
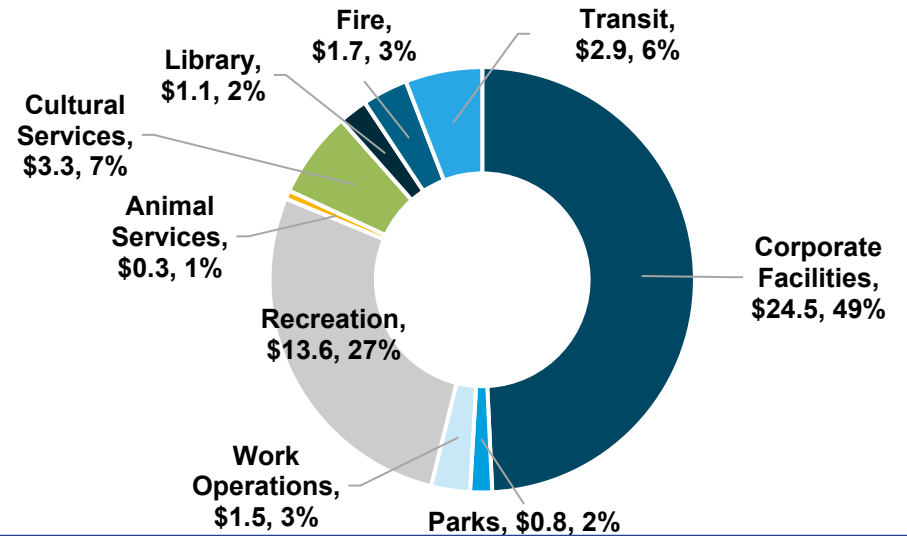
- Fire, $1.7, 3%
- Transit, $2.9, 6%
- Library, $1.1, 2%
- Cultural Services, $3.3, 7%
- Animal Services, $0.3, 1%
- Corporate Facilities, $24.5, 49%
- Recreation, $13.6, 27%
- Work Operations, $1.5, 3%
- Parks, $0.8, 2%

Service Area	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Corporate Facilities	$355,310,000	$17,786,000	$6,735,000	$24,521,000
Parks	$23,959,000	$42,000	$789,000	$831,000
Work Operations	$95,479,000	$934,000	$537,000	$1,471,000
Recreation	$743,492,000	$69,000	$13,555,000	$13,624,000
Animal Services	$9,887,000	$82,000	$244,000	$326,000
Cultural Services	$102,302,000	$19,000	$3,260,000	$3,279,000
Library	$103,780,000	$413,000	$683,000	$1,096,000
Fire	$110,679,000	$209,000	$1,516,000	$1,725,000
Transit	$197,104,000	$72,000	$2,842,000	$2,914,000
Total	**$1,741,992,000**	**$19,626,000**	**$30,163,000**	**$49,787,000**

A.7 (Facilities) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Service Area ($M)

- Corporate Facilities, $22.8 , 10%
- Work Operations, $5.9 , 3%
- Transit, $115.8 , 50%
- Recreation, $68.0 , 29%
- Animal Services, $6.9 , 3%
- Cultural Services, $0.5 , 0.2%
- Fire, $4.2 , 2%
- Library, $8.1 , 3%
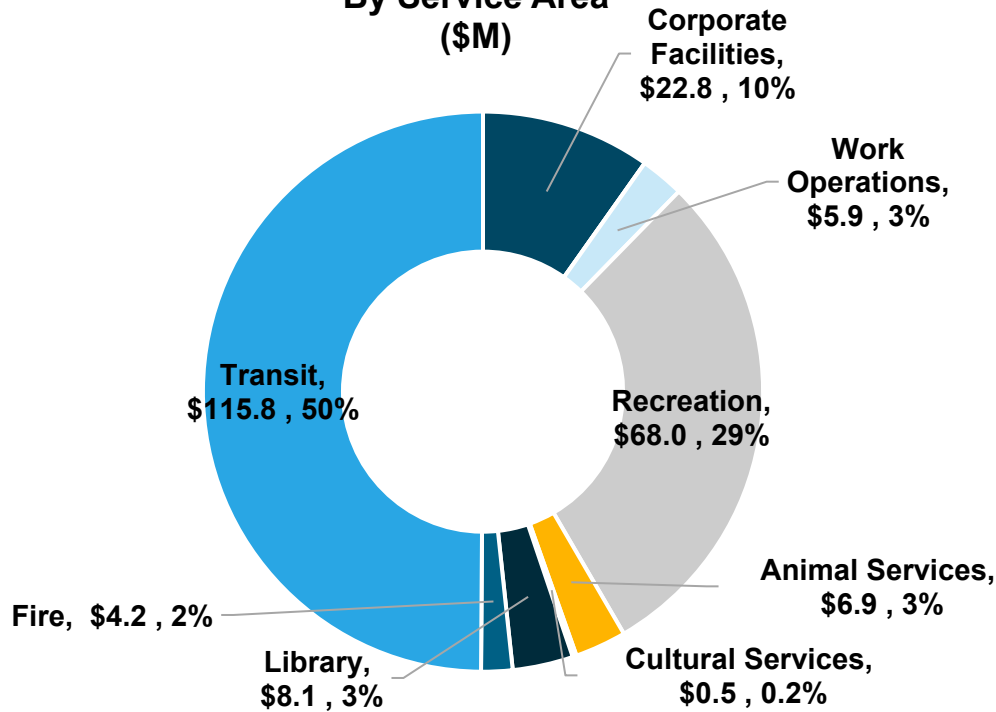
Proposed Levels of Service

- Of the total, Transit Facilities represents the largest share of the total annual expansion and upgrade costs amounting to about $115.8 million.
- The first round capital costs would primarily be funded from the City's DCs, CBCs and tax levy (for non-growth related project costs). In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $46.5 million at Year 10. Importantly, although the first round capital costs for expansion are illustrated, the operating implications associated with some of these facilities are included in the appropriate service area appendix of this report.
- *Source: 2024 DC Study, 2023-2027 Capital Plan & Discussions with Staff*

$13.4M Annual OPEX Impact at Year 10

$33.1M Annual CAPEX Impact at Year 10

Service Area	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Corporate Facilities	$21,268,000	$1,490,000	$342,000	$1,133,000
Parks	-	-	-	-
Work Operations	$5,860,000	-	$25,000	$57,000
Recreation	$62,652,000	$5,323,000	$1,151,000	$6,000
Animal Services	$6,900,000	-	$162,000	$57,000
Cultural Services	$520,000	-	$16,000	-
Library	$8,112,000	-	$43,000	$32,000
Fire	$4,078,000	$120,000	$52,000	$8,000
Transit	$88,800,000	$27,000,000	$1,520,000	$42,000
Total	**$198,190,000**	**$33,933,000**	**$3,311,000**	**$1,335,000**

A.8 (Facilities) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Implement VFA to capture information at the component/system level and establish adjustment factors for accurate replacement value estimates. These adjustment factors need to be developed after a thorough review of recent tenders, DC project inputs and benchmarking with comparable VFA users.

- Track current projects to assess actual hard and soft costs and complete variance analysis.

Process Optimization

- Standardize tracking across the City of the current performance of GHG emissions related measures.

- Develop Service Level Agreements (SLAs) with other service areas to improve asset governance and service delivery.

- Conduct a master planning exercise for facilities to assess the change in demand experienced by its different user service areas and in alignment with the City's strategic priorities.

- Assess the risk to levels of service provided by facilities particularly to other user groups.

- Develop a climate change risk management plan specific to corporate facilities as certain components of City-owned buildings are more susceptible to extreme weather events.

Technology & Tools

- Develop system to track Levels of Service measure where required.

- Create a roadmap and implementation plan to explore full potential of VFA.

Appendix

B

Transit Services

B.1 (Transit Services) – Maturity Assessment

71 Pre-Project Score

77 Current Score

92 Target Score

Activities to Achieve Target Score in Future

- Establish data collection to support operations planning for electrified facilities and buses, ensuring comprehensive data mining and analysis to optimize lifecycle activities and operational efficiency.
- Conduct a formal risk-based sensitivity analysis of financial forecast scenarios to identify potential risks and uncertainties that may impact transit operations and financial sustainability.
- Collaborate with consultants and industry experts to collect data and insights from electric buses, translating lessons learned into broader network improvements and best practices adoption.
- Explore opportunities to establish Service Level Agreements (SLAs) with IT and Facilities departments to ensure alignment and collaboration in asset management initiatives and projects.

Radar chart – axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement. Series: Pre-Project Score, Current Score, Target Score.

Bar chart:

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	74	83	93
Developing AM Lifecycle Strategies	73	77	92
Asset Management Enablers	67	72	90
Overall Score	71	77	92

APPENDIX B.2 - SOLI REPORT CARD

Transit

Asset Replacement Value:	$618.0 Million
Total Asset Replacement Value Including Facilities and Software:	$820.3 Million
Future Condition Trend (Next 10 Years):	Stable
Data Confidence & Reliability:	Age and Condition Based

The 2022 SOLI analysis is being reported under two different asset representation perspectives: **"Responsibility View"** and **"User View"** representation

>*Responsibility View:* Shows the assets under the service area that is responsible for managing them
>*User View:* Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View

- ✓ provides a direct line of sight to those assets managed by the service area;
- ✓ will help prioritize lifecycle activities managed by the service area;
- ✓ aligns with industry best practices; and
- ✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Transit		
Licensed Vehicle Assets	$497.1	505
Transit Facilities (On Road)*	$62.2	3,400
Transit IT Infrastructure**	$2.3	43
Specialty Equipment***	$56.4	4,757
Subtotal Assets Managed by Transit (Responsibility View)	*$618.0*	-
Assets Managed by Other Service Areas		
Transit Facilities	*$197.1*	*8*
Software Used by Transit	*$5.2*	*2*
Total Replacement Value (User View)	**$820.3**	-

* Transit Facilities (On Road) include Conventional Shelters, Bike Shelters, Zum Shelters, Bus Stops (with Concrete Pads), and Sandalwood Loop

** Transit IT Infrastructure includes Video Walls, Smart Bus Systems & True Credential ID Card Application Hardware

*** The assets included under specialty equipment are detailed under the "Comparison of 2022 vs. 2021 Inventory and Replacement Value" below

APPENDIX B.2 - SOLI REPORT CARD

Transit

Major Types of Assets within Transit - Responsibility View

The figures below illustrate the replacement value and condition of Transit assets under the responsibility view. Under this view, the total replacement value of assets is $618.0 million. Consistent with the 2021 SOLI, Transit licensed vehicle assets, on road transit facilities, Transit IT infrastructure and specialty equipment are considered under the management of this service area. Overall, the Transit assets are in Good condition with only about 2% ($11.1 million) of the total asset base rated in Poor condition and less than 1% ($1.8 million) in Very Poor condition. It is important to note that assets classified in "Poor" and "Very Poor" condition are not considered to be unsafe; the condition indicates only that assets are nearing the end of an engineered useful life and may need to be replaced to avoid inflated maintenance costs.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Transit Facilities (On Road), $62.2, 10%
- Transit IT Infrastructure, $2.3, <1%
- Specialty Equipment, $56.4, 9%
- Licensed Vehicle Assets, $497.1, 81%

RESPONSIBILITY VIEW: TRANSIT ASSET CONDITION ($M)

- Very Good, $113.6, 19%
- Very Poor, $1.8, 0%
- Poor, $11.1, 2%
- Fair, $181.1, 29%
- Good, $310.6, 50%
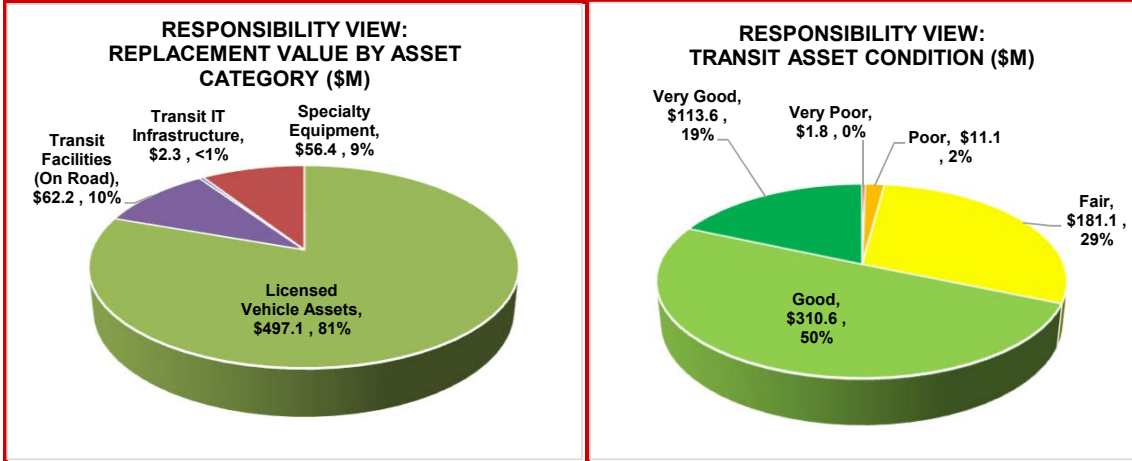
Data Source: Departmental Inventory and Asset Works (M5)

Major Types of Assets within Transit - User View

The figures below illustrate the replacement value and condition of Transit assets under the user view. Under the user view illustration, which also captures transit facilities and software, the replacement value is about $820.3 million. Of this total, licensed vehicles continue to represent the largest share at $497.1 million. Over 75% of the assets are considered to be in Good to Very Good Condition. Less than 3% of assets are in Poor and Very Poor condition. As above, assets classified in "Poor" and Very Poor" condition are not considered to be unsafe; the condition indicates only that assets are nearing the end of an engineered useful life and may need to be replaced to avoid inflated maintenance costs.

USER VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Facilities, $197.1, 24%
- Software, $5.2, <1%
- Specialty Equipment, $56.4, 7%
- Licensed Vehicle Assets, $497.1, 61%
- Transit Information Technology Infrastructure, $2.3, <1%
- Transit Facilities (On Road), $62.2, 7%

USER VIEW: TRANSIT ASSET CONDITION ($M)

- Very Good, $302.0, 37%
- Very Poor, $1.8, 0%
- Poor, $11.7, 2%
- Fair, $181.9, 22%
- Good, $323.0, 39%
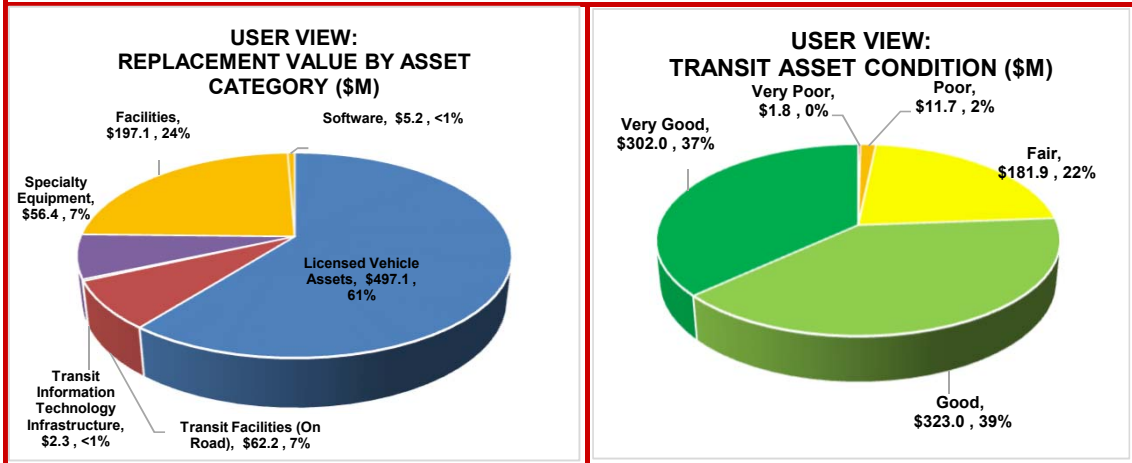
APPENDIX B.2 - SOLI REPORT CARD

Transit

Age Summary

The following figure summarizes the average age of the City's Transit Assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated. It is important to emphasize that the age of an asset relative to its useful life does not always provide a complete picture of its actual condition, and an asset can often perform at an expected level to meet service requirements as is the case with Maintenance/Admin Small Equipment.

Age summary chart showing Average Age (Beyond Useful Life), Average Age, and Expected Useful Life:

Asset Category	Average Age	Expected Useful Life
HEAVY DUTY VEHICLES (BUSES)	8	18
SUPPORT FLEET	6	9
SHELTERS - CONVENTIONAL	8	20
SHELTERS - ZUM	9	20
SHELTERS - BIKE	9	20
STOPS	6	20
SANDALWOOD TRANSIT LOOP	6	20
VIDEO WALLS	4	10
SMART BUS SYSTEMS	3	6
TRUE CREDENTIAL ID CARD HARDWARE	1	5
CONVEYANCE SYSTEMS	7	13
COMMUNICATION CONTROL	7	14
FARE SYSTEMS	2	10
PRESTO	2	10
MAINT./ADMIN SMALL EQUIPMENT	16 (Beyond Useful Life)	12
SIGNAGE	12	14
FUELING	10	30
ELECTRIC CHARGERS	1	12

Condition Summary

The figure below illustrates the condition of the various Transit assets by key sub-component areas based on the user view. While the assets are generally in Good to Very Good condition, specialty equipment has 1% of assets in Very Poor condition and a further 17% in Poor condition. Additionally, there is a small percentage of Transit on-road facilities which are reported in Poor and Very Poor condition. These assets are regularly inspected and continue to be operational and in working order while anticipated to be serviced over the short-term. One Bus Lift is in Very Poor condition and has been taken out of operation. The small portion of Very Poor assets under Licensed Vehicle Assets pertain to Support Fleet vehicles. The condition analysis for these assets is based on age, and not necessarily reflective of actual asset condition (these are not public facing assets and are closely monitored to maintain safe, working order).

Condition summary chart (Very Poor, Poor, Fair, Good, Very Good):

Category	Very Poor	Poor	Fair	Good	Very Good
Facilities	0.4%		0.3%	6%	93%
Software					100%
Licensed Vehicle Assets	0.2%	0.1%	28%	54%	18%
Transit Facilities (On Road)	0.4%	1%	42%	38%	19%
Transit IT Infrastructure			98%		2%
Specialty Equipment	1%	18%	28%	29%	24%

145
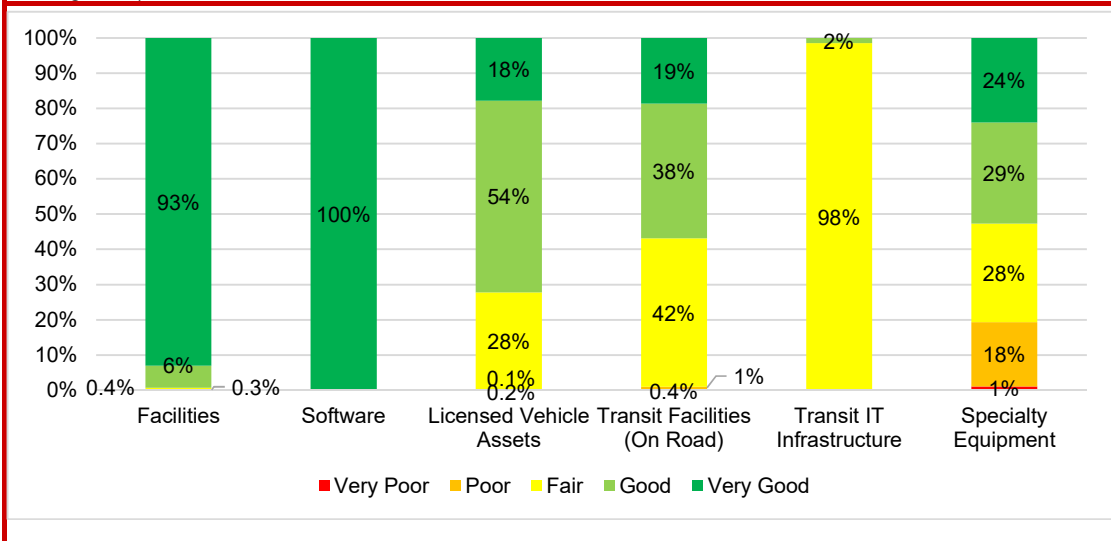
APPENDIX B.2 - SOLI REPORT CARD

Transit

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Transit assets in the 2022 SOLI relative to the 2021 SOLI while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the total replacement value of Transit assets has increased by 13% from approximately $550.0 million to $618.0 million. The increase in value can largely be attributed to cost increases since the last report. Specifically, recent costing data was provided and used for Heavy Duty Vehicles, Electric Chargers, Conventional Shelters, Communication Control and Signage, while the remaining asset replacement values were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report. Furthermore, data improvements related to the costing of software assets have been made as part of this SOLI and are contributing to the overall increase.

When considering the Transit Facilities and Software, the value of Transit assets increased by 14% (or $99.1 million) from the value reported in 2021 after inflationary adjustments. This increase is also attributable to the use of updated indices to reflect the cost to replace assets in current dollars.

Please note, the Facilities and IT report cards include additional information (including the inflation measure applied) on those assets used by Transit Services but maintained and managed by a different City department.

Asset	2021 SOLI		2022 SOLI	
Licensed Vehicle Assets	501	Each	505	Each
Transit Facilities (On Road)	3,351	Each	3,400	Each
Transit Information Technology Infrastructure	43	Each	43	Each
Specialty Equipment				
Conveyance Systems	34	Each	34	Each
Communication Control	4	Each	4	Each
Fare Systems	498	Each	498	Each
Presto	1,082	Each	1,082	Each
Maintenance/Admin Small Equipment	7	Each	9	Each
Signage	3,093	Each	3,120	Each
Fueling	5	Each	5	Each
Electric Chargers	5	Each	5	Each
Facilities	8	Each	8	Each
Software	2	Each	2	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 170,064,733	$ 197,103,902	$ 27,039,170	16%
Software	$ 1,222,470	$ 5,195,531	$ 3,973,061	325%
Subtotal Assets Managed by Other Service Areas	**$ 171,287,203**	**$ 202,299,433**	**$ 31,012,231**	**18%**
2. Assets Managed by Transit Services				
Licensed Vehicle Assets	$ 438,919,651	$ 497,071,246	$ 58,151,596	13%
Transit Facilities (On Road)	$ 56,774,260	$ 62,239,746	$ 5,465,486	10%
Transit Information Technology Infrastructure	$ 2,074,231	$ 2,311,800	$ 237,569	11%
Specialty Equipment				
Conveyance Systems	$ 10,455,000	$ 11,648,997	$ 1,193,997	11%
Communication Control	$ 15,158,000	$ 17,136,000	$ 1,978,000	13%
Fare Systems	$ 9,088,674	$ 10,126,632	$ 1,037,958	11%
Presto	$ 5,241,000	$ 5,839,540	$ 598,540	11%
Maintenance/Admin Small Equipment	$ 478,584	$ 672,346	$ 193,762	40%
Signage	$ 3,102,473	$ 2,002,030	$ (1,100,443)	-35%
Fueling	$ 1,404,000	$ 1,564,342	$ 160,342	11%
Electric Chargers	$ 7,260,000	$ 7,405,200	$ 145,200	2%
Subtotal Assets Managed by Transit Services (Responsibility View)	**$ 549,955,873**	**$ 618,017,880**	**$ 68,062,007**	**12%**
Total Replacement Value: User View (1+2)	**$ 721,243,075**	**$ 820,317,313**	**$ 99,074,238**	**14%**

* Responsibility of managing the assets lies with another service area, but assets are used by Transit

B.3 (Transit Services) – Levels of Service

Percentage of regulated inspections completed

Currently, 100% of regulated inspections are being completed. The target performance is to maintain this percentage over the long-term. To meet the target, current funding levels should be maintained with annual adjustments for growth.

Percentage of City owned Heavy Duty Transit Vehicles that are Hybrid or Electric

Currently, 30% of all transit heavy duty vehicles (buses) are either hybrid or electric. The target level of service has been set at 100% hybrid or electric buses as early as the year 2040 but not later than the year 2050, subject to the Council consideration of the ZEB strategy and allied budget/funding requirements. In today's dollars, the cost of replacing a bus can range from $850,000 to $1.7 million depending on whether it is replaced with a 40ft or 60ft diesel, hybrid or electric bus.

Percentage of Heavy Duty Vehicle assets at or above "Fair" condition

Currently, 98% of buses are at "Fair" condition or better. The target performance is to reach and maintain 100% of buses in this condition. The small gap that currently exists is not a result of a funding

shortfall, but rather is expected to occur as a small percentage of buses reach the end of their useful life each year. To continue meeting the target, current funding levels should be maintained with annual adjustments for growth.

Transit Ridership Per Capita (Rides per year)

As of 2022, for each resident of Brampton, there was 46 rides per year. The 2022 target identified is 50 rides per capita. This gap between the current and targeted level of service has been closed, as Transit Ridership per Capita reached approximately 57 in 2023, and is expected to continue increasing in 2024. To continue meeting and exceeding the target, current funding levels should be maintained with annual adjustments for growth.

Transit Heavy Duty Vehicles (Operating Hours only) Hours Per Capita

Current (2022) performance is reported as 1.80 hours/capita. The target is defined at 2.1 hours per capita in 2024. This is expected to be reached and exceeded with current projects underway such as the introduction of the Night Network, which is expected to provide 24/7 service by 2027, and extending service spans on routes where there is

demand such as residential areas on Weekends. To meet the target, current funding levels should be maintained with annual adjustments for growth.

Percentage of Bus Stops that are Accessible

Currently, 85% of Brampton's bus stops are AODA compliant, and a target of 95% has been set to be achieved by 2032. Since all new shelters and all replacements are done in compliance with AODA regulations, this metric is expected to be reached as bus shelters reach the end of their useful lives and are replaced. To meet the target, current funding levels should be maintained with annual adjustments for growth.

Transit Revenue to Cost Ratio

As of 2022, 42.9% of Transit costs were offset with fare revenue in the City of Brampton. The target of 47.1% was identified by the Transit Master Plan. In 2023, the Revenue to Cost ratio exceeded the target and is expected to continue exceeding the target in 2024. Several non-infrastructure solutions are expected to help reach this target in the short-term including regional fare integration with the TTC to keep fare increase aligned with inflation rate,

promotions, and monitoring and addressing customer satisfaction survey results. Additionally, this metric is expected to increase as City becomes more urbanized, population ages, and traffic congestion worsens. To meet the target, current funding levels should be maintained with annual adjustments for growth.

Transit On-Time Performance

As of 2022, 81.8% of transit buses were on-time in the City. Staff have set the target at 90% by the year 2032. This gap between current and target service levels is expected to improve in the future with Civil Engineering Solutions (Extended greens, location of bus stops) that give buses preference. Because of ridership increases and traffic congestion, adapting bus schedules to changes in running time and adjusting on-time performance standards is one of the most important elements of increasing the on- time performance. Current funding levels should be maintained with annual adjustments for growth.

Transit Rides per Customer Complaint

Staff have set a target of 8,000 rides per customer complaint, and while the current performance is estimated at about 30,000 rides per complaint, the City is far exceeding this target. The strategies to continue exceeding this target include customer satisfaction surveys, and implementation of CRM Software. Current funding levels should be maintained with annual adjustments for growth.

Mean Distance between Transit Failures (MDBF)

The average distance between transit failures is currently 24,000 km. Staff have identified the industry standard of 18,000 as a target for this metric, which is being greatly exceeded. To continue providing this high level of service, staff intend to continue performing regular maintenance as required to keep buses on the road. To meet the target, current funding levels should be maintained with annual adjustments for growth.

GHG emissions in tonnes of eCO2 for Transit Buses

The most recent measurement of this metric is from 2022, when the GHG emissions was measured at 37,130 tonnes of eCO2. Through the replacement of existing buses with electric and Hybrid vehicles in the future, the City is taking steps towards an overall reduction in GHG emissions for Transit buses. The ZEB Strategy has identified a target of a 95% reduction over the 2019 levels as early as 2040 and no later than 2050, subject to the council consideration of the ZEB strategy and the budget that comes as a result of this decision. The costs associated with meeting these targets is addressed in the "Percent of City owned Heavy Duty Transit Vehicles that are Hybrid or electric" metric above.

GHG emissions in tonnes of eCO2 for Transit support fleet (low and medium duty)

The transit support fleet was estimated to emit 413 tonnes of eCO2 in 2019   per Fleet Sustainability Report (2021-2035). The Fleet Sustainability Report has identified the target as an overall 80% reduction in GHG emissions by 2035 for overall City Fleet with exclusion of Transit Buses. Replacement of fleet with electric or hybrid vehicles is underway for many service areas across the City including Transit support fleet The Sustainable Fleet Strategy outlines the additional CAPEX and OPEX costs required to achieve PLOS target for all City fleet (except Transit buses. The Sustainable Fleet Strategy outlines the additional CAPEX and OPEX costs required to achieve PLOS target.

B.3 (Transit Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service*	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Function	Transit Heavy Duty Vehicles comply with safety regulations	Upgrade	% of regulated inspections completed	Heavy Duty Vehicles	100%	100%
Function	Transit licensed vehicles are green and environmentally sustainable	Upgrade	% of City owned Heavy Duty Transit Vehicles that are Hybrid or electric	Licensed Vehicle Assets	30% (2022)	100% as early as 2040 and no later than 2050
Quality	Transit Heavy Duty Vehicles are kept in a state of good repair	Renewal/O&M	% of Heavy Duty Vehicle assets at or above "Fair" condition	Heavy Duty Vehicles	98%	100%
Capacity and Use	Transit network is available to all residents and provides consistent and predictable travel	Growth	Transit Ridership Per Capita (Rides per year)	Overall Transit Services	46	50
Capacity and Use		Growth	Transit Heavy Duty Vehicles (Operating Hours only) Hours Per Capita	Overall Transit Services	1.7	2.0
Function	Transit Services comply with AODA regulations	Upgrade	% of Bus Stops that are Accessible	Bus shelters and stops	85%	95% (2032 Target)
Affordability	Transit services are cost efficient	Financial Sustainability	Transit Revenue to Cost Ratio	Overall Transit Services	42.9%	47.1%

CLOS are based on 2022 performance

B.3 (Transit Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service*	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Quality	Transit network is available to all residents and provides consistent and predictable travel	Renewal/O&M	Transit On-Time Performance	Overall Transit Services	80.0%	90%
Quality	Customers are satisfied with level of service	Renewal/O&M	Transit Rides per Customer Complaint	Overall Transit Services	30,000 (2023)	Minimum of 8,000
Quality	Transit Heavy Duty vehicles are kept in a state of good repair	Renewal/O&M	Mean Distance Between Transit Failures (MDBF)	Heavy Duty Vehicles	24,000 km	Minimum of 18,000 km
Function	Transit Services are green and environmentally sustainable	Upgrade	GHG emissions in tonnes of eCO2 for Transit Buses	Heavy Duty Vehicles	37,130 tonnes of eCO$_2$	95% emission reduction compared to 2019 levels as early as 2040 and no later than 2050
Function	Transit Services are green and environmentally sustainable	Upgrade	GHG emissions in tonnes of eCO2 for Transit support fleet (low and medium duty)	Transit Support Fleet	413 tonnes of eCO$_2$	*80% reduction in GHG for by 2035 (based on Sustainable Fleet Strategy 2021-2035)*

* CLOS are based on 2022 performance

B.4 (Transit Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth & Net Migration	Brampton has been experiencing significant population growth over the past decade. This growth in population has been outpaced by the growth of transit ridership, with the exception of 2020 to 2022, which saw a drop in ridership due to the effects of the Covid-19 pandemic.	Brampton's transit ridership is expected to increase at a rate that is faster than the population growth due to the artificially low ridership figures as a result of the pandemic.	Transit-on-time performance is expected to decrease as loading and offloading times increase along with ridership, and traffic congestion continues to worsen as population increases. Overcrowding has become more common due to stagnant service growth alongside ridership growth. Without any changes in service, new development will result in the decrease of customer proximity.	↑	Adapt planned route times to account for the changes in route running time. Specific routes that are impacted by traffic congestion will be identified by closely tracking the on-time performance and the effect of changes implemented. Working with Planning and Development Department to provide new routes and transit stops to service new developments. - New service for every area with 400 residents, 500 employees, or 450 residents/jobs within 400m of an expanded service. Increase service for ZÜM Pearson and total number of routes available with ZÜM Chinguacousy and ZÜM Bramalea new shelters will ensure 90% of boarding's happen at stops with a shelter As a direct result of the service expansion planned, it is anticipated that capacity pressures at two facilities will return. A new third transit facility is planned near the Highway 50 and Cadetta Road intersection in the northeast quadrant of Brampton to address projected fleet growth and electrification.	Bus shelters totaling about $8.0 million over the next 10-years. 279 new vehicles for new and expanded service = $539.2 million over the next 10 years (hybrid and diesel buses). It is expected that the City may tap into the Canada Infrastructure Bank (CIB) for the new electric vehicles. Non-revenue fleet – Approximately 30 vehicles required over the next 10-years (replacement & growth needs). Facilities totaling $1.2 billion over the next 10-years.

B.4 (Transit Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Urbanization	Brampton is considered the fastest growing City in Canada and with new greenfield land opportunities continuing to diminish, development is intensifying in already established and built-up areas.	As Brampton continues to grow, increased urbanization is expected to achieve and accommodate the provincial and regional growth figures.	New urban development result in constant changes in demand for service in specific areas. Overcrowding has become more common due to stagnant service growth alongside ridership growth in highly urbanized areas.	↑	Reallocating buses that are not meeting the minimum performance thresholds of their routes to increase the number of buses in highly urbanized areas. On-demand transit can be used to address underutilized areas of low ridership and dispersed populations. Investment into the monitoring of service will help to keep pace with growth of ridership and adapt to changing travel patterns. Development of guidelines for adding additional capacity when thresholds for passenger load are being exceeded regularly. Usage of community bus routes linking higher-density residences and community destinations, as well as school specials and employment shuttles to deal with crowding due to periods of peak demand. increasing services on main corridor to connect to future LRT lines	Same costs as identified in above population and net migration demand driver. Higher order transit projects include LRT extension tunnel alignment, BRTs including Steeles Corridor and Bovaird/Airport Corridor, and ZÜM enhancements for a total of $5.6 billion.

B.4 (Transit Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Climate Change	Heavy-Duty Transit fleet is one of the main contributors of GHG emissions in the City. Technological advancements now allow for the replacement of conventional buses with electric options, aligning with Council's goal of becoming more environmentally friendly.	It is projected that advancements in technology will continue to be made, resulting in greener options become more affordable, and transit will get closer to their service level target of 100% hybrid or electric buses.	The transit service itself is not impacted by using conventional buses to deliver the service Existing conventional buses are higher contributors to GHG Emissions and impact the city's ability to achieve the corporate climate goals.	↑	Conventional buses should be replaced with hybrid or electric options when they are due for replacement. Decommissioning any conventional busses earlier than required and replacing them with a "greener fleet" would be an additional cost Retrofitting the existing Sandalwood Facility (325 bus capacity) and Clark Facility (148 bus capacity) to support transition to a fully electric zero emission fleet will be required. This will include the necessary electric vehicle charging equipment and allied infrastructure requirements.	Electrification upgrades to existing facilities and construction of a new electrified transit facility is already included in above demand driver (population growth) and not restated. • Short-term charging - not in immediate plan. Charging at main facility. Greening fleet - fuel cell buses are at least $2.1M per bus - City not that close to purchasing many of these yet but will be in the future. Currently, only 2 new fuel cell busses included in the 5-year business plan. For electric busses - $1.7M per electric Bus. These might be more common and might replace traditional conventional buses as infrastructure comes online, supply of buses opens up and service provider is in place. Currently, 10 more electric buses are identified in the 5-year business plan in addition to the 8 in service. Energy Service Partner - preferred route to have someone manage assets. Fees associated with energy service partner are to be determined and will be in addition to electricity costs.

B.4 (Transit Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Technological Changes	Transit technology systems play a vital role in Brampton Transit operations and their ability to communicate to the public. Brampton Transit has a full suite of technologies that supports service development, delivery and maintenance. As the organization has grown, it has modernized its technologies to better support growth and other strategic directions.Despite immediate ridership impacts as a result of the pandemic, regular service has largely resumed and the pandemic has highlighted the need for previously underutilized technologies	It is projected that advancements in technology will continue to be made which would enhance service provision, customer service and experience and technology capabilities.	Availability of Transit Services and on time performancePayment opportunities (fare box recovery)Communication	↑	• Review Fare technologies - considering mobility in a holistic way for better integration with active transit.Improvements to information access which including trip planning and real-time service information.On-demand transit management platform: includes dynamic scheduling and routing technology, driver interface and a customer-facing app and booking portal; • Smart Bus Computer Aided Dispatch / Automatic Vehicle Location, or CAD/AVL System Replacement: includes operational systems to monitor operations in real-time both on-street and within transit operations facilities, operator communications systems and automatic passenger counting technology; • Smart Bus Passenger Information systems: includes on-street signage, Interactive Voice Response (IVR) and customer service call routing systems;• Evaluation and strategy to replace existing aging fare boxes; • Transit scheduling system (HASTUS) upgrade; • Expansion of electric chargers to support growth in electric fleet; and • Modernization of Business Intelligence applications to provide streamlined data to better inform reporting, planning and decision making.The increase in demand and the public expectations mean that Transit needs to invest on Maras (mobility as a service) technologies and continue to enhance its customer information features. MaaS, has two components, one is how to factor the impact of multiple modes into the fix route schedules and two how to communicate these multiple options as standalone and/or combined to riders.Data Analytics is another aspect that will require investment but mostly on human capital that is how to better leverage and integrate the data that is generated already from transit technology.	Technology cost = $8.4M budgeted for electrification software, and major hardware/software.

B.4 (Transit Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Customer Preferences	The City of Brampton continues to focus on implementing items to address overcrowding and import service quality.	Brampton is making a concerted effort to address customer demands with frequency increases within the conventional network will bring more routes into alignment with the service utilization guidelines as well as significantly improve passenger comfort, reliability and grow ridership in situations of high demand.	- Increased utilization of already popular routes has decreased the customer comfortability due to overcrowding. - Heightened demand for cross-border services to bridge adjacent municipalities together. - Peak-period demands based on customer preferences and diverse base of ridership use. - New active transportation measures can impact demand on services.	↑	Close monitoring of passenger comfort guidelines against the number of riders on-board, as well as tracking the number of passengers that are unable to board during peak demand periods. Align service with adjacent transit service areas to ensure integration between transit systems and as little duplication of service as possible. Based on the Business Plan, Customer Experience creates demand on Technology: Real-time service information through the Triplinx app, provide free Wi-Fi at Brampton Transit Terminals, equip new buses with signal priority features (which also helps improve on-time performance), and improve data reliability. Launch new on-demand transit services to improve service coverage and meet residents' diverse needs.	$10.4 M - other capital costs from business plan (includes minor capital projects and technology maintenance and support) Costs from other demand drivers could also be applicable but not restated in this section. Transit is utilizing technology to track customer preferences demand and develop responses. Transit will require technology to capture data on active transportation demand and impacts on Transit demand.

B.5 (Transit Services) – Risk Management

Risk Identification

Consequence					
	C1	**C2**	**C3**	**C4**	**C5**
P5	Medium	Medium	High	High	Extreme
P4	Low	Medium	Medium	High	High
P3	Low	Low	Medium	Medium	High
P2	Insignificant	Low	Low	Medium	Medium
P1	Insignificant	Insignificant	Low	Low	Medium

(Likelihood shown vertically on left axis)

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions	Consequence				
	C1	**C2**	**C3**	**C4**	**C5**
P5	$0.0	$0.0	$1.1	$0.0	$0.0
P4	$0.0	$0.0	$1.3	$0.0	$0.0
P3	$2.3	$0.0	$26.2	$495.3	$0.0
P2	$0.0	$0.0	$23.8	$0.0	$0.0
P1	$0.0	$0.0	$11.6	$0.0	$0.0

(Likelihood shown vertically on left axis)

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Transit. In total, about $561.6 million in assets have been assessed. Of the $561.6 million, about $34,800 (less than 0.5%) have been assessed to be in the Insignificant risk category. About $37.7 million (7%) have been assessed as Low risk, and the majority of the assets, approximately $522.8 million (93%), are assessed to be in the Moderate risk category. The remaining $1.1 million (less than 0.5%) have been assessed as High risk. No assets have been assessed to be in the Extreme risk category.

Transit - Summary of Risk Assessment by Replacement Value ($ Millions)
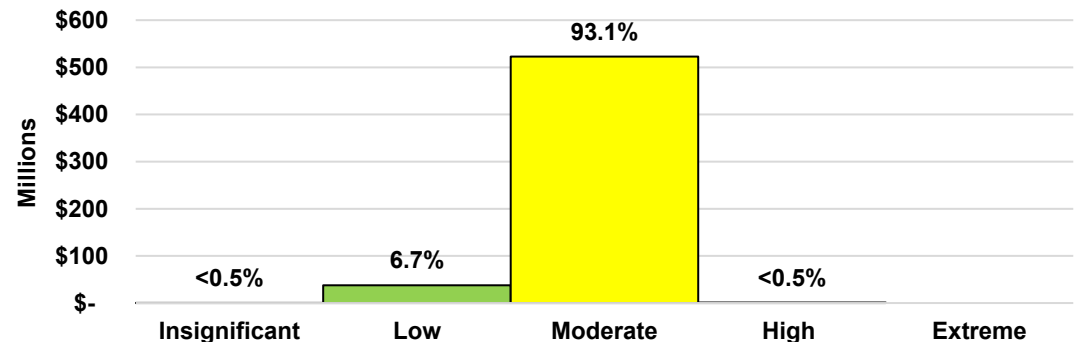
Category	Value
Insignificant	<0.5%
Low	6.7%
Moderate	93.1%
High	<0.5%
Extreme	

(Y-axis: Millions, $- to $600)

Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:

- The risk map indicates that there are no assets which fall into the Extreme risk category. That said, there are a relatively small value of assets which are assessed as High risk.
- The $1.1 million of assets within this High-risk category is composed of specialty equipment, support fleet and some on-road facilities which have been classified at High probability of failure (P5). However, it is noted that most of these assets utilize an age-based approach to determine conditions and many are beyond their useful life. Although not in High risk, the entire fleet of heavy-duty (or revenue) transit vehicles, with a value of about $495 million, are classified as Moderate risk because despite being in good condition on average, the consequence of failure for these assets is high (C4). Transit has noted that there is not enough capacity to service peak demand periods and therefore Moderate risk remains for these assets.
- Management is strategically planning to mitigate the capacity and quality issues of the High-risk assets. Replacement of the specialty equipment and support fleet that are beyond their useful lives will reduce the likelihood of failure for the High-risk assets. Transit is moving towards implementing an inspection plan for shelters that are nearing the end of useful life to identify those requiring replacement. Finally, risk should be monitored going forward to ensure the heavy-duty vehicles do not move to a High-risk classification.

APPENDIX B.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Transit Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, AssetWorks(M5), Hastus, ESRI GIS, Archibus, CityWorks, Smartbus, CoenCorp, PeopleSoft, Questica			
Information Categories (Data Type)	Roadmap Strategy Plans	Sub-category Status	Next Steps
HR **Holistic Review** (Overall Review of SA)	**1.1** Active Holistic Review of Business Requirements (High Level)	Completed	CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.
DM **Data Management** (Governance and Collection)	**1.1** Formalize asset data governance including interdependent assets	In progress - Significantly Completed	Clarification of asset ownership for interdependent assets with other service areas (i.e. Facilities and IT).
	1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	In progress - Significantly Completed	Confirm and finalize the implementation of: - Asset Information Standards and processes to intake information including from the developers and from asset supplier. - Transfer standards into procurement process to make it part of the tender documents for major assets particularly for EVs and Ev technologies and conducting comprehensive review of manufacturers' recommendation on LC activities and/or benchmarking comparable municipalities.
SOI **State of Infrastructure** (Asset ID, Location, Classification, Physical Attribute, Condition)	**1.1** Improve on inventory data and attributes.	In progress - Significantly Completed	Transition from Archibus to VFA in order to establish condition assessment protocols for Transit shelters. Improving AssetWorks(M5)'s records (ie.fuel/energy management modules to capture) and analyse the vehicles' LC data and enable users to better leverage energy consumption in LC decision making process, both for conventional and EV vehicles.
	1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions. Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.	In progress - Significantly Completed	Consider adding new attributes for new asset categories. (i.e.. battery info, charger type for Hybrid/EVs). Consolidate and confirm inventories under single management solution (i.e.. Asset Works). Implement data models and migrate asset attributes to the system of record Implement Asset IDs across IT systems (SmartBus, Farebox), establish connection to Buses ID's for on-board systems to move away from FilemakerPro Application TECCS to AssetWorks (M5) .

APPENDIX B.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Transit Services **Asset Information Systems Maturity Tracker and Roadmap Update**			
Asset Related Software Solutions or Tools: **Excel, AssetWorks(M5), Hastus, ESRI GIS, Archibus, CityWorks, Smartbus, CoenCorp, PeopleSoft, Questica**			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In Progress - Minimally Completed	Identify if any specific attributes required for all LOS tracking as applicable to all asset classes in addition to the standard City attributes and those that have been already implemented. This involves defining performance metrics and targets considering factors such as fleet's performance, functionality, reliability, and usage patterns.
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In progress - Significantly Completed	Review how performance metrics tracked by current published boards are coordinated with LOS framework and if attributes feeding into these metrics need improvement. Implement a structured approach for collecting, analyzing, and reporting LOS data to the City's dashboard.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	Not Started	Review where improved linkage can be attained. Conduct a comprehensive analysis to identify and quantify the direct and indirect costs related to maintaining service levels.
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Identify data sources (i.e.. costing) in order to carry out lifecycle activity calculations for the remaining asset classes, specifically for O&M. Analyze lifecycle prediction data to anticipate asset maintenance and replacement needs, optimize resource allocation, and minimize downtime.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In progress - Significantly Completed	Further expand the use of advanced technologies, such as telematics systems and further improvisation in fleet management software (AssetWorks - M5).
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In Progress - Minimally Completed	Use a standardized risk assessment criteria used in the asset management plan, to evaluate asset criticality and prioritize risk mitigation efforts. Incorporate risk assessments into decision-making processes to proactively address potential issues and minimize operational disruptions.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Develop procedures of Transit Facilities CRV update consisting from the base facility cost (VFA) and specialised Transit equipment within the facility (ie.Charging System). Develop a standardized procedure and frequency for updating the Current Replacement Value (CRV) of assets, rather than relying solely on purchase year and inflation adjustments.
	1.2 Develop requirements and explore use of current systems for decision support	In progress - Significantly Completed	Use Corporate Asset Management (AM) module specifically designed for Fleet Management System M5 which can either used for Decision Support or link to a DSS for financial decision making.
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	Not Started	Enhance the existing lifecycle cost model to capture all relevant lifecycle activities using telematic systems, mobile applications etc. Refer to LC 1.1 (Lifecycle Strategy data type 1.1)

B.7 (Transit Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$39.6M Total O&M Cost per Annum
($M)

Transit Facilities (On Road), $0.1, 0.2%

Specialty Equipment, $0.1, 0.1%

Transit IT Infrastructure, $0.02, 0.05%

Support Fleet, $0.1, 0.3%

Transit Facilities , $4.9, 13%

Heavy Duty Vehicles (Buses), $34.3, 87%
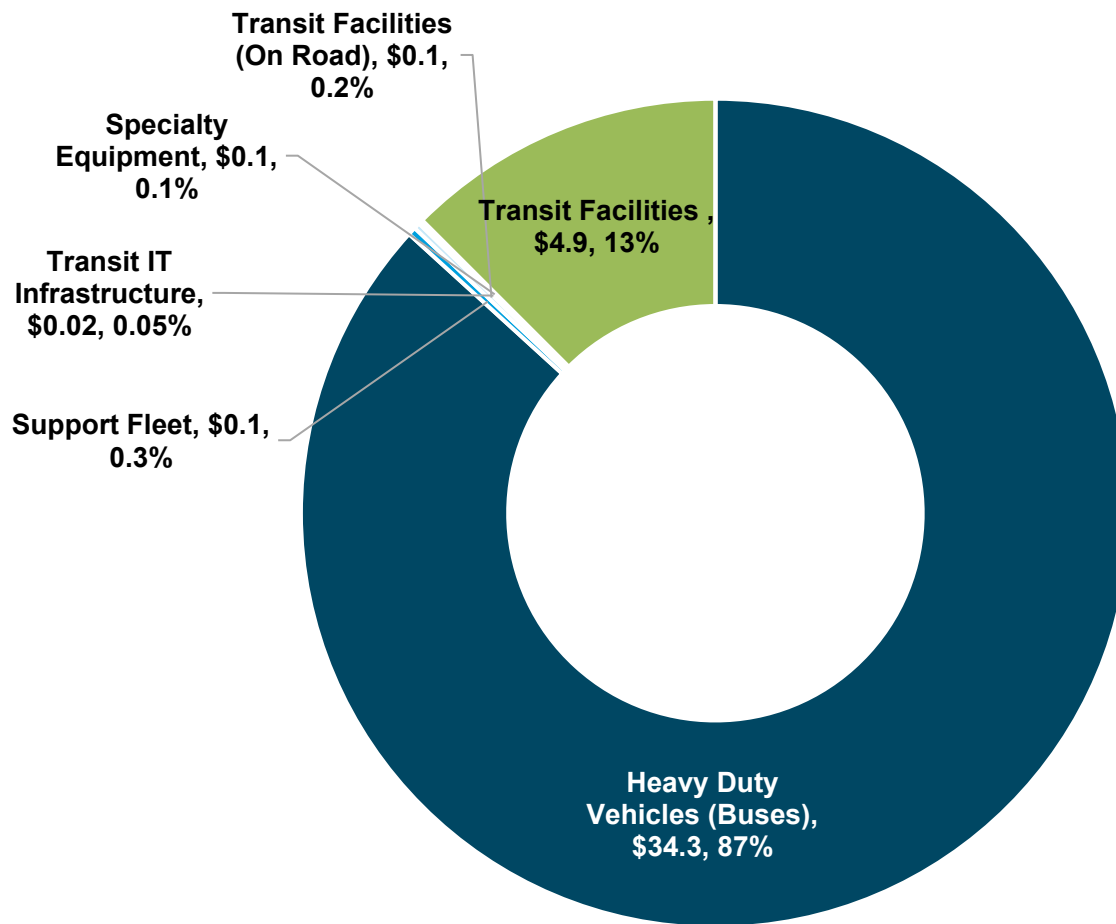
O&M Activities

- Largest component of O&M activities relates to the salaries, wages and benefits of those undertaking regular maintenance activities to ensure assets are in working order to avoid service interruptions.

- Heavy Duty Fleet maintenance activities include: vehicle cleaning and sanitations, lubricants, and tire pressure monitoring and rotations, repair work, etc.

- Additional maintenance activities include bus stop signage maintenance and installation.

- Transit services also maintains the facilities. This includes demand maintenance activities as well as outside service maintenance.

B.7 (Transit Services) – Lifecycle Management
Capital Activities

Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Heavy Duty Vehicles (Buses)	$495,251,000	18	Replacement & Renewal	$49,054,000
Support Fleet	$1,820,000	9	Replacement	$446,000
Transit Facilities (On Road)	$62,240,000	20	Replacement & Renewal	$4,061,000
Transit IT Infrastructure	$2,312,000	6	Replacement	$22,000
Specialty Equipment	$56,395,000	13	Replacement	$5,388,000
Transit Facilities	$197,104,000	N/A	Replacement	-
Higher Order Transit	N/A	N/A	Replacement	-
Non-Infrastructure Solutions	-	-	-	$220,000
Total	**$815,122,000**			**$59,191,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$59.2 million**.

Most of the costs can be attributed to the replacement and renewal of Heavy Duty Vehicles. The renewal activities include mid-life refurbishment activities on the engine, transmission, battery (electric & hybrid) and general refurbishment to extend the service life of a bus from 12 years to 18 years.

Capital needs for most of the Transit assets are based on the renewal/replacement activities triggered by condition and age of the asset. For others, such as IT Infrastructure and Support Fleet current level of funding was assumed adequate and existing budget is the basis for future capital requirements.

Non-infrastructure solutions (NIS) account for an additional $220,000 annually in capital spending.

Additional costs associated with Transit Facilities is captured in Appendix A (Facilities).

B.7 (Transit Services) – Lifecycle Management
Current Levels of Service Summary
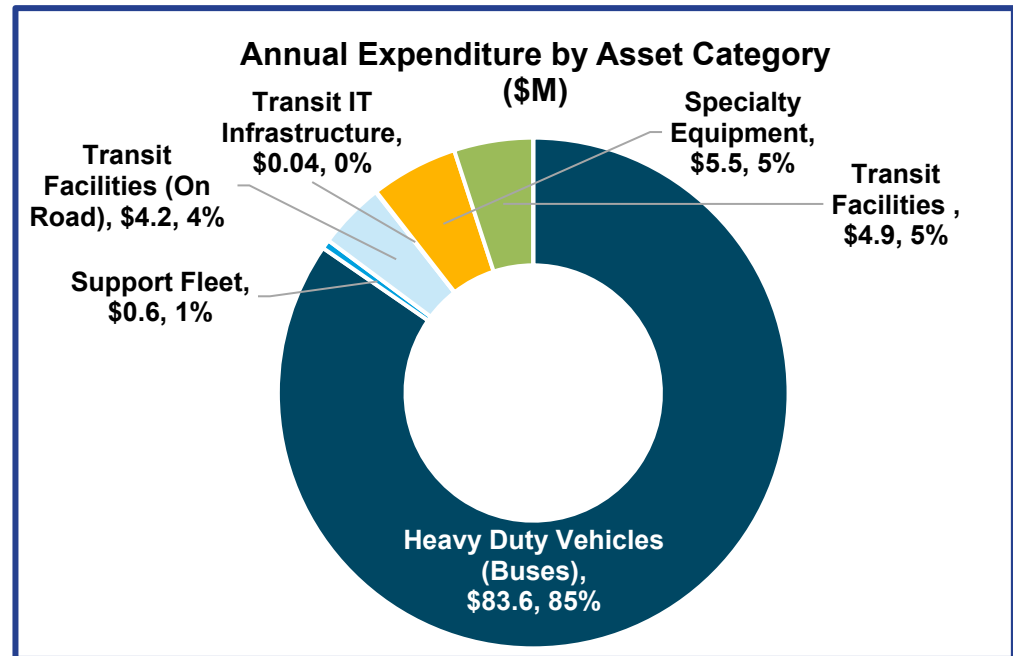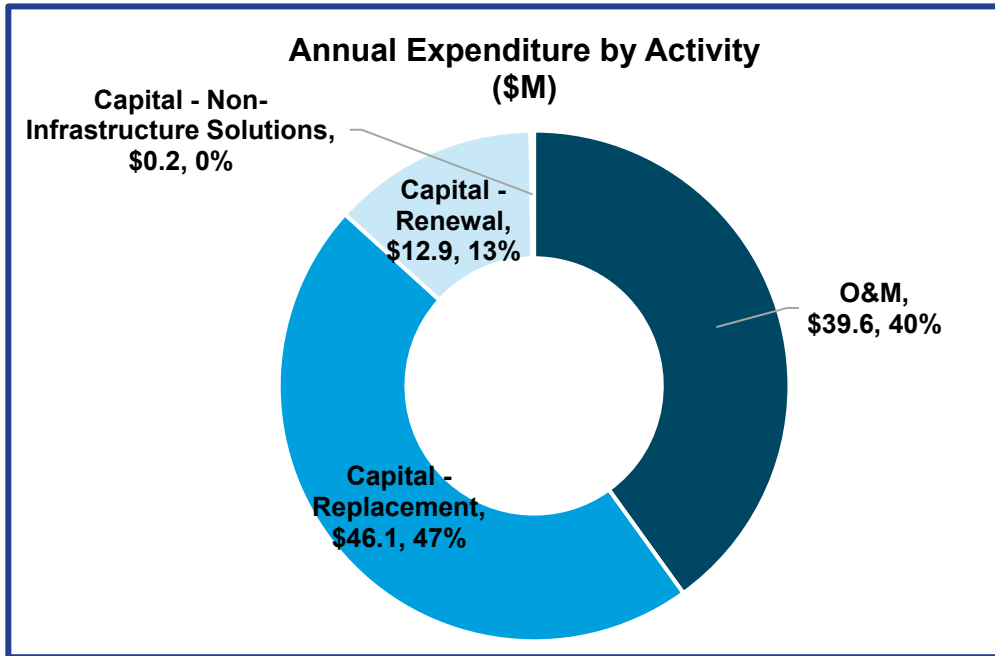
Annual Expenditure by Activity ($M)

- Capital - Non-Infrastructure Solutions, $0.2, 0%
- Capital - Renewal, $12.9, 13%
- O&M, $39.6, 40%
- Capital - Replacement, $46.1, 47%

Annual Expenditure by Asset Category ($M)

- Transit IT Infrastructure, $0.04, 0%
- Transit Facilities (On Road), $4.2, 4%
- Support Fleet, $0.6, 1%
- Specialty Equipment, $5.5, 5%
- Transit Facilities, $4.9, 5%
- Heavy Duty Vehicles (Buses), $83.6, 85%

Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Heavy Duty Vehicles (Buses)	$495,251,000	$34,322,000	$49,230,000	$83,552,000
Support Fleet	$1,820,000	126,000	$447,000	$573,000
Transit Facilities (On Road)	$62,240,000	$96,000	$4,083,000	$4,179,000
Transit IT Infrastructure	$2,312,000	$20,000	$23,000	$43,000
Specialty Equipment	$56,395,000	$50,000	$5,408,000	$5,458,000
Transit Facilities*	$197,104,000	$4,947,000	-	$4,947,000
Total	**$815,122,000**	**$39,561,000**	**$59,191,000**	**$98,752,000**

*Capital requirements related to Transit Facilities are captured in Appendix A.7 (Facilities)

B.7 (Transit Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($M)

- Heavy Duty Vehicles (Buses), $72.4 , 12%
- Transit IT Infrastructure, $1.7 , 0.3%
- Specialty Equipment, $0.9 , 0.1%
- Transit Facilities (On Road), $0.8 , 0.1%
- Higher Order Transit, $558.2 , 88%
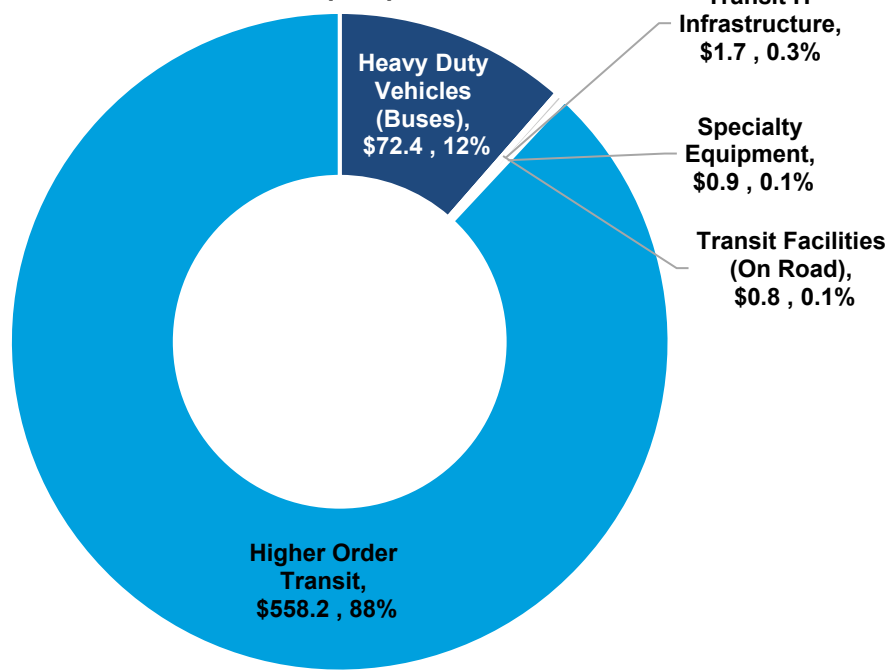
Proposed Levels of Service

- Of the total, Higher Order Transit represents the largest share of the total annual expansion and upgrade costs amounting to about $558.2 million.
- The first round capital costs would primarily be funded from the City's DCs, Upper Level Grants and the tax levy for non-growth shares of the projects. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these assets are expected to reach about $141.3 million at Year 10. Note, no OPEX or CAPEX impact is estimated for Higher Order Transit projects as the cost sharing arrangements are not determined.
- Proposed LRT included in DC Study will enhance urban mobility by providing convenient access, reducing congestion, promoting sustainability, and stimulating economic development along transit corridors.
- *Source: 2024 DC Study, 2023-2027 Capital Plan & Discussions with Staff*

$79.4M Annual OPEX Impact at Year 10

$61.9M Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Heavy Duty Vehicles (Buses)*	$53,917,000	$18,472,000	$6,064,255	$5,017,000
Support Fleet**	-	-	-	-
Transit Facilities (On Road)	$800,000	-	$42,525	$1,000
Transit IT Infrastructure	$1,730,000	-	$15,929	-
Specialty Equipment	$880,000	-	$67,692	-
Transit Facilities**	-	-	-	$2,906,000
Higher Order Transit	$558,200,000	-	-	-
Total	**$615,527,000**	**$18,472,000**	**$6,190,400**	**$7,924,000**

* Annual upgrade needs for Heavy Duty Vehicles (Buses) are related to upgrading from existing 40 ft Conventional Buses to 40 ft Hybrid Buses
** Support Fleet are part of the Sustainable Fleet Strategy approved by Council. The implementation of the strategy, and its associated costs are to be determined.
*** Expansion and upgrade needs and annual capital impacts for Transit facilities ae included under Appendix A.7 (Facilities).

B.8 (Transit Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Establish data collection to support operations planning for electrified facilities, charging stations and buses, ensuring comprehensive data mining and analysis to optimize life-cycle activities and operational efficiency.

- Establish process to annually update asset registries to reflect current replacement values based on recent acquisitions.

- Establish Asset Governance for the new Electrified Transit Facilities, including for EV chargers.

Process Optimization

- Increase understanding of the cost of additional ancillary charging infrastructure for inclusion in future iterations of the AMP.

- Explore opportunities to establish Service Level Agreements (SLAs) with IT, Facilities, Transportation and other departments to ensure alignment and collaboration in asset management initiatives and projects.

- Keep monitoring the cost estimates for big projects such as LRT and BRT and update their O&M implications as and when needed.

Technology & Tools

- Expand the use of advanced technologies, such as telematics systems and further improvisation in fleet management software (AssetWorks M5). Modernize Business Intelligence applications to provide streamlined data to better inform reporting, planning and decision making.

- Transition from Archibus to VFA in order to establish condition assessment protocols for Transit shelters.

Appendix

C

IT Services

C.1 (IT Services) – Maturity Assessment

53	**Pre-Project Score**
60	**Current Score**
86	**Target Score**

Activities to Achieve Target Score in Future

- Integrate demand forecasting by analyzing trends and business projections, and implement strategies to optimize IT service delivery, considering different demand scenarios and risk if demand is not met.
- IT assets are largely age based, however condition and performance information should be routinely captured, where possible. Incorporate predictive modeling of future condition and performance to assess whether levels of service can be met in the long term.
- Extend planning beyond three years, to forecast expenditures and investments and their operational impacts, incorporating various scenarios showing future possibilities and emerging technologies, aligning with long-term strategic goals.

Radar chart with axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement. Scale 0–100. Series: Pre-Project Score, Current Score, Target Score.

	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	51	63	87
Developing AM Lifecycle Strategies	47	51	82
Asset Management Enablers	59	64	89
Overall Score	53	60	86

APPENDIX C.2 - SOLI REPORT CARD

Information Technology

Asset Replacement Value:	$162.4 Million
Future Condition Trend (Next 10 Years):	Stable - Assets are replaced frequently and therefore remain in stable condition
Data Confidence & Reliability:	Medium (Condition Based)

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: "**Responsibility View**" and a "**User View**"

    Responsibility View: *Shows the assets under the service area that is responsible for managing them*
    User View: *Shows the assets under the service area that is using them*

While the User View shows the use of assets, the Responsibility View:

    ✓ provides a direct line of sight to those assets managed by the service area;
    ✓ will help prioritize lifecycle activities managed by the service area;
    ✓ aligns with industry best practices; and
    ✓ provides guidance to future asset management planning practice and departmental initiatives.

For IT, all assets are captured under the responsibility view as shown below (in $2023).

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by IT		
End User Information Technology	$8.3	8,499
Infrastructure Assets	$54.0	Pooled
Software	$100.1	109
Total Replacement Value (Responsibility View)	**$162.4**	**-**

APPENDIX C.2 - SOLI REPORT CARD

Information Technology

Major Types of Assets within IT - Responsibility View

The figure below illustrates the replacement value and condition of IT services under the responsibility view. The total replacement value of IT assets is $162.4 million, of which, over 60% of the total value is related to the City's software assets (both Corporate and those used by other service areas). Nearly 90% of IT assets are in Good or Very Good condition, with only 10% of assets in Poor to Very Poor condition. As IT assets are replaced and serviced frequently, their condition will remain stable. Overall, the Corporate IT assets are in Good condition and are meeting current needs.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

End User Information Technology, $8.3, 5%
Infrastructure Assets, $54.0, 33%
Software, $100.1, 62%
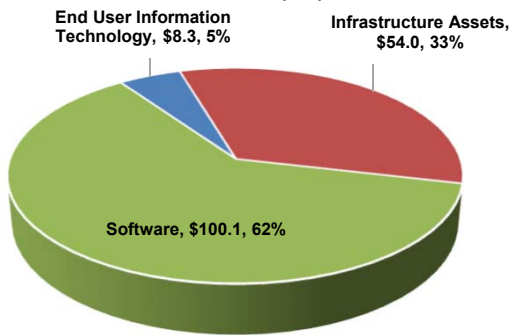
RESPONSIBILITY VIEW: IT ASSET CONDITION ($M)

Very Poor, $11.3 , 7%
Poor, $5.2 , 3%
Fair, $4.5 , 3%
Good, $37.8 , 23%
Very Good, $103.5 , 64%
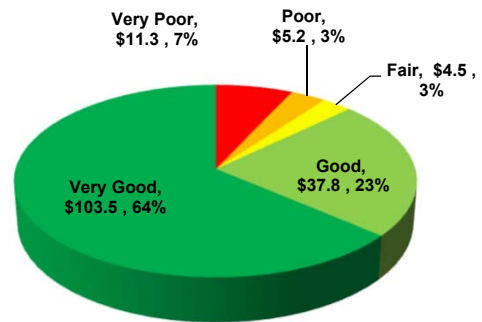
Data Source: Departmental Inventory

APPENDIX C.2 - SOLI REPORT CARD

Information Technology

Age Summary

The following figure summarizes the average age of the City's IT Assets compared to the estimated useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated. It is important to emphasize that the age of an asset relative to its useful life does not always provide a complete picture of its actual condition. Software has been left out of the age analysis below as it is a unique asset type.

Legend: ■ Average Age □ Expected Useful Life

Asset	Average Age	Expected Useful Life
COMPUTERS	3	5
MONITORS	4	7
MOBILE PHONES	2	4
AUDIO VISUAL EQUIPMENT	1	5
SERVERS	5	5
STORAGE AND BACK-UP	5	7
WIRELESS	6	7
CABLE PLANTS	14	20
NETWORK INFRASTRUCTURE	6	9
COMMUNICATION SYSTEM	9	11
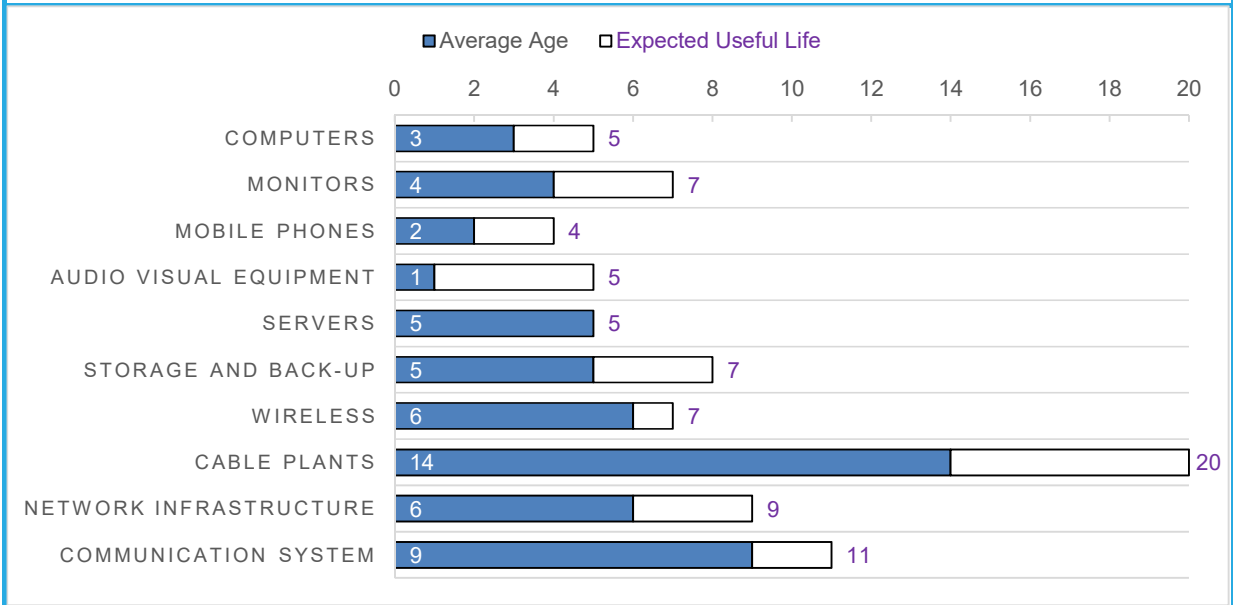
Condition Summary

The figure below illustrates the condition of the three sub-component assets of Information Technology services under the responsibility view. Software and Infrastructure Assets are mostly in Good to Very Good Condition. With this said about 43% of End User IT assets are in Poor and Very Poor condition. This condition mostly relates to computers and mobile phones which is based on age and indicates that these assets are nearing the end of an engineered useful life. In practice, these assets continue to be in good working condition and stay in use until they break or are unable to provide the desired levels of service.

Condition	End User Information Technology	Infrastructure Assets	Software
Very Good	10%	5%	100%
Good	18%	67%	
Fair	29%	4%	
Poor	23%	6%	
Very Poor	20%	18%	

Legend: ■ Very Poor ■ Poor ■ Fair ■ Good ■ Very Good
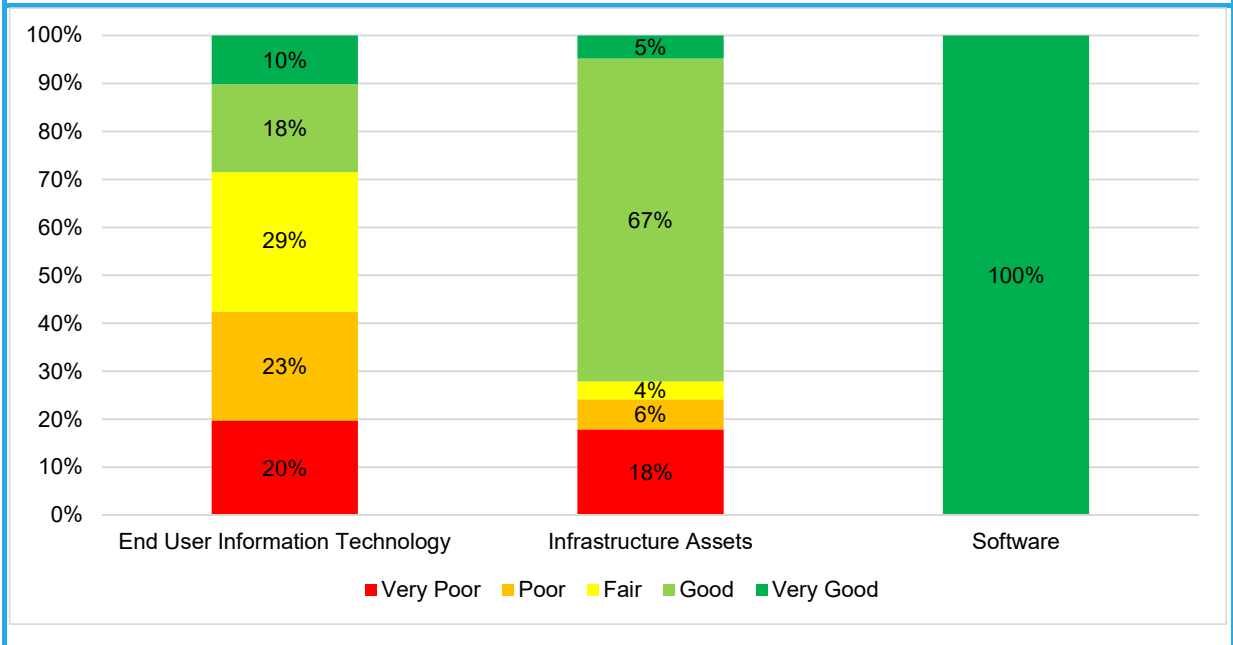
APPENDIX C.2 - SOLI REPORT CARD

Information Technology

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in IT assets in the 2022 SOLI relative to the 2021 SOLI, while considering reporting under the responsibility view. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

The total value of IT assets has increased from approximately $126.1 million to $162.4 million. The increase in value can largely be attributed to cost increases since the last report. Where available, recent costing data was used such as for Audio Visual Equipment, while the remaining asset replacement values were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Further information on the indices applied to each asset class can be found in Table 5 of this report. Additionally, the inclusion of a more robust valuation for software (i.e. the workforce (employment scheduling, time/attendance, etc.) and other software accounts for some of the variance.

Asset	2021 SOLI		2022 SOLI	
End User Information Technology				
Computers	3,700	Each	3,547	Each
Monitors	2,843	Each	3,200	Each
Mobile Phones	1,249	Each	1,530	Each
Audio Visual Equipment	144	Each	222	Each
Infrastructure Assets				
Servers	83	Each	83	Each
Storage And Back-Up	22	Each	22	Each
Wireless	806	Each	806	Each
Cable Plants	284,723	Meters	284,723	Metres
Network Infrastructure	671	Each	671	Each
Communication System	4,127	Each	4,127	Each
Software	102	Each	109	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
Assets Managed by IT				
End User Information Technology				
Computers	$ 6,112,146	$ 6,408,564	$ 296,418	5%
Monitors	$ 724,965	$ 891,363	$ 166,398	23%
Mobile Phones	$ 456,106	$ 637,291	$ 181,185	40%
Audio Visual Equipment	$ 228,588	$ 364,634	$ 136,046	60%
Infrastructure Assets				
Servers	$ 2,407,491	$ 2,682,435	$ 274,944	11%
Storage And Back-Up	$ 4,093,406	$ 4,102,673	$ 9,268	0%
Wireless	$ 1,939,127	$ 2,160,582	$ 221,455	11%
Cable Plants	$ 30,415,876	$ 33,889,474	$ 3,473,598	11%
Network Infrastructure	$ 6,111,292	$ 6,809,222	$ 697,931	11%
Communication System	$ 3,865,483	$ 4,306,935	$ 441,452	11%
Software	$ 69,766,763	$ 100,114,855	$ 30,348,092	43%
Total Replacement Value - Responsibility View	**$ 126,121,243**	**$ 162,368,028**	**$ 36,246,785**	**29%**

C.3 (IT Services) – Levels of Service

Server production uptime (%)

The server production uptime in Brampton has a current performance of 99.9%, with a target of 100%. Since there are already redundancies for high priority computing power, this very small gap between the current and target performance is expected. No net additional costs are required at the current level today, although, recognizing additional costs will be required to support growth.

Online services offered

There are currently 270 different services offered to be done online in the City. Staff have set a target of 300 by the year 2025, and plan to achieve this target by keeping hardware updated and modernized. The current budget levels are adequate to achieve this target, although staff may update this target in future years, which may require further costs to achieve. Furthermore, additional cost increases to support growth may need to be evaluated moving forward.

Percentage of self-service transactions

The current performance indicates 61% of all transactions were done by residents in a "self-service" manner. A reasonable target has been set to have 85% self-service transactions in 10-years. Staff have identified that the shift in demand towards these self-service transactions make it likely that this will be achieved without any further costs.

Open data sets published

The current performance shows that the City has published 301 open data sets for the public to see, and has set a goal to increase this by 5% per year. In order to achieve this year-over-year target, asset renewal is a key element, although current budget levels are adequate to perform the renewals needed. Non-infrastructure solutions such as internal communication and interdepartmental work are essential to publish these data sets to the public, and do not require any further costs from the service area.

Average response time to high priority (P1) incidents

Staff have identified that there are different incident priorities within IT Services, and that they currently respond to all high priority incidents within 24 hours. It is expected that the City would continue to provide this high service level, and no further costs are needed to maintain this service level. However, it is recognized that additional costs will be required to support growth.

IT Client Satisfaction Rating

IT Staff have provided the current performance of 74% Satisfaction Rating with IT Clients, and a target of 85% has been set to be reached over 10-years. IT Services will plan to continue performing customer satisfaction surveys, and would need to maintain flexibility and be transformative to adapt to changing tech landscapes. In their experience, much of the client satisfaction is dependent on their ability to provide up-to-date hardware and easy-to-use software. The cost to manage would vary from year-to-year based on stakeholder needs and results of the survey. No additional budget is required at this time.

Percentage of computer and related equipment disposed of in an environmentally friendly manner

IT Services currently disposes 100% of equipment in an environmentally friendly manner, and has set the target to maintain this high level of service. They do not foresee any issues as long as the current budget approval for asset retirement obligations is maintained.

C.3 (IT Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Capacity & Use	IT Services have sufficient capacity and available for use	Growth	Server production uptime (%)	Overall IT Services	99.9%	100%
			Online services offered		270	300 (by 2025)
			% of self-service transactions		61%	85%
			Open data sets published		301	+5% Annually
Quality	Customer issues are resolved in a timely manner	Renewal / O&M	Average response time to high priority (P1) incidents		<24 hours	<24 hours
			IT Client Satisfaction Rating		74%	85%
Function	Brampton IT assets are environmentally sustainable and actively pursuing green initiatives	Disposal	% of computer and related equipment disposed of in an environmentally friendly manner		100% of all equipment where feasible	100% of all equipment where feasible

C.4 (IT Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth & Diversity	The City of Brampton employs 6,500 people of diverse backgrounds to serve its growing population, including employees with visible and non-visible disabilities and impairments.	Brampton's population is projected to grow to 985,000 by year 2051 and it is expected that employees will increase along with it. Brampton continues to become more diverse, which is expected to result in an increased need for accessibility solutions which are often implemented by the Corporate IT team.	As the number of employees increases, the number of digital tools and IT-related physical assets will also need to increase to maintain service levels. Failing to continue to expand accessibility-related technologies would result in decreased services for those who require them.	↑	Business Systems Program- Maintain reliable networking and IT assets by improving lifecycle management through maintenance, replacement, and growth where required. Continue to acquire assets which enable all employees and residents the ability to access information and services	$11.3 M over the next 3 years. (Source: 2023 Budget)
Customer Preferences & Technological Changes	The City employs various technology solutions that are catered to the specific requirements of enabling each service area. The preferences of City employees and those of the taxpayer adapt to a varying set of needs as new technology becomes available.	With projected advancements in technology and further reliance on technology expected in the future, it can be anticipated that Brampton employees will continue to seek the most effective technology and hardware solutions to perform their jobs as efficiently as possible.	Employees and residents (with use of kiosks, service Brampton etc.) constantly seek out and require modern hardware and software solutions to perform their jobs as efficiently as possible. Failing to procure the proper technology and IT infrastructure enabling the departments to properly deliver the service may result in a decrease level of service impacting residents. Workplace modernization impacts how the City plans for space required.	↑	Corporate Technology Program- Constant push towards modernization of IT client services. Continue to monitor changes in technology and provide updated hardware and software solutions as they become available. Take into account employee complaints regarding speed of hardware and implement software trials where there is possibility for tech-related process improvements.	$9.8 M over the next 3 years. (Source: 2023 Budget)

C.4 (IT Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Legislative Changes & Council Decisions	The City of Brampton is a lower-tier community in the Region of Peel employing over 6,500 people. The Technology needs are derived from City employees, the Service Areas delivering the services to the residents, and the residents in some instances.	With changes in governance structures and Council priority to adapt to ongoing changes, the service area will need to adapt to the new landscape	New services downloaded will result in new employees and new IT infrastructure costs Other ongoing legislative changes can result in increased cost for IT but limited impact on services (i.e. records management or storage of personal information)	↑	City will have to adapt to the governance review and ensure existing service levels are maintained	Cost per new computer/workstation = $3,500-$4,000.

C.5 (IT Services) – Risk Management

Risk Identification

Consequence					
	C1	C2	C3	C4	C5
P5	Medium	Medium	High	High	Extreme
P4	Low	Medium	Medium	High	High
P3	Low	Low	Medium	Medium	High
P2	Insignificant	Low	Low	Medium	Medium
P1	Insignificant	Insignificant	Low	Low	Medium

(Likelihood shown on vertical axis)

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions	Consequence				
	C1	C2	C3	C4	C5
P5	$0.0	$0.0	$0.0	$11.1	$0.0
P4	$0.0	$0.0	$0.0	$5.0	$0.0
P3	$0.0	$0.0	$3.4	$7.2	$0.0
P2	$0.0	$0.0	$92.8	$40.3	$0.0
P1	$0.0	$0.0	$0.0	$2.6	$0.0

(Likelihood shown on vertical axis)

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for IT. In total, about $162.4 million in assets have been assessed. The majority of assets, about $95.4 million (59%) have been assessed as Low risk. Approximately $50.9 million (31%), are assessed to be in the Moderate risk category. The remaining $16.1 million (10%) have been assessed as High risk. No assets have been assessed to be in the Extreme risk category.

IT - Summary of Risk Assessment by Replacement Value ($ Millions)
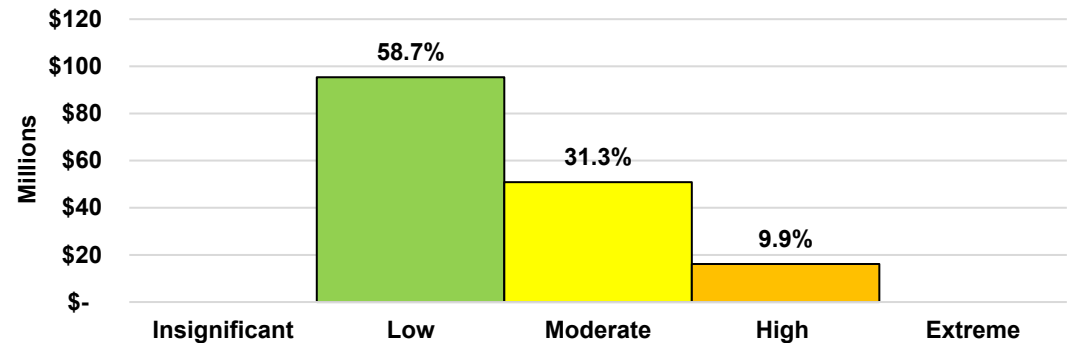
Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:

- The risk map indicates that there are no assets which fall into the Extreme risk category. That said, there are a relatively small value of assets which are assessed as High risk.

- The High-risk assets valued at about $16.1 million include only the End User assets and the network infrastructure that have a high probability of failure (P4 and P5) due to assets being in Poor and Very Poor condition. However, it should be noted that the asset condition has been calculated based on the assets age and therefore the analysis may represent a higher risk score solely based on this approach.

- The condition of these assets should be monitored as the infrastructure ages further. This will ensure the risk is manageable with efforts to allocate a higher proportion of budget to replacement needs. This would lessen the likelihood of failure by improving the average asset condition.

APPENDIX C.6 - ASSET INFORMATION MANAGEMENT STRATEGY

<table>
<tr><td colspan="4">IT Services
Asset Information Systems Maturity Tracker and Roadmap Update</td></tr>
<tr><td colspan="4">Asset Related Software Solutions or Tools:
Ivanti ISM, Excel, Peoplesoft, Questica</td></tr>
<tr><td>Information Categories (Data Type)</td><td>Roadmap Strategy Plans</td><td>Sub-category Status</td><td>Next Steps</td></tr>
<tr><td>HR
Holistic Review
(Overall Review of SA)</td><td>1.1 Active Holistic Review of Business Requirements (High Level)</td><td>In progress - Significantly Completed</td><td>CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.</td></tr>
<tr><td rowspan="2">DM
Data Management
(Governance and Collection)</td><td>1.1 Formalize asset data governance including interdependent assets</td><td>In progress - Significantly Completed</td><td>Review the process for intake of information from other departments or service areas and enhance quality assurance and quality control (QA/QC) practices.
This is specifically applicable to FOM and BDC service areas who independently acquiring modern assets that are heavily integrated with IT and may have their own solutions (i.e.. HVAC unit with IOTs). Some of these service areas are being engaged to stablish a SOP for these types of assets.</td></tr>
<tr><td>1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.</td><td>In progress - Significantly Completed</td><td>Review process to intake information from other departments/service areas and QA/QC of existing data.</td></tr>
<tr><td rowspan="2">SOI
State of Infrastructure
(Asset ID, Location, Classification, Physical Attribute, Condition)</td><td>1.1 Improve on inventory data and attributes.</td><td>In progress - Significantly Completed</td><td>Identify and move from age based to inspection based condition where possible.</td></tr>
<tr><td>1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions.
Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.</td><td>In progress - Significantly Completed</td><td>Continue to implement asset information into system of record.</td></tr>
</table>

APPENDIX C.6 - ASSET INFORMATION MANAGEMENT STRATEGY

IT Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Ivanti ISM, Excel, Peoplesoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Decide the frequency of updating LOS measures
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	Not Started	Update the Organizational performance group on the tracked LOS current performance for the dashboards
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In progress - Significantly Completed	Cost associated to some LOS measurers may need to be identified.
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Further improvements to calculate cost of performing lifecycle activities.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In progress - Significantly Completed	Continue to refine systems, tools and processes to close lifecycle information gaps
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In progress - Significantly Completed	Review and define data attributes to capture likelihood and consequence for risk identification.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Integrate asset replacement values with Asset Inventory System
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Begin process to assess viability of DSS
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In progress - Significantly Completed	Further improvement of lifecycle cost model to capture all lifecycle activities using information systems.

C.7 (IT Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$33.5M Total O&M Cost per Annum
($M)

End User Information Technology, $3.0, 9%

Infrastructure Assets, $4.3, 13%

Software, $26.1, 78%
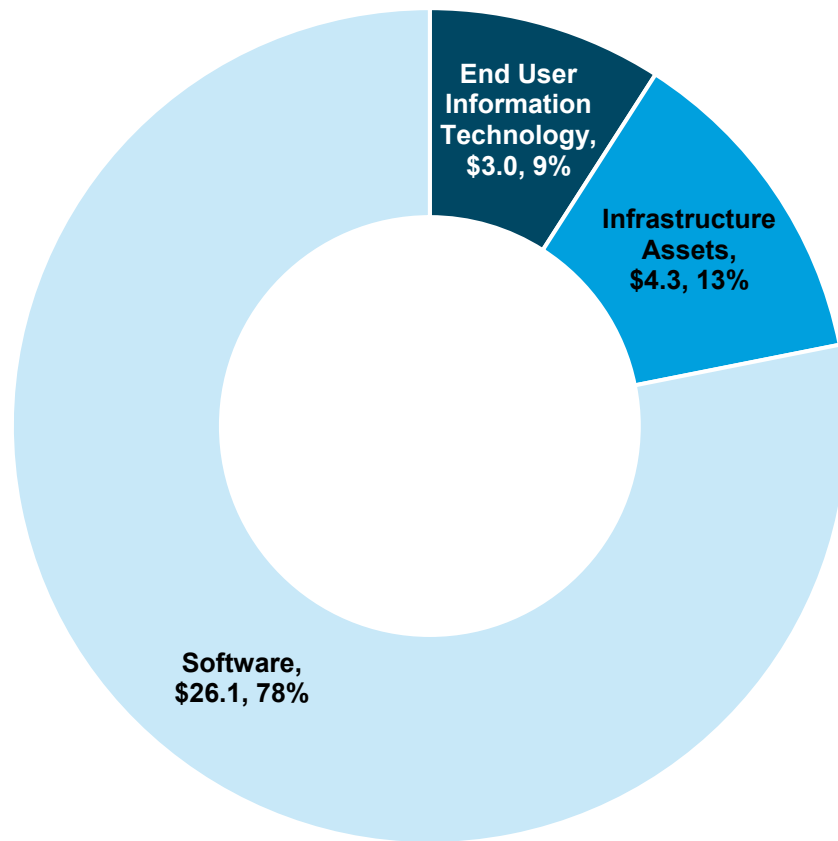
O&M Activities

- **Routine Maintenance:** Regularly scheduled tasks to keep IT assets in working order. Includes software updates, hardware inspections and cleaning to prevent dust and debris buildup.
- **Software Updates & Patch Management:** Applying software updates, security patches, and bug fixes to maintain secure and up-to-date IT systems.
- **Hardware Maintenance:** Physical inspections, testing and replacement of hardware components. Includes servers, network equipment and workstations.
- **Backup & Recovery:** Routine data backup procedures to safeguard against data loss. Includes testing and ensuring effectiveness of disaster recovery plans.
- **Security Audits & Compliance:** Regular security audits, vulnerability assessments and compliance checks to identify and address security risks and compliance with regulations.
- **User Account Management:** Managing user accounts, permissions and access control to protect sensitive information and maintain proper user privileges.
- **Cybersecurity Measures:** Implementation of security measures, including firewalls and intrusion detection systems.
- **Data Center Management:** Activities include cooling and power supply management to maintain data centers.
- **Network Management:** Monitoring and maintaining network infrastructure, including routers and switches.
- **Incident Response:** Developing and practicing protocols for responding to IT incidents, breaches and outages to minimize downtime and data loss.
- **Help Desk & User Support:** Providing technical support and assistance to end users and to resolve IT-related issues to maintain day-to-day operations.

C.7 (IT Services) – Lifecycle Management
Capital Activities

Asset Category	Sub-Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
End User IT	Computers	$6,409,000	5	Replacement	$1,457,000
	Monitors	$891,000	7	Replacement	$85,000
	Mobile Phones	$637,000	4	Replacement	$153,000
	Audio Visual Equipment	$365,000	5	Replacement	$70,000
Infrastructure Assets	Servers	$2,682,000	5	Replacement	$597,000
	Storage And Back-Up	$4,103,000	7	Replacement	$544,000
	Wireless	$2,161,000	7	Replacement	$378,000
	Cable Plants	$33,889,000	20	Replacement	$951,000
	Network Infrastructure	$6,809,000	9	Replacement	$964,000
	Communication System	$4,307,000	11	Replacement	$368,000
Software	Software	$100,115,000	N/A	Replacement	$293,000
Total		$162,368,000			$5,860,000

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$5.9 million**.

Most of the costs can be attributed to replacing City computers and Network Infrastructure when the asset reaches the end of its useful life.

For many of the assets, the ideal capital activity schedule would be to replace the asset at the end of its useful life.

Notably, for some sub-asset categories such as: monitors, cable plants and software, the current budget allocation has deemed to be sufficient for managing those assets.

Currently, no non-infrastructure solutions (NIS) have been identified.

C.7 (IT Services) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($M)

- Capital - Replacement, $5.9, 15%
- O&M, $33.5, 85%

Annual Expenditure by Asset Category ($M)

- End User IT, $4.8, 12%
- Infrastructure Assets, $8.1, 21%
- Software, $26.4, 67%
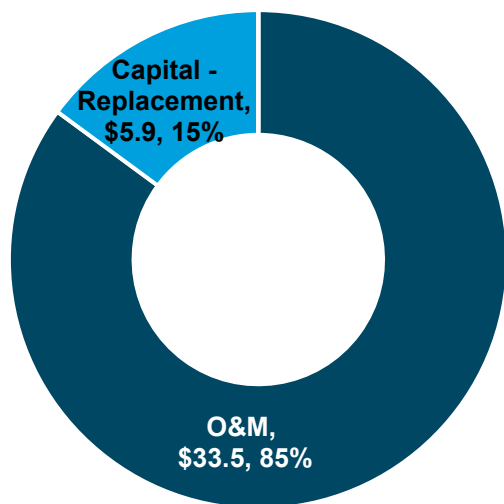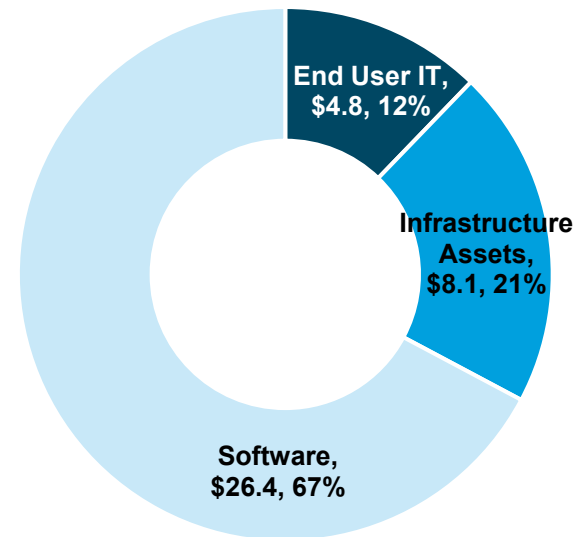
Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
End User IT	$8,302,000	$3,038,000	$1,765,000	$4,803,000
Infrastructure Assets	$53,951,000	$4,282,000	$3,802,000	$8,084,000
Software	$100,115,000	$26,135,000	$293,000	$26,428,000
Total	**$162,368,000**	**$33,455,000**	**$5,860,000**	**$39,315,000**

C.7 (IT Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($000)

End User IT, $27.4 , 1%

Infrastructure Assets, $119.6 , 4%

Software, $2,877.6 , 95%
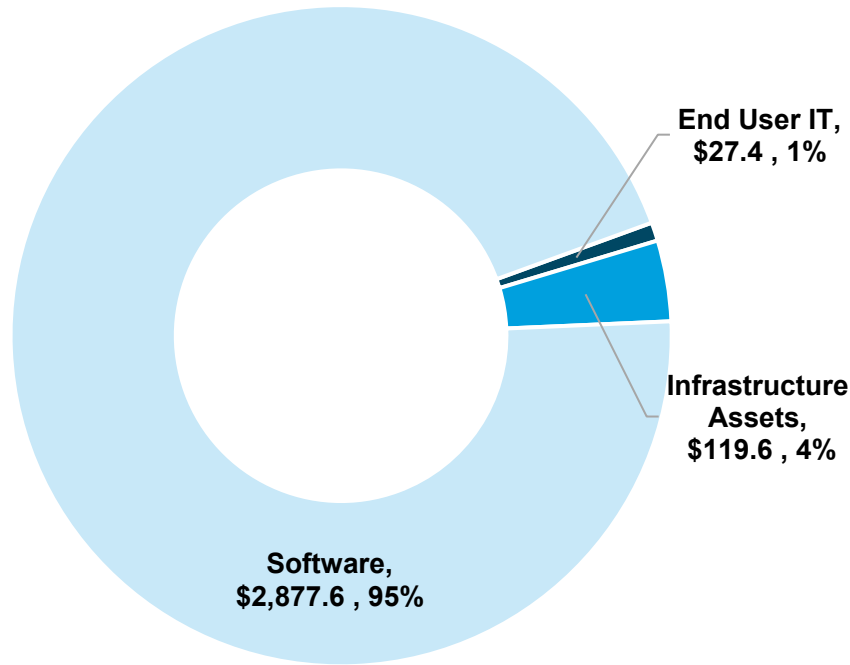
Proposed Levels of Service

- Of the total, software represents the largest share of the total annual expansion and upgrade costs amounting to about $2.9 million to meet the demands of a growing City.
- The first round capital costs would be funded from the City's tax levy. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $7.5 million at Year 10
- *Source: 2023-2027 Capital Plan & Discussions with Staff*

$7.3M Annual OPEX Impact at Year 10

$0.2M Annual CAPEX Impacts at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
End User IT	$27,400	-	$5,500	$8,100
Infrastructure Assets	$119,600	-	$7,500	$8,200
Software	$2,608,400	$269,200	$8,400	$717,100
Total	**$2,755,400**	**$269,200**	**$21,400**	**$733,400**

C.8 (IT Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Due to the ever evolving nature of software in today's technological climate, an annual review to better estimate both the useful life and replacement costs for all software assets would increase the data confidence of this asset category significantly.

- Continue to fill in data gaps in asset inventory, in-service years, historical costs, and estimated useful life where required.

- Consider establishing technical LOS for tracking the response time of all incidents, in addition to high priority incidents tracked currently.

Process Optimization

Review the process for intake of information from other departments or service areas and enhance quality assurance and quality control (QA/QC) practices.

Technology & Tools

- Continue to work with the Service Areas to refine systems, tools and processes to close lifecycle information gaps, particularly the ones that are at basic maturity.

D

City Support Fleet

D.1 (City Support Fleet) – Maturity Assessment

65 Pre-Project Score

73 Current Score

90 Target Score

Activities to Achieve Target Score in Future

- Integrate lifecycle analysis tools and methodologies into the procurement process to assess the long-term impact and value of potential capital investments. This should highlight the overall cost of ownership of the fleet assets.
- Integrate risk assessment into M5 to identify and prioritize potential risks associated with fleet assets, allowing for proactive mitigation strategies and resource allocation.

Radar chart categories: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement

Legend: Pre-Project Score, Current Score, Target Score

	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	60	77	91
Developing AM Lifecycle Strategies	66	70	86
Asset Management Enablers	69	73	92
Overall Score	65	73	90

Legend: Pre-Project Score, Current Score, Target Score

APPENDIX D.2 - SOLI REPORT CARD

 City Support Fleet

Total Asset Replacement Value (excl. Software):	$55.9 Million
Future Condition Trend (Next 10 Years):	Stable - Assets are replaced frequently and therefore remain in stable condition
Data Confidence & Reliability:	Low-Medium (Age and Condition Based)

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: **"Responsibility View"** and **"User View"**

Responsibility View: Shows the asset under the service area that is responsible for managing them
User View: Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View:

✓ provides a direct line of sight to those assets managed by the service area;
✓ will help prioritize lifecycle activities managed by the service area;
✓ aligns with industry best practices; and
✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
1. Assets Managed by Other Service Areas but used by City Support Fleet		
Software (Moved to IT)	$3.8	2
Subtotal (User View)	$3.8	2
2. Assets Managed by Fleet and Used by Other Service Areas		
Licensed Fleet	$37.3	503
Off-Road Vehicles	$18.1	255
Fleet Equipment	$0.4	88
Subtotal (Responsibility View)	$55.9	846
Total Replacement Value (User + Responsibility View)	**$59.7**	**-**

City Support Fleet excludes Transit and Fire Assets and Parks Fleet Equipment which are managed by their respective service areas.

APPENDIX D.2 - SOLI REPORT CARD

City Support Fleet

Major Types of Assets within City Support Fleet - Responsibility View

The figure below illustrates the replacement value and condition of City Support Fleet assets under the responsibility view. Under this view, the total replacement value of assets is $55.9 million. Approximately 67% of the total value is related to the City's licensed fleet. About 40% of assets are considered to be in Good to Very Good condition. However, about 32% remain in Poor to Very Poor condition. The condition of City Support Fleet assets for the most part is based on age and/or vehicle mileage and not necessarily always reflective of the comprehensive asset condition. Assets classified in "Poor" and "Very Poor" condition are not considered to be unsafe; the condition indicates only that assets are nearing the end of an engineered UL (with higher mileage) and may need to be replaced to avoid inflated maintenance costs.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Fleet Equipment, $0.4 , 1%
- Off-Road Vehicles, $18.1 , 32%
- Licensed Fleet, $37.3 , 67%
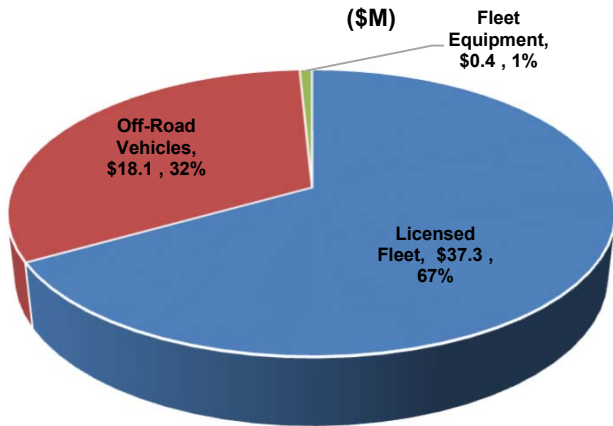
RESPONSIBILITY VIEW: CITY SUPPORT FLEET ASSET CONDITION ($M)
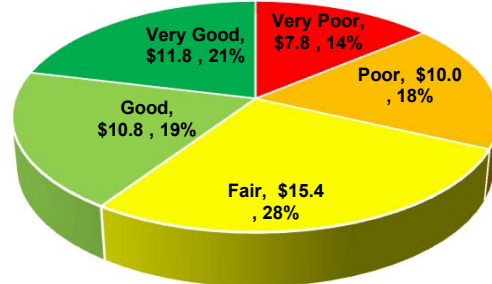
- Very Good, $11.8 , 21%
- Very Poor, $7.8 , 14%
- Poor, $10.0 , 18%
- Good, $10.8 , 19%
- Fair, $15.4 , 28%

Assets classified in "Poor" and "Very Poor" condition are not considered to be unsafe; the condition indicates only that assets are nearing the end of an engineered UL (with higher mileage) and may need to be replaced to avoid inflated maintenance costs.

Data Source: Assetworks M5-Fleet Management Solution

Major Types of Assets within City Support Fleet - User View

The figures below illustrate the replacement value and condition of City Support Fleet assets under the user view. Under the user view illustration, which captures software, the replacement value is about $3.8 million. All software assets are considered to be in Very Good condition.

USER VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Software, $3.8 , 100.0%
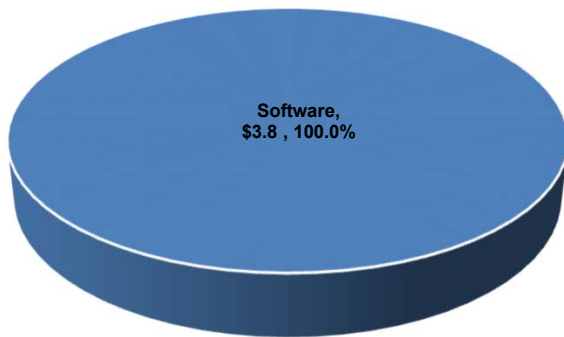
USER VIEW: CITY SUPPORT FLEET ASSET CONDITION ($M)

- Very Good, $3.8 , 100%

APPENDIX D.2 - SOLI REPORT CARD

City Support Fleet

Age Summary

The following figure summarizes the average age of the City Support Fleet assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated.
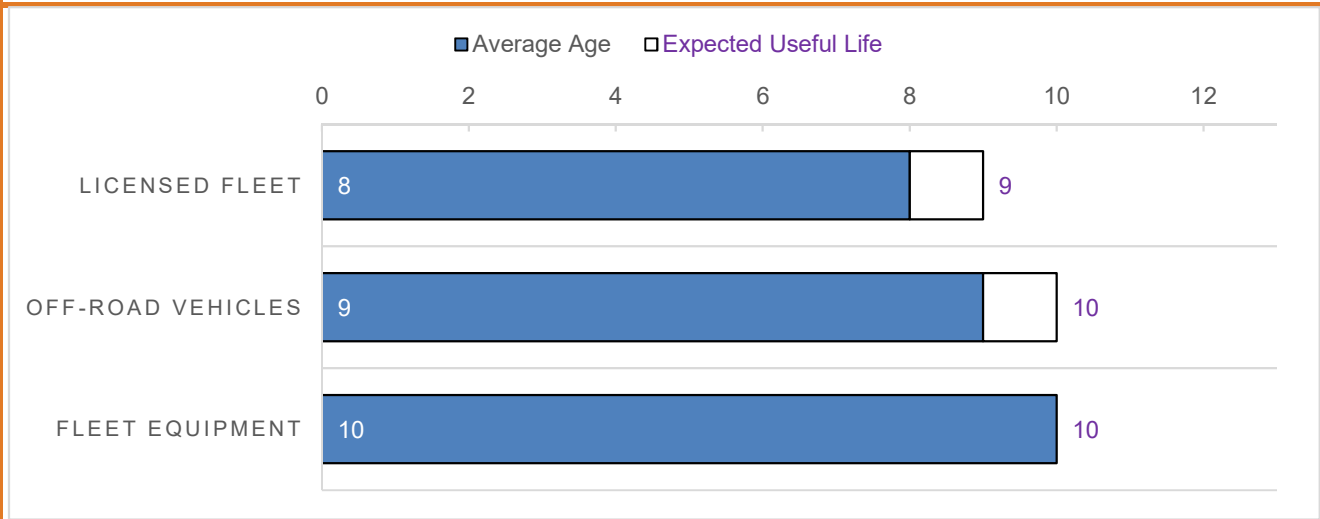
Condition Summary

The figure below illustrates the condition of the various City Support Fleet assets by key sub-component areas based on the user and responsibility views. While a portion of the assets are in Good to Very Good condition, a share of the Licensed Fleet, Off-Road Vehicles and Fleet Equipment are in Poor or Very Poor condition. It is important to note that assets classified in "Poor" and "Very Poor" condition are not considered to be unsafe; the condition indicates only that assets are nearing the end of an engineered UL (with higher mileage) and may need to be replaced to avoid inflated maintenance costs.
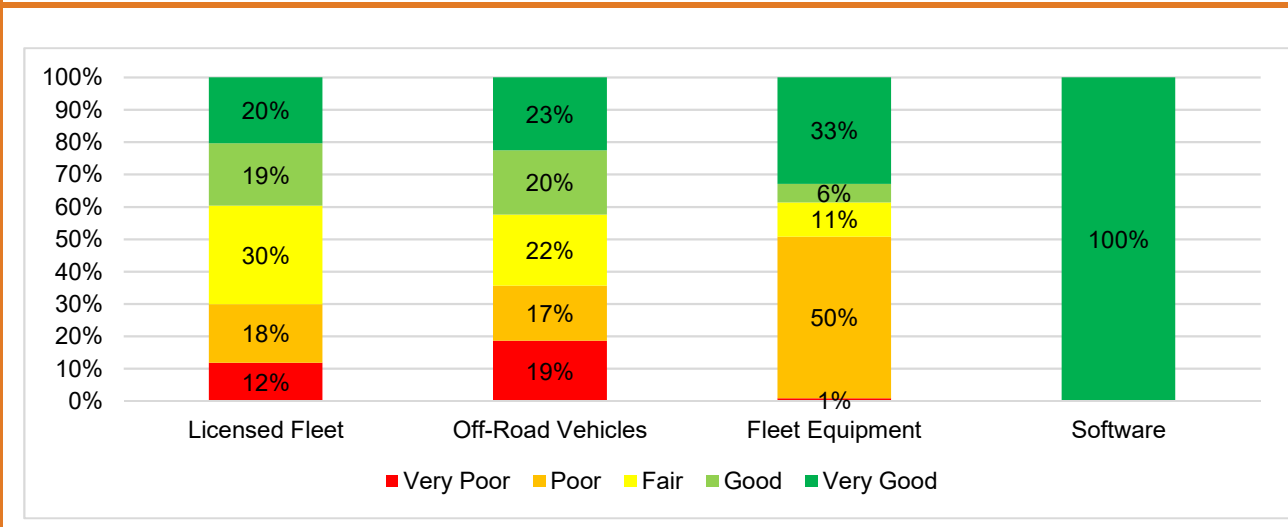
APPENDIX D.2 - SOLI REPORT CARD

City Support Fleet

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in City Support Fleet assets in the 2022 SOLI relative to the 2021 SOLI while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the total value of City Support Fleet assets has increased by 13% from approximately $49.3 million to $55.9 million. The increase in value can largely be attributed to cost increases since the last report. As recent costing data was not available, the Fleet asset replacement values were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report. Conversely, when considering assets only used by City Support Fleet (i.e. Software), the total asset value is equal to $3.8 million, which does represent a significant increase when compared to 2021. This variance can be attributed to overall increases in costs and data improvements on software asset valuations.

Please note the IT report card will include additional information (including the inflation measure applied) on those assets used by City Support Fleet but maintained and managed by a different City department.

Asset	2021 SOLI		2022 SOLI	
Licensed Fleet	500	Each	503	Each
Off-Road Vehicles	295	Each	255	Each
Fleet Equipment	88	Each	88	Each
Software	2	Each	2	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas and Used by City Support Fleet*				
Software	$ 790,704	$ 3,780,158	$ 2,989,454	378%
Subtotal Replacement Value - User View	**$ 790,704**	**$ 3,780,158**	**$ 2,989,454**	***378%***
2. Assets Managed by City Support Fleet and Used by Other Service Areas				
Licensed Fleet	$ 32,928,555	$ 37,333,003	$ 4,404,448	13%
Off-Road Vehicles	$ 15,992,716	$ 18,113,857	$ 2,121,142	13%
Fleet Equipment	$ 371,534	$ 438,528	$ 66,993	18%
Subtotal Replacement Value - Responsbility View	**$ 49,292,805**	**$ 55,885,388**	**$ 6,592,583**	***13%***
Total Replacement Value (User + Responsibility View)	**$ 50,083,509**	**$ 59,665,546**	**$ 9,582,037**	**19%**

*Responsibility of managing the assets lies with another service area, but assets are used by City Support Fleet

Availability Percentage (% of hours fleet is available and not being serviced)

The City's corporate support fleet available for service 90% of the time – this measure is quantified as the percentage of hours that fleet is available for use, and not being serviced. The long-term target set by staff is to keep this percentage equal to or above 85%. By continuing to focus on preventative maintenance compliance and by utilizing 3rd party vendors to assist with labour shortages of internal mechanics, the staff can continue to meet this target without any additional costs.

GHG emissions in tonnes of eCO2 for Overall City Support Fleet (except Fire and Transit)

The most recent estimates for GHG emissions come from the Sustainable Fleet Strategy, and is estimated at 2,663 tonnes of eCO2 from all city fleet (with the exception of fire and transit vehicles) in 2019. The Sustainable Fleet Strategy identifies an 80% reduction in GHG by 2035. Ranging from least to most expensive, three different strategies can be implemented to achieve this target: Lifecycle optimization and best management practices implemented through policies and fleet training; Low-carbon fuel switching to biodiesel-use in a higher proportion of fleet; and transitioning to Battery Electric Vehicles when assets are due for replacement. The Sustainable Fleet Strategy recommends that all three of these options are exercised to achieve the greatest reduction of GHG emissions at the best value, and estimates that the cost would be $8 million per year until 2035. Ancillary infrastructure to support additional electric vehicles would also be required to the extent that the ladder strategy is exercised.

Percentage of Licensed Vehicles at or above "Fair" condition

About 68% of the City's licensed corporate fleet is at or above "Fair" condition. Staff have determined that a reasonable target for this level of service measure is to be greater than 80%. Increasing the capital renewal budget would allow for more frequent vehicle replacements at the end of the assets useful life, rather than replacing the assets upon failure. The capital budget request was $4.3 million in 2023, and given that the capital fleet replacement received an approved budget of $3.5 million, there was a shortfall of $800,000. On average, the future capital investment needs of fleet assets would need to increase about $1.7 million per annum from current budget.

Preventative Maintenance Inspections (# due vs. # completed)

Legislation requires inspections to be done every 12 months from the date of last inspection. Staff are currently performing 85.5% of preventative maintenance inspections within the 12 month or 10,000 km "due dates". While the goal is to complete 100% of these inspections within the timeframe, staff currently tie-in preventative maintenance with larger inspection work to maximize efficiency. As a result, the current performance and gap exists only to maximize efficiency and better use of resources. All activities are being done and the City continues to maximize efficiency using dollar provided, so no additional costs are required.

D.3 (City Support Fleet) – Levels of Service

Unplanned Repairs (% of overall repair jobs for all equipment)

Of all corporate fleet repairs, 31% are currently unplanned. Staff have indicated that reducing this measure to 20% would be a "world-class" target, although largely unachievable, so a more realistic of 30% target has been set. An increase in capital renewal budget will help achieve or get closer to target. This approach will not solve the issue immediately as there is backlog in maintenance work and vehicle beyond their useful lives, but will help address the service gap in long-term. On average, the future capital investment needs of fleet assets would need to increase about $1.7 million per annum from current budget.

D.3 (City Support Fleet) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Capacity and Use	Fleet services are cost efficient and Available to Provide Services	Growth	Availability % (% of hours fleet is available and not being serviced)	Overall Fleet Services	90%	>85%
Function	Fleet services are green and environmentally sustainable	Upgrade	GHG emissions in tonnes of eCO2 for Overall City Support Fleet (except Fire and Transit)	Licensed Vehicles	2,663 (2019)	More than 80% reduction in GHG for overall city fleet except Transit buses (includes City support fleet, Transit support fleet and all Fire fleet) *based on Sustainable Fleet Strategy 2021-2035
Quality	Fleet Licensed Vehicles are kept in a state of good repair	Renewal/O&M	% of Licensed Vehicles at or above "Fair" condition		68%	> 80%
	Fleet assets are kept in a state of good repair		Preventative Maintenance Inspections (# due vs. # completed)	Overall Fleet Services	85.5%	100% Due vs Complete (Percentages are all equipment)
			Unplanned Repairs (% of overall repair jobs for all equipment)		31%	30%

D.4 (City Support Fleet) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth	As Brampton's population has grown in the past, the number of City support fleet (vehicles and equipment) has had to increase in order to deliver services. As of 2022 there were 503 licensed fleet, 255 off-road vehicles, and 88 pieces of equipment belonging to this service area.	As the number of residents within the city continue to increase and services are expanded, the number of support fleet vehicles will be required to increase to maintain services.	In order for a greater number of employees to perform their job duties under certain service areas, a greater number of support fleet vehicles will need to be deployed to maintain service levels.	↑	Increase the number of fleet vehicles in consultation with the Service Areas to meet the levels of service requirements. Increased preventative maintenance and demand management activities will be required with new vehicle acquisitions.	$2.3 M in total over the next 3 years. (Source: 2023 Capital Forecast)
Climate Change & Technological Changes	Brampton's council has declared a climate emergency, and in doing so, made the commitment to minimize the City's carbon footprint. The recent advancements in technology allows for fleet vehicle to be electric or hybrid, reducing the GHG emissions of the City's operations. Per the City's Sustainable Fleet Strategy 2021-2035, City fleet (except buses) is aiming to reduce the GHG emissions by 86% by 2035.	Improvements in range capabilities are expected in the future. When paired with increased charging infrastructure, the electrification of support fleet is expected to accelerate. As reduced emissions vehicles become more affordable, an increasing proportion of City support fleet at the end of their useful lives will be replaced with hybrid and electric options.	Electric vehicles required to be driven all day may need to be charged throughout the day in order to have enough range which may impact the availability due to increased downtime. Vehicle replacement costs are expected to increase during the period of conversion of the fleet, and will be offset by operational savings in the long-term.	↑	Vehicle charging stations will need to be placed and maintained at City facilities to allow for charging as required both mid-day and overnight. GHG Emissions can be reduced by transitioning the City fleet to hybrid and electric vehicles. Transition plan has been developed in the City's Sustainable Fleet Strategy 2021-2035.	Cost of additional ancillary charging infrastructure is not included in the figures below and will be determined An average of $8M per year over the 15-year planning period for the City support fleet except Transit buses, on top of regular capital spending. This capital spending amount is inclusive of replacement of support fleet vehicles. (Source: Sustainable Fleet Strategy, 2019)

D.5 (City Support Fleet) – Risk Management

Risk Identification

		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	Medium	Medium	High	High	Extreme
	P4	Low	Medium	Medium	High	High
	P3	Low	Low	Medium	Medium	High
	P2	Insignificant	Low	Low	Medium	Medium
	P1	Insignificant	Insignificant	Low	Low	Medium

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

		Consequence				
In $Millions		C1	C2	C3	C4	C5
Likelihood	P5	$0.0	$0.5	$0.0	$0.0	$0.0
	P4	$0.0	$1.5	$0.0	$0.0	$0.0
	P3	$0.0	$2.9	$0.0	$0.0	$0.0
	P2	$0.0	$1.8	$0.0	$0.0	$0.0
	P1	$0.0	$0.0	$0.0	$0.0	$0.0

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for City Support Fleet. In total, about $55.9 million in assets have been assessed. Of the $55.9 million, about $78,600 (less than 0.5%) have been assessed to be in the Insignificant risk category. The majority, about $37.5 million (67%), have been assessed as Low risk. Approximately $18.3 million (33%), are assessed to be in the Moderate risk category. No assets have been assessed as High or Extreme risk.

City Support Fleet - Summary of Risk Assessment by Replacement Value ($ Millions)
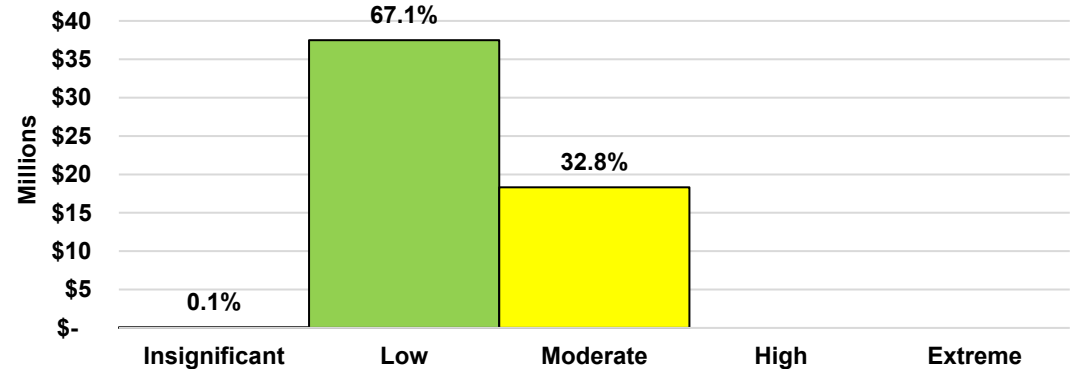
Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:
- The risk map indicates that there are no assets which fall into the High or Extreme risk category. That said, there are a series of assets which are assessed as Moderate risk.
- The attributing factor to the Moderate risk is the condition of the fleet with about $18 million considered to be in Poor and Very Poor condition.
- The service area will monitor the risks and manage assets by continuing to carry out the replacement of aged fleet in Poor and Very Poor condition.

APPENDIX D.6 - ASSET INFORMATION MANAGEMENT STRATEGY

City Support Fleet Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: AssetWorks(M5), CoenCorp, Focus(GPS Solution), ESRI(GIS), Excel, PeopleSoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
HR **Holistic Review** (Overall Review of SA)	**1.1** Active Holistic Review of Business Requirements (High Level)	In progress - Significantly Completed	CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.
DM **Data Management** (Governance and Collection)	**1.1** Formalize asset data governance including interdependent assets	Completed	Extend the established data stewardship practices to cover all aspects of fleet operations, including electric vehicles and infrastructure.
	1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	In progress - Significantly Completed	Develop and implement a comprehensive data management strategy specifically tailored to electric vehicles (EVs) and EV infrastructure utilizing comprehensive review of manufacturers' recommendation on LC activities and/or benchmarking comparable municipalities. This includes establishing protocols for data collection, storage, and maintenance that are aligned with the unique characteristics and requirements of electric vehicle technology.
SOI **State of Infrastructure** (Asset ID, Location, Classification, Physical Attribute, Condition)	**1.1** Improve on inventory data and attributes.	In progress - Significantly Completed	Determine if the UL extension applied in the Service Area Asset Management Plan (SA AMP) can continue to be utilized effectively.
	1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions. Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.	In progress - Significantly Completed	Collaborate with IT and other relevant stakeholders to configure and customize the AssetWorks(M5) module to minimize manual intervention or enhance data transfer efficiency and reduce the risk of errors. Improving AssetWorks(M5)'s records (ie.fuel management modules to capture) and analyse the vehicles' LC data and enable users to better leverage energy consumption in LC decision making process.

APPENDIX D.6 - ASSET INFORMATION MANAGEMENT STRATEGY

City Support Fleet Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: AssetWorks(M5), CoenCorp, Focus(GPS Solution), ESRI(GIS), Excel, PeopleSoft, Questica			
Information Categories (Data Type)	Roadmap Strategy Plans	Sub-category Status	Next Steps
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Establish clear and measurable levels of service for all asset categories. This involves defining performance metrics and targets considering factors such as fleet's performance, functionality, reliability, and usage patterns.
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	Not Started	Implement a structured approach for collecting, analyzing, and reporting LOS data to the City's dashboard.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In progress - Significantly Completed	Conduct a comprehensive analysis to identify and quantify the direct and indirect costs related to maintaining service levels employing the captured data within Asset Works(M5).
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Analyze lifecycle prediction data to anticipate asset maintenance and replacement needs, optimize resource allocation, and minimize downtime.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In Progress - Minimally Completed	Further expand the use of advanced technologies, such as telematics systems and further improvisation in fleet management software.
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In Progress - Minimally Completed	Utilize a standardized risk assessment criteria in the asset management plan, to evaluate asset criticality and prioritize risk mitigation efforts. Incorporate risk assessments into decision-making processes to proactively address potential issues and minimize operational disruptions.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Develop a standardized procedure and frequency for updating the Current Replacement Value (CRV) of assets, rather than relying solely on purchase year and inflation adjustments.(i.e.. Requesting annual CRV updates from suppliers as deliverables through RFQs)
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Use Corporate Asset Management (AM) module specifically designed for Fleet Management System M5 which can either used for Decision Support or link to a DSS for financial decision making.
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In progress - Significantly Completed	Enhance the existing lifecycle cost model to capture all relevant lifecycle activities using telematic systems, mobile applications etc.

D.7 (City Support Fleet) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$6.5M Total O&M Cost per Annum
($M)

- Service Centre Equipment, $0.1, 1%
- Fleet Equipment, $0.1, 1%
- Off-Road Vehicles, $2.2, 33%
- Licensed Fleet, $4.2, 65%
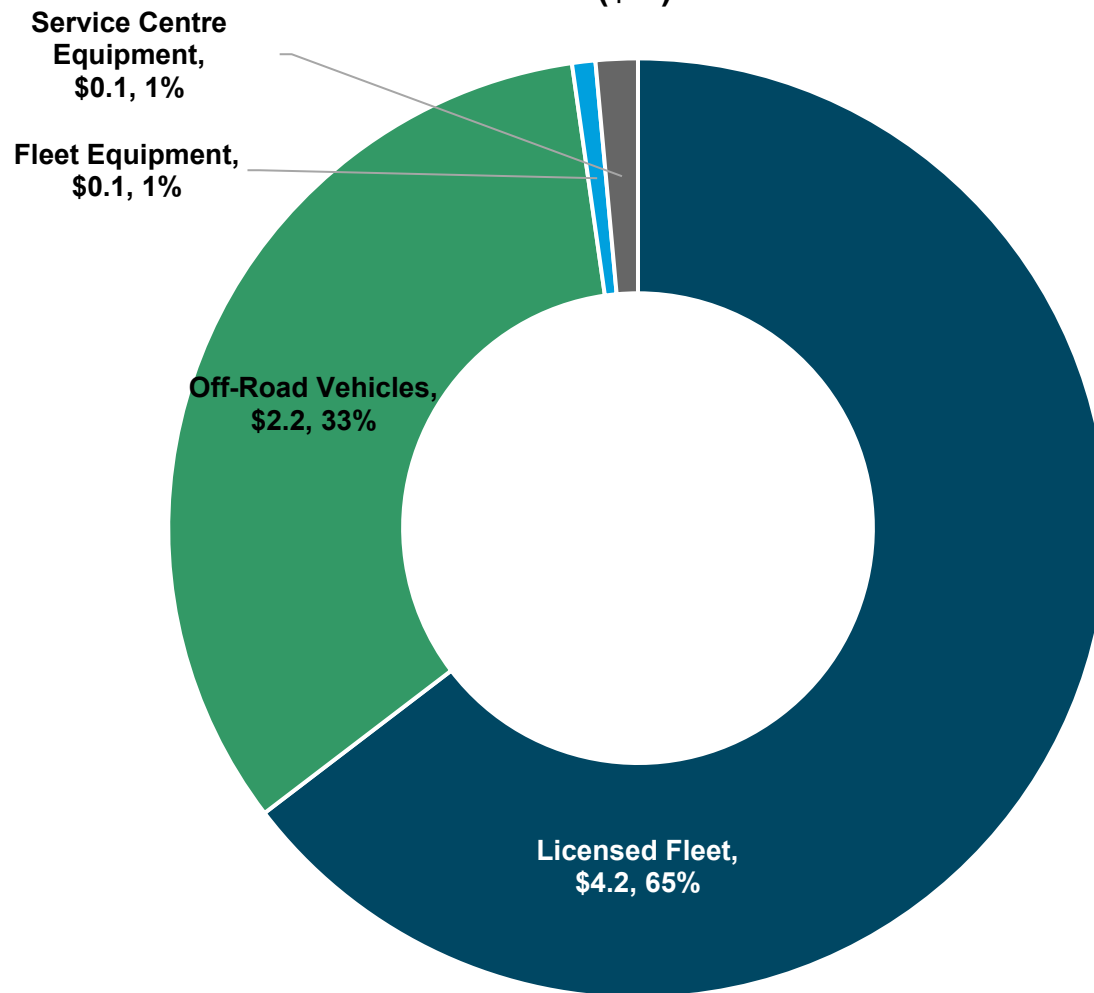
O&M Activities

- The largest contributor to O&M costs associated with City Support Fleet include the salaries, wages and benefits associated with staff who are responsible for maintaining the service.

- The primary activities for fleet would be the maintenance of licensed vehicles, off-road vehicles, and fleet equipment. The activities include: regular oil changes, vehicle repairs, tire pressure adjustments and tire rotations, cleaning services, lubrications, product testing, inspection programs, etc.

- These activities are undertaken to proactively avoid or reduce vehicle breakdowns and is based on time, mileage, engine hours, or gallons of fuel used.

D.7 (City Support Fleet) – Lifecycle Management
Capital Activities

Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Licensed Fleet	$37,333,000	9	Replacement	$4,299,000
Off-Road Vehicles	$18,114,000	10	Replacement	$1,601,000
Fleet Equipment	$439,000	10	Replacement	$39,000
Service Centre Equipment	$0	N/A	Replacement	$80,000
Total	$55,886,000			$6,019,000

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$6.0 million**.

Most of the costs can be attributed to replacing Licensed Fleet assets. These assets remain in service until the end of their service life, which includes consideration for overall mileage of the vehicle.

For the remaining assets (off-road vehicles and equipment), the City's current capital budget investments are sufficient to meet current levels of service.

Currently, no non-infrastructure solutions (NIS) have been identified.

D.7 (City Support Fleet) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($M)

Capital - Replacement, $6.0, 48%

O&M, $6.5, 52%

Annual Expenditure by Asset Category ($M)

Service Centre Equipment, $0.2, 1%

Fleet Equipment, $0.1, 1%
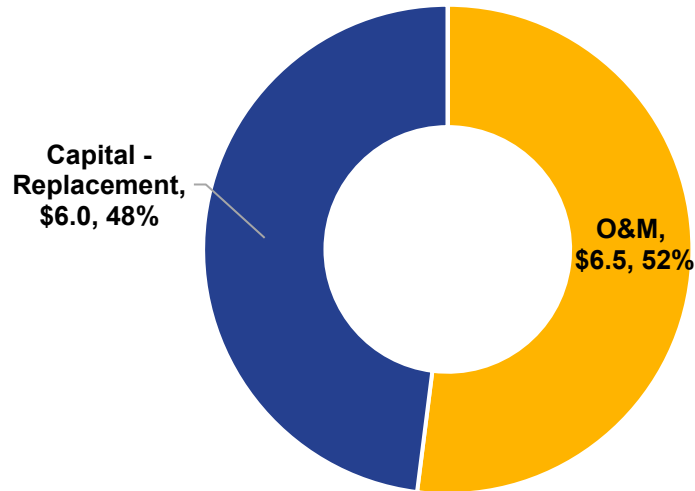
Off-Road Vehicles, $3.8, 30%

Licensed Fleet, $8.5, 68%
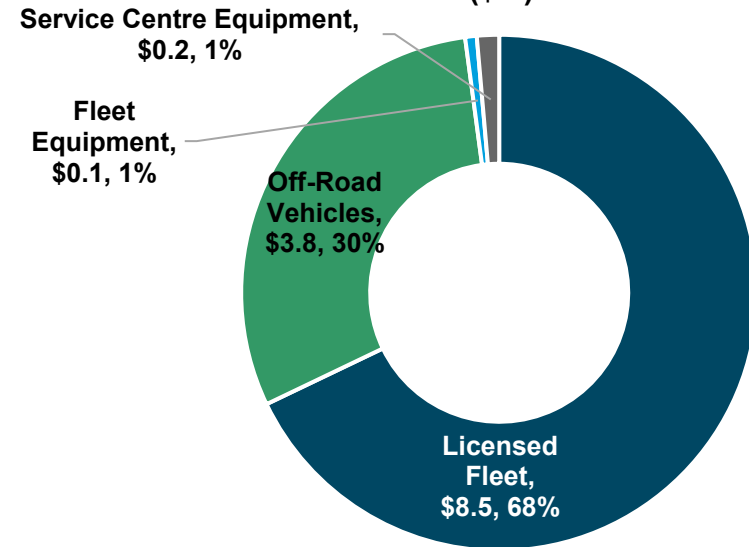
Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Licensed Fleet	$37,333,000	$4,215,000	$4,299,000	$8,514,000
Off-Road Vehicles	$18,114,000	$2,160,000	$1,601,000	$3,761,000
Fleet Equipment	$439,000	$52,000	$39,000	$91,000
Service Centre Equipment	-	$94,000	$80,000	$174,000
Total	**$55,886,000**	**$6,521,000**	**$6,019,000**	**$12,540,000**

D.7 (City Support Fleet) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($000)

- Fleet Equipment, $9.0 , 1%
- Off-Road Vehicles, $357.0 , 27%
- Licensed Fleet, $929.0 , 72%
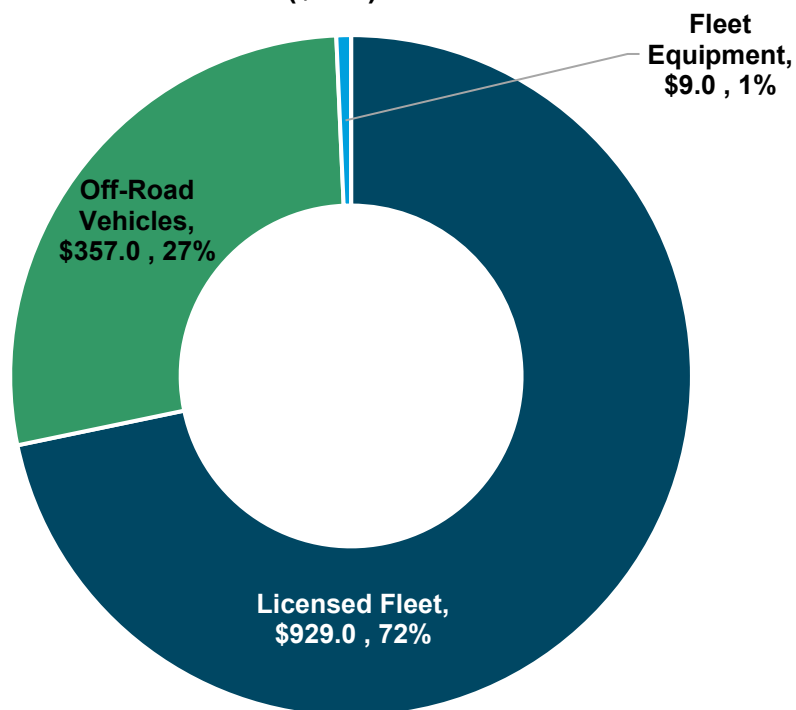
Proposed Levels of Service

- Of the total, Licensed Fleet represents the largest share of the total annual expansion and upgrade costs amounting to about $929,000.

- The first round capital costs would primarily be funded from the City's DCs. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $2.9 million at Year 10.

- *Source: 2024 DC Study, 2023-2027 Capital Plan & Discussions with Staff*

$1.5M   Annual OPEX Impact at Year 10

$1.4M   Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Licensed Fleet	$735,000	$194,000	$107,000	$111,000
Off-Road Vehicles	$357,000	-	$32,000	$43,000
Fleet Equipment	$9,000	-	$1,000	$1,000
Service Centre Equipment	-	-	-	-
Total	**$1,101,000**	**$194,000**	**$140,000**	**$155,000**

D.8 (City Support Fleet) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Many asset categories within Fleet Services have used an age-based approach to assess the condition of assets therein; these assets should have their condition assessed annually to provide more accurate reporting on overall asset conditions.

- Regularly update replacement costs for the higher value assets, as current replacement values have been determined by inflating historical cost, despite large fluctuations in vehicle prices over recent years.

- Consistency in the tracking of GHG emissions is required for monitoring performance each year; consider alternative methods of estimating emissions based on vehicle type and run-time.

Process Optimization

- Understand the O&M impacts of using fleet assets beyond their useful life.

- Develop a comprehensive understanding of the asset management strategy related to electric vehicles (EVs) and EV infrastructure utilizing comprehensive review of manufacturers' recommendation on LC activities and/or benchmarking comparable municipalities.

Technology & Tools

- Improve AssetWorks (M5) records (for example, fuel management modules) to capture and analyze the vehicles' lifecycle data and enable users to better leverage energy consumption in lifecycle decision making process.

- Expand the use of advanced technologies, such as telematics systems and further improvisation in fleet management software.

Fire Services

E.1 (Fire Services) – Maturity Assessment

63 Pre-Project Score

71 Current Score

89 Target Score

Activities to Achieve Target Score in Future

- Develop and implement a comprehensive system for routine condition and performance monitoring of Fire Services assets.
- Develop and implement a risk-based condition assessment protocol tailored to Fire Services assets
- Develop asset attributes and collect condition data on smaller assets.(i.e. SCBAs, Bunker Gear)

Radar chart with axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement. Legend: Pre-Project Score, Current Score, Target Score.

Bar chart:

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	62	75	90
Developing AM Lifecycle Strategies	66	71	88
Asset Management Enablers	62	67	89
Overall Score	63	71	89

Legend: Pre-Project Score, Current Score, Target Score

201

APPENDIX E.2 - SOLI REPORT CARD

Fire Services

Total Asset Replacement Value:	$62.8 Million
Total Asset Replacement Value Including Facilities:	$177.0 Million
Future Condition Trend (Next 10 Years):	Declining - As assets age they may require attention in the future
Data Confidence & Reliability:	Age and Condition Based

The 2022 SOLI analysis is being reported under two different asset representation perspectives: **"Responsibility View"** and **"User View"** representation

> ***Responsibility View:*** *Shows the assets under the service area that is responsible for managing them*
> ***User View:*** *Shows the assets under the service area that is using them*

The responsibility view is also being illustrated in this 2022 SOLI as it is an important viewpoint from an Asset Management Planning perspective. The responsibility view:

- ✓ provides a direct line of sight to those assets managed by the service area;
- ✓ will help prioritize lifecycle activities managed by the service area;
- ✓ aligns with industry best practices; and
- ✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Fire Services		
Front Line Licensed Vehicles & Apparatus	$40.1	31
Support Vehicles & Equipment	$3.6	67
Spare Vehicles	$14.7	31
Personal Fire Equipment	$3.8	1,201
Specialty Equipment	$0.6	7
Subtotal Assets Managed by Fire Services (Responsibility View)	*$62.8*	-
Assets Managed by Other Service Areas		
Fire Services Facilities	*$110.7*	*15*
Fire Services Software	*$3.5*	*5*
Total Replacement Value (User View)	**$177.0**	**-**

APPENDIX E.2 - SOLI REPORT CARD

Fire Services

Major Types of Assets within Fire Services - Responsibility View

The figure below illustrates the replacement value and condition of Fire Services assets under the responsibility view. Under this view, the total replacement value of assets is $62.8 million. Of this total, more than 90% is related to the Fire fleet (including front line licensed vehicles & apparatus, support vehicles & equipment and spare vehicles). About 54% of the assets are considered to be in Good to Very Good condition, with the majority of the remaining assets in Fair condition. Approximately 3% of the assets for Fire Services are in Very Poor condition, represented almost entirely by aging support vehicles reaching the end of their useful lives.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Personal Fire Equipment, $3.8 , 6%
- Specialty Equipment, $0.6 , 1%
- Spare Vehicles, $14.7 , 23%
- Front Line Licensed Vehicles & Apparatus, $40.1 , 64%
- Support Vehicles & Equipment, $3.6 , 6%

RESPONSIBILITY VIEW: FIRE ASSET CONDITION ($M)

- Very Poor, $2.1 , 3%
- Poor, $0.1 , 0%
- Very Good, $19.5 , 31%
- Fair, $26.8 , 43%
- Good, $14.4 , 23%
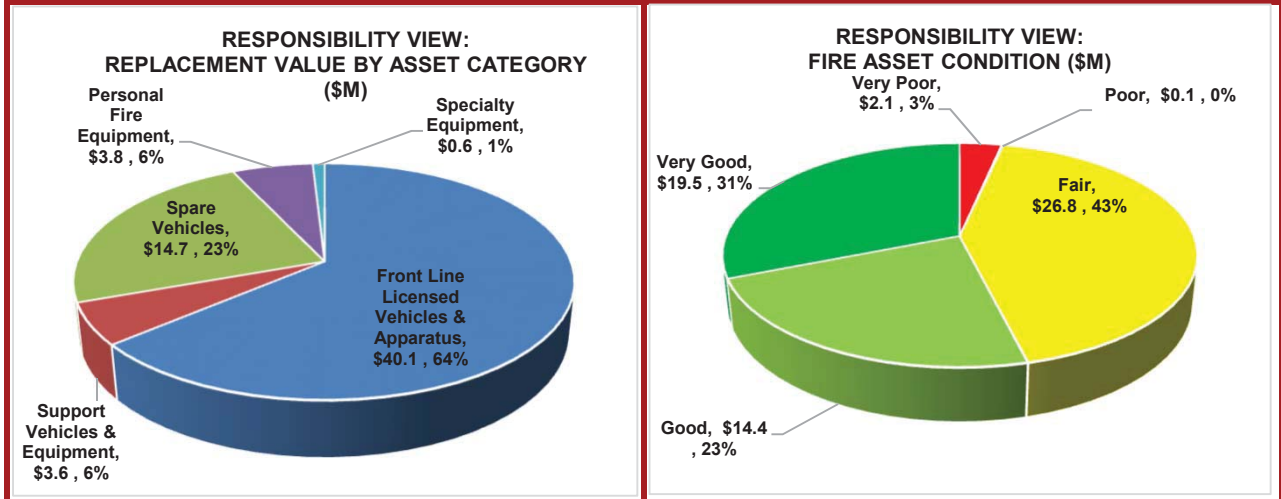
Data Source: M5 and City Databases

Major Types of Assets within Fire Services - User View

The figures below illustrate the replacement value and condition of Fire Services assets under the user view. Under the user view illustration which also captures facilities, the replacement value is about $177 million. Approximately 82% of the assets are considered to be in Good to Very Good Condition.

USER VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Software, $3.5 , 2%
- Front Line Licensed Vehicles & Apparatus, $40.1 , 23%
- Support Vehicles & Equipment, $3.6 , 2%
- Spare Vehicles, $14.7 , 8%
- Specialty Equipment, $0.6 , 0%
- Personal Fire Equipment, $3.8 , 2%
- Facilities, $110.7 , 63%

USER VIEW: FIRE ASSET CONDITION ($M)

- Very Poor, $2.1 , 1%
- Poor, $0.1 , 0%
- Fair, $30.9 , 17%
- Good, $34.6 , 20%
- Very Good, $109.3 , 62%
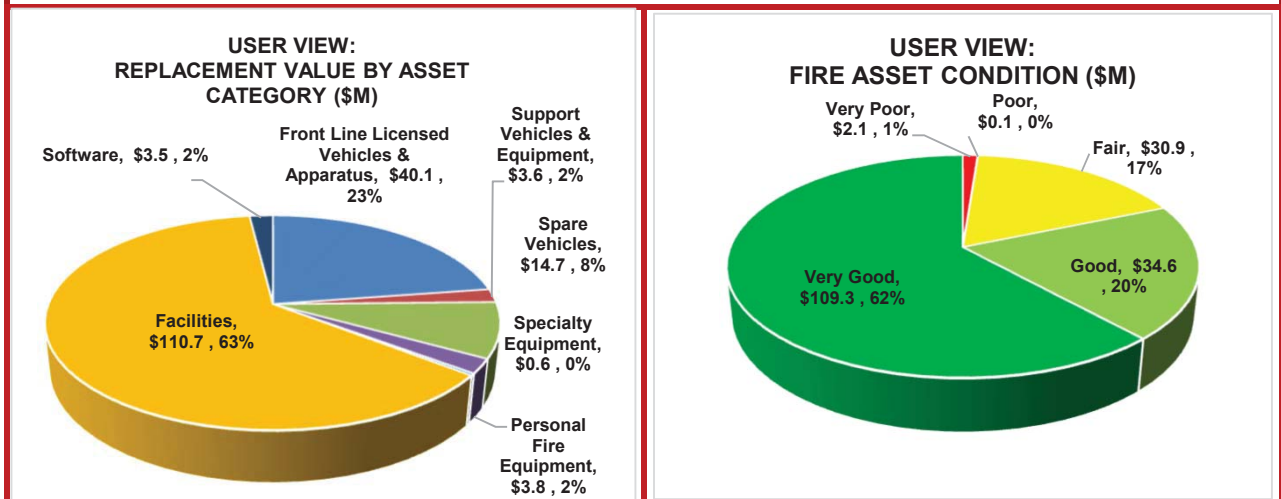
Data Source: M5, City Databases, Suncorp valuations report and recent tenders (for facilities)

APPENDIX E.2 - SOLI REPORT CARD

Fire Services

Age Summary

The following figure summarizes the average age of the City's Fire Assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated. It is important to emphasize that the age of an asset relative to its useful life does not always provide a complete picture of its actual condition. Spare vehicles have been left out of the age analysis below.

Legend: ■ Average Age □ Expected Useful Life

Category	Average Age	Expected Useful Life
FRONT LINE LICENSED VEHICLES & APPARATUS	9	10
SUPPORT VEHICLES & EQUIPMENT	8	8
PERSONAL FIRE EQUIPMENT	5	10
SPECIALTY EQUIPMENT	7	24
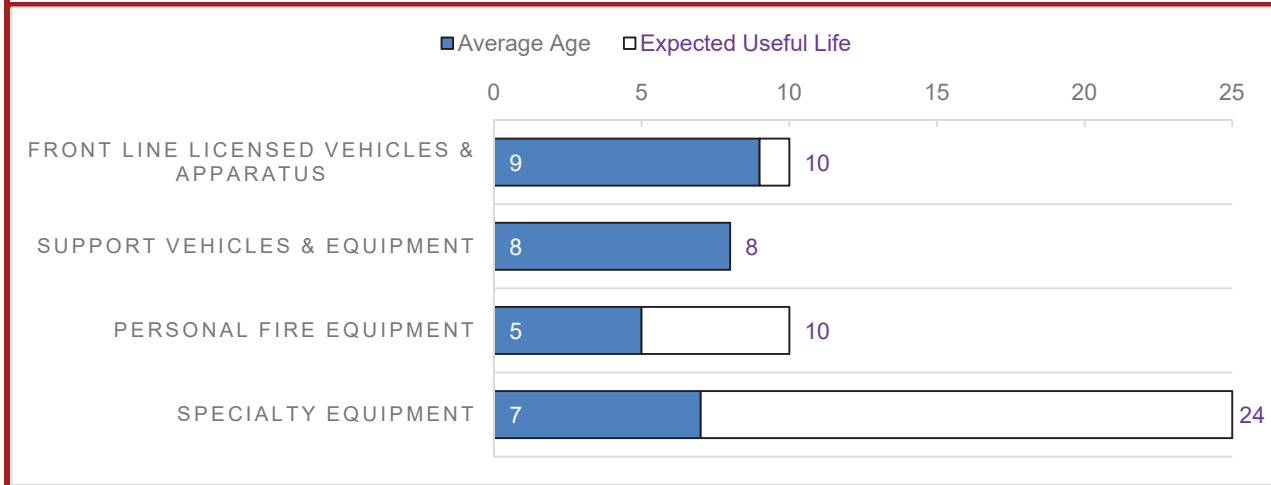
Condition Summary

The figure below illustrates the condition of the five sub-component assets of Fire Services. Facilities are generally in Good to Very Good condition. Almost all assets in Very Poor condition are attributable to Support Vehicles, but do not represent a safety issue or preclude Fire Services from delivering services to meet the needs of residents.

Condition	Front Line Licensed Vehicles & Apparatus	Support Vehicles & Equipment	Spare Vehicles	Personal Fire Equipment	Specialty Equipment	Facilities	Software
Very Good	41%	6%	9%	35%	56%	78%	100%
Good	28%	20%		57%	40%	18%	
Fair	32%	13%	90%	8%			
Poor		3%	1%			4%	
Very Poor		58%			4%		

Legend: ■ Very Poor ■ Poor ■ Fair ■ Good ■ Very Good
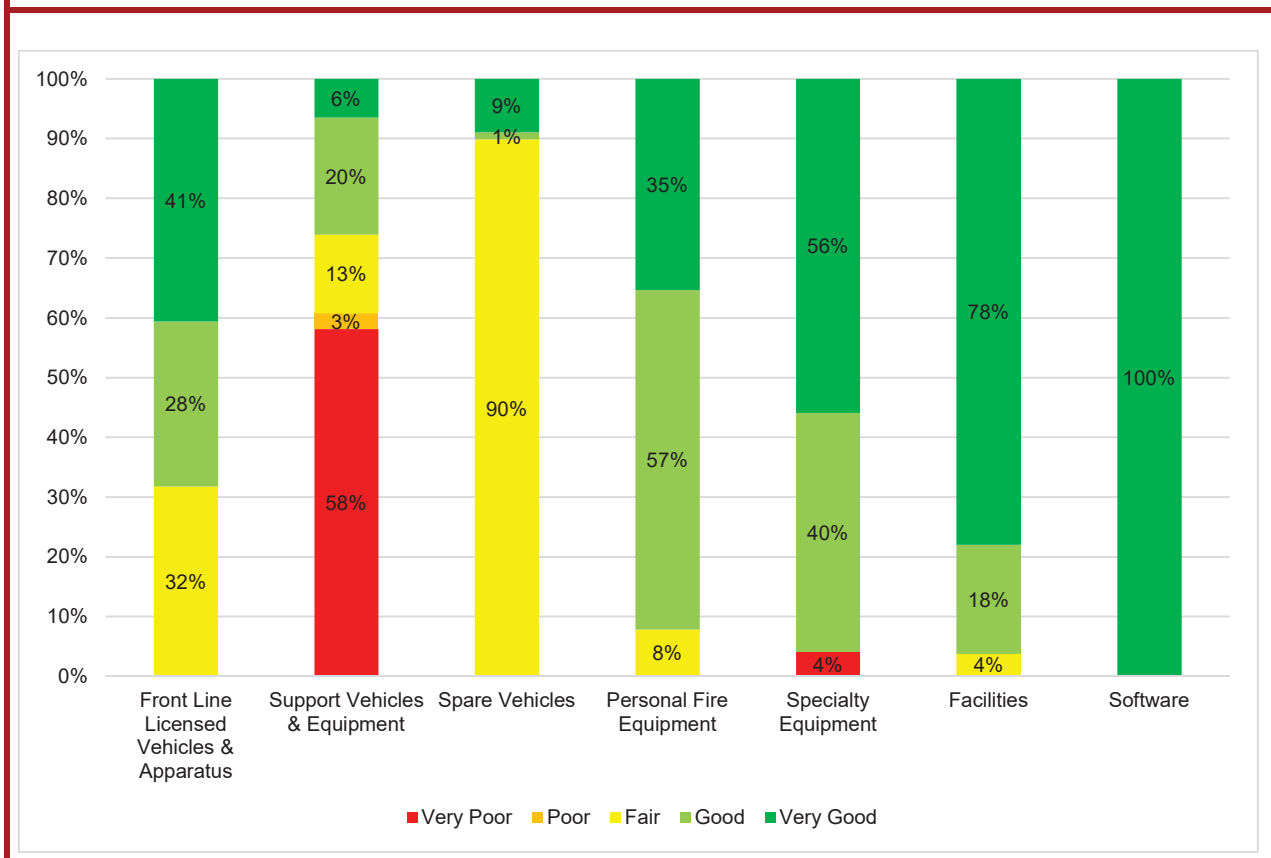
APPENDIX E.2 - SOLI REPORT CARD

Fire Services

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outlines the difference in Fire Services assets in the 2021 SOLI relative to the 2022 SOLI, while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the value of Fire Services assets has increased by 70% from approximately $36.9 million to $62.8 million. This increase can be attributed to better asset data and updated costing information, taking into account the large increase in overall prices seen over the last few years. As recent costing data was not available, the asset replacement values were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report.

When considering the Fire Services Facilities and Software, the total asset value for Fire Services increases proportionately with the inclusion of these assets. The decrease in facilities valuation is related to the decommissioning of Fire Station 3. Furthermore, the total value of Fire Services assets represents an increase of 12% (or $18.8 million) from the value reported in 2021 before any inflationary adjustments.

Please note, the Facilities and IT report cards will include additional information (including the inflation measure applied) on those assets used by Fire Services but maintained and managed by a different City department.

Asset	2021 SOLI		2022 SOLI	
Front Line Licensed Vehicles & Apparatus	21	Each	31	Each
Support Vehicles & Equipment	65	Each	67	Each
Spare Vehicles	31	Each	31	Each
Personal Fire Equipment	1,078	Each	1,201	Each
Specialty Equipment	6	Each	7	Each
Facilities	16	Each	15	Each
Software	5	Each	5	Each

Note: the reduction in number of facilities is related to the exclusion of station 203.

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 118,123,549	$ 110,679,460	$ (7,444,090)	-6%
Software	$ 3,164,595	$ 3,456,865	$ 292,270	9%
Subtotal Assets Managed by Other Service Areas	**$ 121,288,144**	**$ 114,136,325**	**$ (7,151,819)**	**-6%**
2. Assets Managed by Fire Services				
Front Line Licensed Vehicles & Apparatus	$ 19,648,682	$ 40,099,773	$ 20,451,090	104%
Support Vehicles & Equipment	$ 6,640,669	$ 3,581,324	$ (3,059,344)	-46%
Spare Vehicles	$ 7,056,097	$ 14,749,259	$ 7,693,162	109%
Personal Fire Equipment	$ 3,019,328	$ 3,849,179	$ 829,851	27%
Specialty Equipment	$ 501,840	$ 568,030	$ 66,190	13%
Subtotal Assets Managed by Fire Services (Responsibility View)	**$ 36,866,616**	**$ 62,847,565**	**$ 25,980,950**	**70%**
Total Replacement Value: User View (1+2)	**$ 158,154,760**	**$ 176,983,890**	**$ 18,829,130**	**12%**

*Responsibility of managing the assets lies with another service area, but assets are used by Fire Services

E.3 (Fire Services) – Levels of Service

Percentage of medical calls (Vital Signs Absent VSA) responded to within 384 Seconds

The percentage of medical calls (VSA) responded to in 384 seconds was 80% with a target of 90%. There is ongoing data and response analysis that will identify areas of improvement, as well as an ongoing review of operational readiness as per the Fire Master Plan. The cost associated with these measures is to be determined through future analysis.

Percentage of unplanned maintenance events per year relative to total maintenance events

Currently, unplanned maintenance events annually relative to total maintenance is between 0.5% and 2.6%, with a target of less than 2%. The planned and annual inspections undertaken address nearly all issues, with additional training to be provided for staff as the City transitions over to electric vehicles. To meet the target, it is recommended that current funding levels are maintained while adjusting for growth annually.

Percentage of Frontline Apparatus at or above fair condition

Currently, 100% of all Frontline Apparatus are at or above fair condition and meeting the desired target performance. The City emphasizes prioritizing the condition of its emergency response vehicles due to their critical role in service delivery. Current funding levels should be maintained while adjusting for growth annually to continue meeting this requirement. Additional planning may be required to account for supply chain issues in future.

Percentage of Regulated inspections completed

The City has completed 100% of the regulated inspections and is meeting the desired target performance. As no gap has been identified, current funding levels should be maintained while adjusting for growth annually.

GHG emissions in tonnes of eCO2 for Fire Licensed Vehicles

Fire Licensed Vehicles currently account for 775 tonnes of GHG emissions. In future, the target performance is a 50% reduction by 2035 compared to the 2019 baseline established for Fire fleet as per the Sustainable Fleet Strategy and Action Plan 2021 – 2035, Table 7 (the baseline fleet include heavy duty front line vehicles and support fleet).

The Sustainable Fleet Strategy and Action Plan outlines solutions to meeting reductions in GHG emissions, including replacing vehicles with battery-electric vehicles and short term implementation of viable best management practices, including enhanced specs, driver behaviours and route planning/optimization. The estimated annual impact on CAPEX and OPEX to meet the target GHG reductions is outlined in Table 7 of the Sustainable Fleet Strategy.

E.3 (Fire Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Quality	To provide safe, functional and accessible fire services for the community.	Renewal/O&M	% of medical calls (Vital Signs Absent VSA) responded to within 384 Seconds	Overall Fire Services	80%	90%
Quality		Renewal/O&M	% of unplanned maintenance events per year relative to total maintenance events	Licensed Vehicles	0.5% to 2.6%	Less than 2%
Quality		Renewal/O&M	% of Frontline Apparatus at or above fair condition	Licensed Vehicles	100%	100%
Function		Upgrade	% of Regulated inspections completed	Overall Fire Services	100%	100%
Function	Fire Fleet services are green and environmentally sustainable	Renewal	GHG emissions in tonnes of eCO2 for Fire Licensed Vehicles	Licensed Vehicles	775	50% reduction in GHG emissions by 2035 compared to 2019 baseline for Fire fleet (including heavy duty front line vehicles and support fleet (low and medium duty vehicles) (Source: Sustainable Fleet Strategy and Action Plan 2021-2035, Table 7)

E.4 (Fire Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth & Net Migration	Brampton currently has 14 fire stations and 31 Frontline apparatus to serve its rapidly growing population, 73,000 businesses and many visitors.	Brampton's population is projected to grow to 985,000 by year 2051, requiring a greater number of fire stations and frontline apparatus to maintain the current service levels.	Over recent years, the response rate has been steady and BFES has achieved an overall response time of approximately 450 seconds or less to 90% of emergency incidents. Projected population growth will stretch the resources and adversely impact the response time.	↑	2016 report recommends that 25 frontline apparatus be in operation by 2024. Station 215 (renumbered) planned to be in-service by 2025. (Coincides with Goreway Drive lane widening) Station 216 planned to be in-service by 2025 (*timing subject to change- likely pushed back due to difficulties buying land*) to coincide with population forecasts (Heritage Heights) Station 217 (renumbered) planned to be in-service by 2032 (Sandalwood Parkway and Heritage Road) • Each new station requires a Pumper to support the area.	Station 215 - $14.7 M Construction Station 216 - $16.4 M Construction Station 217 - $17.7 M Construction 3 new cars for fire prevention officers - $204,000 4 new pumpers - $10.4 M Firefighting equipment - $1.6 M Annual operating budget impact = $8.7 M

E.4 (Fire Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Urbanization	Brampton is considered one of the fastest growing cities in Canada and with new greenfield land opportunities continuing to diminish, development is intensifying in already established and built-up areas.	Brampton is transitioning from low density Greenfield development to higher intensity urban development. Over the next three decades it is anticipated that over 60% of development will be high density.	Higher density typologies and secondary units in houses, resulting from urbanization, pose additional risks and challenges and require a different response to the structural fires and medical emergencies. The City's ability to respond within the targeted timeframe will experience additional challenges due to traffic congestion.	↑	Task Force to investigate reports of illegal second rental units and perform routine inspections on high-risk occupancies Planning for future fire stations based on response time predictions, pop. Forecasts, incident volume forecasts, projection of road networks. Assign more fire fighters and frontline apparatus to respond to high-rise fires. New crews could be added at stations 211 and 215, which have open bays for more equipment as per master plan. Investments in GPS upgrades to allow fire vehicles to move quicker through traffic. BFES plans to explore leveraging its pre-emptive traffic technology infrastructure (EMTRAC) more with new CAD System. The new units will allow the AVL to sync with the traffic management system and CAD with one single point of transmission rather than to continue to have to separate hardware units. Proposed: Mandatory fire inspections when changes in ownership occur	The Fire Suppression and Apparatus and Maintenance Divisions meet to determine needs to support the City regularly. A study may be required to determine needs but no immediate plans for additional apparatus to maintain high-rise buildings is identified (that could change over the next several years) $168,000 to upgrade GPS System as per master plan (Costing approximately $7k each). CAD System has been implemented

E.4 (Fire Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Technological Changes	Technology within the Fire service is currently implemented for communication devices and protective equipment for the frontline responders. The department invests in promising technologies that will help the service better respond to incidents.	As technology continues to evolve, the City's fire department will be able to implement these evolutions to communicate better both internally and with the public to provide quicker, more effective response.	Newer appliances are less likely to cause electrical fires. Greater reliance on Software and Cellular Networks - AMANDA for inspections allow instant emails to occupants - Cellular Networks are required for equipment, speeds are impacted by use by the public - GPS can sync with Traffic Mgmt. System	↑	Agreement with Motorola to design a private LTE network Upgrades to radio and communication equipment including CAD Upgrades, allowing photos to be uploaded in 911 calls for more effective response Investment in drones, allowing frontline responders to better assess incidents and structure fires, without putting themselves in harm's way. Leveraging new machine learning and artificial intelligence technology to predict where fires are most likely to occur so that targeted proactive inspections can be done to reduce the likelihood and magnitude of a fire occurring	$633k for 2023 to replace and upgrade communication related equipment $25k for drone pilot project. NG911 would be a technology improvement to help improve services (no additional costs - expected to go live by year-end)
Climate Change	Brampton's council has joined many other municipalities across Canada in their declaration of a climate emergency, and is committed to preparing for its effects while trying to minimize their corporate environmental footprint.	With their commitment to going greener, environmental initiatives will be put in place on Fire assets to attempt to mitigate any negative impacts on the environment.	Brampton's fleet of emergency response apparatus are not fuel efficient and therefore have a large environmental footprint.	↑	Idle reduction technology (IRT) can be used to reduce the amount of emissions from conventional frontline apparatus until they are able to be and due for replacement for a hybrid or electric model. This will reduce diesel consumption significantly, as the fire truck consume approximately 4.7 litres of diesel per hour at idle vs. approximately 1 litre per hour when IRT is implemented. The non-emergency response fleet (consisting of approximately 62 vehicles), can have their emissions reduced by investing in hybrid or electric vehicles.	$30,000 per new frontline apparatus to be outfitted with IRT Electric and hybrid apparatus options are being explored - Costs TBD

E.5 (Fire Services) – Risk Management

Risk Identification

		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	Medium	Medium	High	High	Extreme
	P4	Low	Medium	Medium	High	High
	P3	Low	Low	Medium	Medium	High
	P2	Insignificant	Low	Low	Medium	Medium
	P1	Insignificant	Insignificant	Low	Low	Medium

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	$2.1	$0.0	$0.0	$0.0	$0.0
	P4	$0.1	$0.0	$0.0	$0.0	$0.0
	P3	$0.5	$13.6	$12.7	$0.0	$0.0
	P2	$0.7	$3.9	$11.1	$0.0	$0.0
	P1	$0.2	$1.7	$16.3	$0.0	$0.0

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Fire. In total, about $62.8 million in assets have been assessed. Of the $62.8 million, about $2.6 million (4%) have been assessed to be in the Insignificant risk category. The majority, about $45.4 million (72%) have been assessed as Low risk. Approximately $14.8 million (24%), are assessed to be in the Moderate risk category. No assets have been assessed as High or Extreme risk.

Fire - Summary of Risk Assessment by Replacement Value ($ Millions)
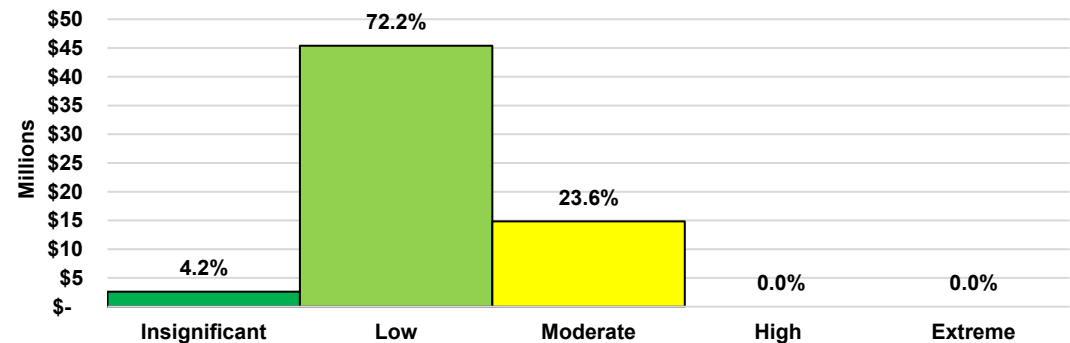
Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:
- The risk map indicates that there are no assets which fall into the High or Extreme risk category. That said, there are a series of assets which are assessed as Moderate risk.
- The attributing factor to the assets considered Moderate risk relates to the age-based condition of the support vehicles with about $2.1 million considered to be in Very Poor condition. Furthermore, there is an additional $12.7 million of assets considered Moderate risk which are related to front-line licensed vehicles & apparatus.
- The service area will monitor and manage risks by continuing to carry out the replacement of aged support vehicles in Poor and Very Poor condition.

APPENDIX E.6 - ASSET INFORMATION MANAGEMENT STRATEGY

<table>
<tr><td colspan="5">Fire Services
Asset Information Systems Maturity Tracker and Roadmap Update</td></tr>
<tr><td colspan="5">Asset Related Software Solutions or Tools:
Assetworks (M5), Fire CAD, Excel, PeopleSoft, Questica</td></tr>
<tr><td>Information Categories (Data Type)</td><td>Roadmap Strategy Plans</td><td>Sub-category Status</td><td colspan="2">Next Steps</td></tr>
<tr><td>HR
Holistic Review
(Overall Review of SA)</td><td>1.1 Active Holistic Review of Business Requirements (High Level)</td><td>Completed</td><td colspan="2">CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.</td></tr>
<tr><td rowspan="2">DM
Data Management
(Governance and Collection)</td><td>1.1 Formalize asset data governance including interdependent assets</td><td>In progress - Significantly Completed</td><td colspan="2">Conduct a comprehensive assessment to identify and define asset interdependencies with facilities. Assign specific individual(Position/Role/Team) to be responsible for collecting, managing, and ensuring the quality of asset information.</td></tr>
<tr><td>1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.</td><td>In progress - Significantly Completed</td><td colspan="2">Collaborate with IT to establish a centralized system to track and store asset data such as asset condition, value, in-service date, lifecycle, and purchase details specially for smaller asset types.</td></tr>
<tr><td rowspan="2">SOI
State of Infrastructure
(Asset ID, Location, Classification, Physical Attribute,</td><td>1.1 Improve on inventory data and attributes.</td><td>In progress - Significantly Completed</td><td colspan="2">Implement a targeted approach to enhance data collection for small assets.</td></tr>
<tr><td>1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions.
Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.</td><td>In progress - Significantly Completed</td><td colspan="2">Evaluate current systems that can be implemented for process improvement, condition assessment and data collection for all asset classes and specialty equipment.</td></tr>
</table>

APPENDIX E.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Fire Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: **Assetworks (M5), Fire CAD, Excel, PeopleSoft, Questica**			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Further develop clear and measurable levels of service for all asset categories. This involves defining performance metrics and targets considering factors such as asset condition, functionality, reliability, and customer satisfaction.
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In Progress - Minimally Completed	Formalize a structured approach for collecting, analyzing, and reporting LOS data to the City's dashboard.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In progress - Significantly Completed	Capture and record all operation and maintenance (O&M) data in a Computerized Maintenance Management System (CMMS) or Capital Asset Management System (CAMS).
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Establish a comprehensive methodology to capture lifecycle activities for all assets specially smaller asset classes.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In Progress - Minimally Completed	Work together with IT to use an existing system to capture lifecycle information.
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In progress - Significantly Completed	Incorporate LC management strategies with risk, develop proactive strategies to reduce reliance on emergency funds for asset maintenance and replacement.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Develop a processes and strategies to collect cost data from various sources, including invoices, procurement records, and financial systems can be integrated into and CAMS or CMMS solution.
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Assess the viability of Decision Support Systems (DSS) to enhance financial decision-making
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In Progress - Minimally Completed	Identify business requirements and thereafter track and manage lifecycle activities initiated through work orders and capture the associated costs.

E.7 (Fire Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$5.2M Total O&M Cost per Annum
($M)

Facilities, $0.6, 12%

Personal Equipment, $0.3, 6%

Spare Vehicles, $0.7, 14%

Support Vehicles & Equipment, $0.3, 5%

Front Line Licensed Vehicles & Apparatus, $3.3, 63%
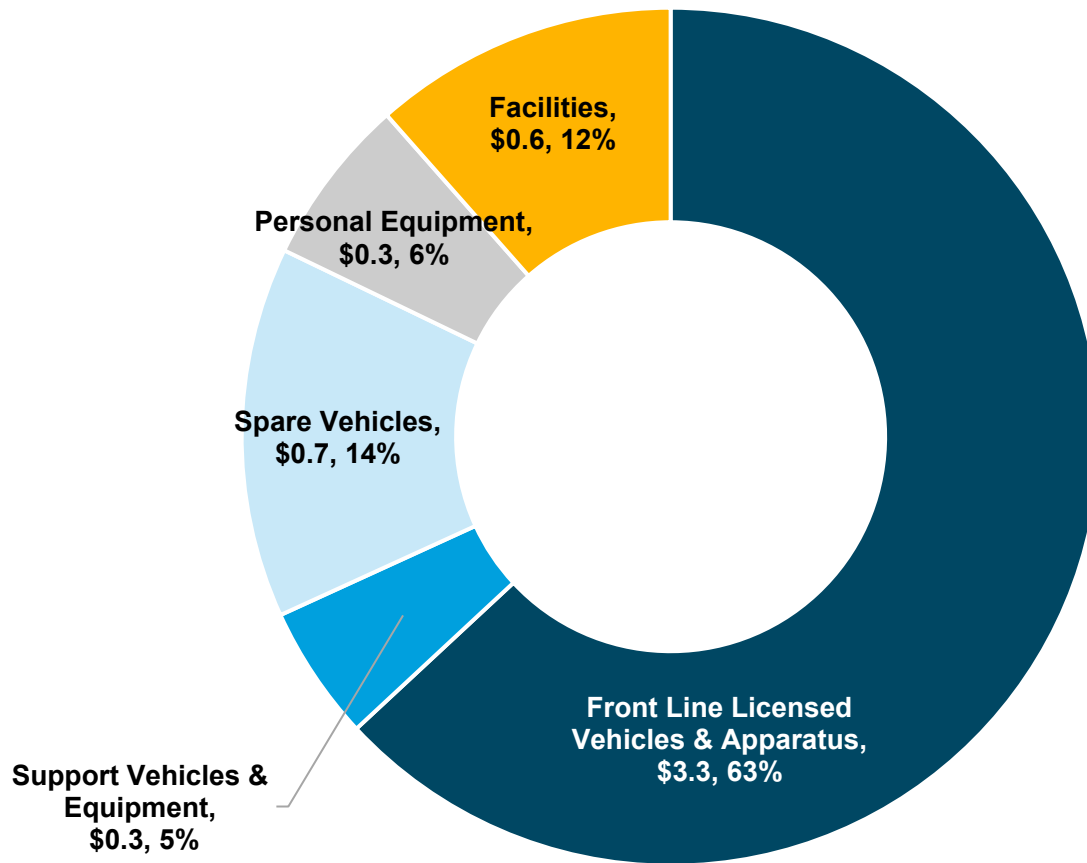
O&M Activities

- The largest portion of O&M costs relate to the salaries, wages and benefits associated with maintaining assets within the Fire services portfolio.

- Of the total, $3.3 million can be attributed to Front Line Licensed Vehicles and Apparatus.

- Costs also include maintenance of communication equipment, CAD software and other technology required to deliver the services.

- About $600,000 per annum relates to maintaining the Fire Stations.

E.7 (Fire Services) – Lifecycle Management
Capital Activities

Asset Category	Sub-Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Front Line Licensed Vehicles & Apparatus	Front Line Licensed Vehicles & Apparatus	$40,100,000	10	Replacement	$4,314,000
Support Vehicles & Equipment	Support Vehicles	$3,581,000	8	Replacement	$490,000
	Specialty Equipment	$568,000	N/A	Replacement	-
Spare Vehicles	Spare Vehicles	$14,749,000	11	Replacement	-
Personal Equipment	SCBA	$1,767,000	10	Replacement	$222,000
	Bunker Gear	$2,082,000	10	Replacement	$231,000
Facilities	Facilities	$110,679,000	N/A	Replacement	$136,000
Non-Infrastructure Solutions		-	-	-	$20,000
Total		**$173,526,000**			**$5,412,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$5.4 million**.

Most of the costs can be attributed to replacing Front Line Licensed Vehicles & Apparatus when the assets reach the end of its useful life.

For many of the assets, the ideal capital activity schedule would be to replace the asset at the end of its useful life. However, useful life modifications have been made for front-line vehicles to represent the true in-service life of the vehicle.

The annual capital costs associated with specialty equipment are included under Support Vehicles.

Non-infrastructure solutions (NIS) account for an additional $20,000 annually in capital spending.

Additional costs associated with Fire Facilities is captured in Appendix A (Facilities).

E.7 (Fire Services) – Lifecycle Management
Current Levels of Service Summary
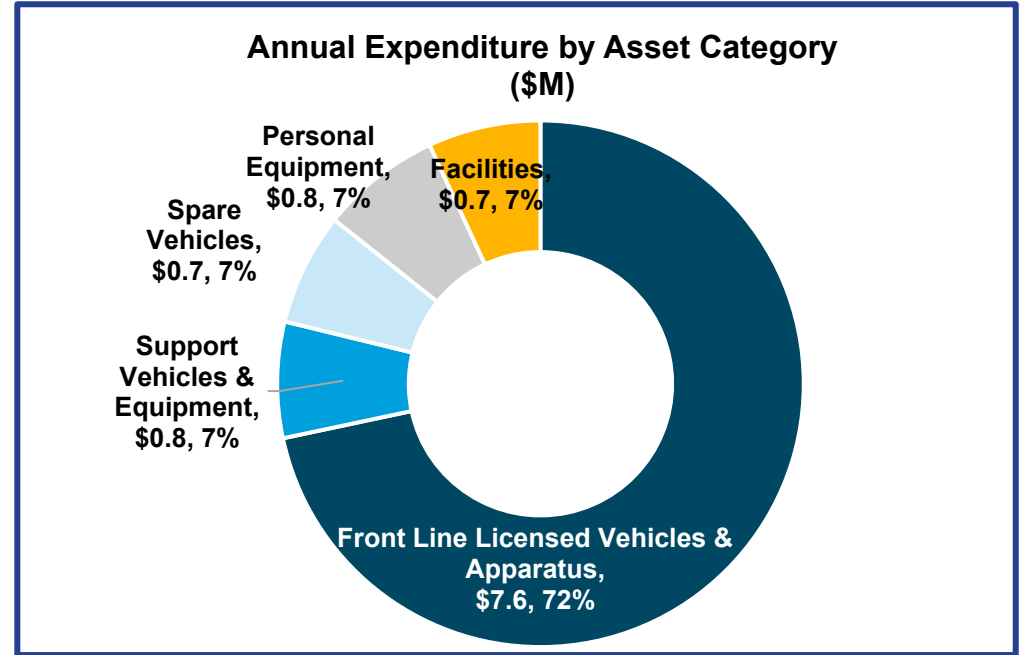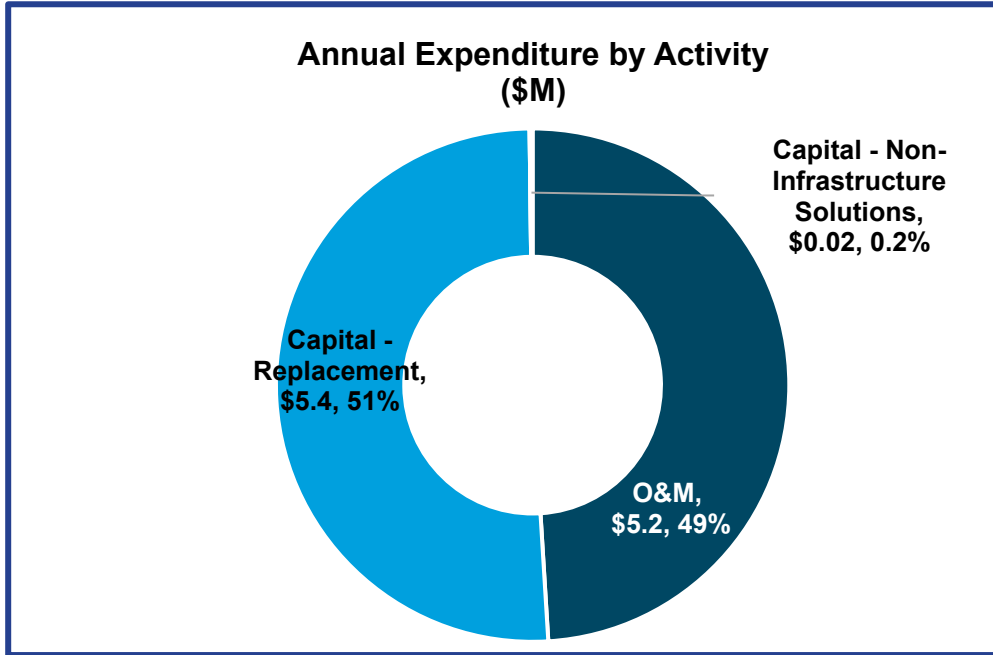
Annual Expenditure by Activity ($M)

- Capital - Non-Infrastructure Solutions, $0.02, 0.2%
- Capital - Replacement, $5.4, 51%
- O&M, $5.2, 49%

Annual Expenditure by Asset Category ($M)

- Personal Equipment, $0.8, 7%
- Facilities, $0.7, 7%
- Spare Vehicles, $0.7, 7%
- Support Vehicles & Equipment, $0.8, 7%
- Front Line Licensed Vehicles & Apparatus, $7.6, 72%

Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Front Line Licensed Vehicles & Apparatus	$40,100,000	$3,283,000	$4,326,000	$7,609,000
Support Vehicles & Equipment	$4,149,000	$265,000	$491,000	$756,000
Spare Vehicles	$14,749,000	$727,000	$5,000	$732,000
Personal Equipment	$3,849,000	$330,000	$454,000	$784,000
Facilities	$110,679,000	$599,000	$136,000	$735,000
Total	$173,526,000	$5,204,000	$5,412,000	$10,616,000

E.7 (Fire Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($000)

- Facilities, $1,000.0 , 32%
- Personal Equipment, $159.0 , 5%
- Support Vehicles & Equipment, $557.4 , 18%
- Front Line Licensed Vehicles & Apparatus, $1,404.0 , 45%
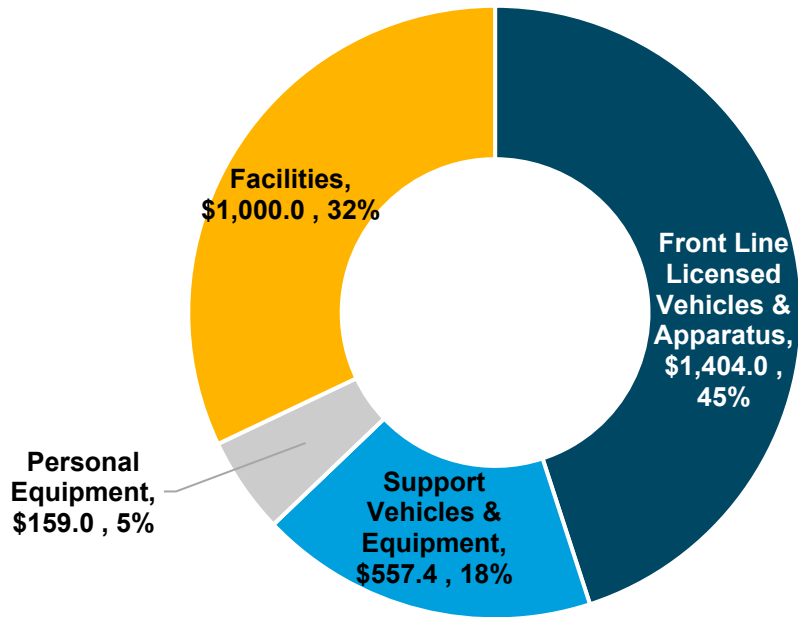
Proposed Levels of Service

- Of the total, Front Line Licensed Vehicles & Apparatus represents the largest share of the total annual expansion and upgrade costs amounting to about $1.4 million per annum.

- The first round capital costs would primarily be funded from the City's DCs. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $4.3 million at Year 10 once the assets come into service over the period.

- *Source: 2024 DC Study, 2023-2027 Capital Plan & Discussions with Staff*

$1.9M Annual OPEX Impact at Year 10

$2.4M Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Front Line Licensed Vehicles & Apparatus	$780,000	$624,000	$140,000	$115,000
Support Vehicles & Equipment	$20,000	$537,400	$76,000	$36,000
Spare Vehicles	$0	$0	$0	$0
Personal Equipment	$159,000	$0	$11,000	$14,000
Facilities*	$900,000	$100,000	$11,000	$27,000
Total	**$1,859,000**	**$1,261,400**	**$238,000**	**$192,000**

*Facility expansion needs are for non-station related facilities, and upgrades are related to facility electrification costs. All Fire Station expansions are captured in Appendix A.7

E.8 (Fire Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Better classifications of frontline vehicles is needed; some vehicles currently require manual alterations to the data set in order to correctly classify vehicles between "Front line", "Support", and "Other" vehicles. Manual adjustments such as this should be avoided to maintain consistency in reporting year-over-year.

- Establish and document a consistent method of determining useful life for vehicles based on individual asset attributes.

- Further integration of LOS with metrics already tracked by fire department based on regulatory requirements for response times, fire prevention, total responses, and response quality.

Process Optimization

- Assess the effects of urbanization on asset requirements in order to better estimate the costs required to maintain service levels in an increasingly urbanized city as outlined in the Fire Master Plan. Changes to traffic patterns, increased incidents in high-rise buildings, and more dense population distributions may decrease service levels due to this demand driver.

Technology & Tools

- Establish a centralized system to track and store asset data such as asset condition, value, in-service date, lifecycle, and purchase details especially for smaller asset types.

Parks Services

F.1 (Parks Services) – Maturity Assessment

58 Pre-Project Score

68 Current Score

88 Target Score

Activities to Achieve Target Score in Future

- Develop a framework to establish expected lifecycles for all assets (at the component level, where applicable) and compare them with actual replacement timelines to ensure assets are being managed effectively.
- Move beyond categorizing and scoring capital projects by exploring various options evaluation methods and adopting a long-term approach to asset prioritization and evaluation.
- Establish a tree condition inspection program as part of a periodic cycle, to track physical parameters and condition of trees.
- Update the established main database at the sub-asset level for all remaining assets through GIS to centralize asset information, retirements, and maintenance data.

Pre-Project Score
Current Score
Target Score

Radar chart axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	58	74	89
Developing AM Lifecycle Strategies	53	64	82
Asset Management Enablers	62	66	91
Overall Score	58	68	88

APPENDIX F.2 - SOLI REPORT CARD

Parks

Total Asset Replacement Value:	$691.0 Million
Total Asset Replacement Value Including Facilities, City Support Fleet and Software	$737.7 Million
Future Condition Trend (Next 10 Years):	Declining - As assets age they may require attention in the future
Data Confidence & Reliability:	Age & Condition Based

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: **"Responsibility View"** and a **"User View"** representation

Responsibility View: Shows the assets under the service area that is responsible for managing them
User View: Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View

✓ provides a direct line of sight to those assets managed by the service area;
✓ will help prioritize lifecycle activities managed by the service area;
✓ aligns with industry best practices; and
✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Parks Services		
Parking Lots*	$50.2	333
Small Engine Equipment	$0.7	532
Trees	$145.8	249,749
Flower Beds	$3.6	1,232
Park Assets		
Parks**	$127.1	1,119 Hectares
Natural Heritage Lands***	$0.0	1,645 Hectares
Park Furnishing	$3.8	4,728
Playgrounds	$106.4	345
Shade Structures	$37.7	292
Splash Pads & Outdoor Pools	$3.6	8
Fitness Equipment	$1.0	28
Skate Parks	$1.9	4
Sports Facilities	$137.8	1,172
Pathways	$71.5	296,065 Metres
Subtotal Assets Managed by Parks (Responsibility View)	*$691.0*	-
Assets Managed by Other Service Areas		
Parks Facilities	$24.0	18
City Support Fleet Used by Parks	$22.7	339
Software Used by Parks	$0.0	1
Total Replacement Value (User View)	**$737.7**	-

* Total includes 156 parking lots and 177 islands with a total area of 646,000 sqm

** Includes park development costs such as site preparation, fences, walls etc. but not land costs. These costs are not identified in other asset categories.

*** Valuation of the Natural Heritage Lands is to be included in the future iterations of AMP.

APPENDIX F.2 - SOLI REPORT CARD

Parks

Major Types of Assets within Parks - Responsibility View

The figure on the below illustrates the replacement value and condition of Parks assets under the responsibility view. Under the responsibility view, the total replacement value of the Parks assets is $691.0 million. Of the $691.0 million replacement value, about 71%, or $490.8 million, is attributed to park assets, which include sports facilities infrastructure, pathways, playgrounds, etc. Furthermore, about 21%, or $145.8 million is attributed to trees. The remaining assets are valued as detailed below. As the Parks infrastructure is in overall Good condition, the infrastructure is meeting current needs, however, these assets may require attention as they age over time. Only about 8% of assets are considered to be in Poor and Very Poor Condition.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

Small Equipment, $0.7 , 0%
Flower Beds, $3.6 , 1%
Parking Lots, $50.2 , 7%
Trees, $145.8 , 21%
Park Assets, $490.8 , 71%

RESPONSIBILITY VIEW: PARKS ASSET CONDITION ($M)

Very Poor, $23.4 , 3%
Poor, $31.1 , 5%
Very Good, $136.9 , 20%
Fair, $158.1 , 23%
Good, $341.5 , 49%
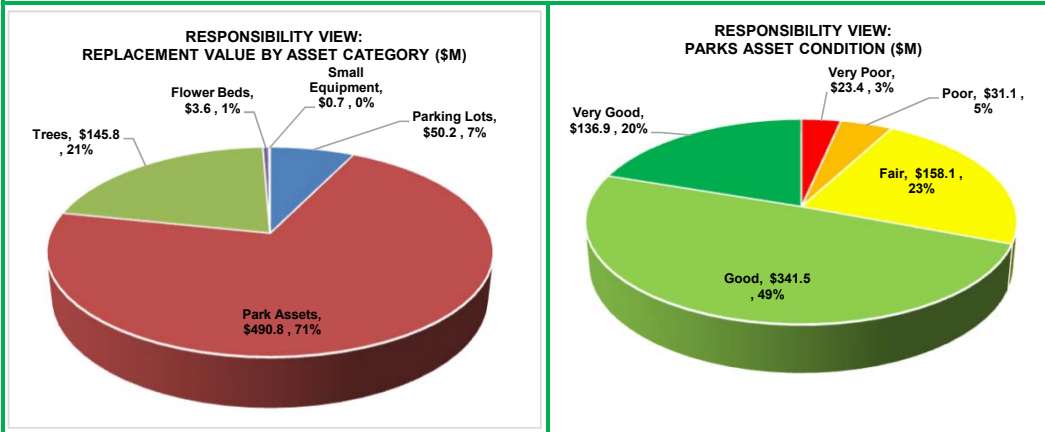
Data Source: Departmental Inventories, GIS database, City of Brampton 2019 DC Background Study

Major Types of Assets within Parks - User View

The figures below illustrate the replacement value and condition of Parks assets under the user view. Under the user view illustration which also captures facilities, fleet and software, the replacement value is about $737.7 million. Of this total, the Park Assets continue to represent the largest share at $490.8 million of the assets considered. Facilities assets add $24.0 million to the total replacement value while Fleet adds $22.7 million. Approximately 69% of the assets used by Parks are considered to be in Good to Very Good Condition. Only 4% of assets are in Very Poor condition - this does not mean the assets are unsafe.

USER VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

Small Equipment, $0.7 , 0%
Fleet, $22.7 , 3%
Facilities, $24.0 , 3%
Flower Beds, $3.6 , 0%
Parking Lots, $50.2 , 7%
Trees, $145.8 , 20%
Park Assets, $490.8 , 67%

USER VIEW: PARKS ASSET CONDITION ($M)

Very Poor, $28.2 , 4%
Poor, $36.3 , 5%
Very Good, $154.0 , 21%
Fair, $165.7 , 22%
Good, $353.5 , 48%
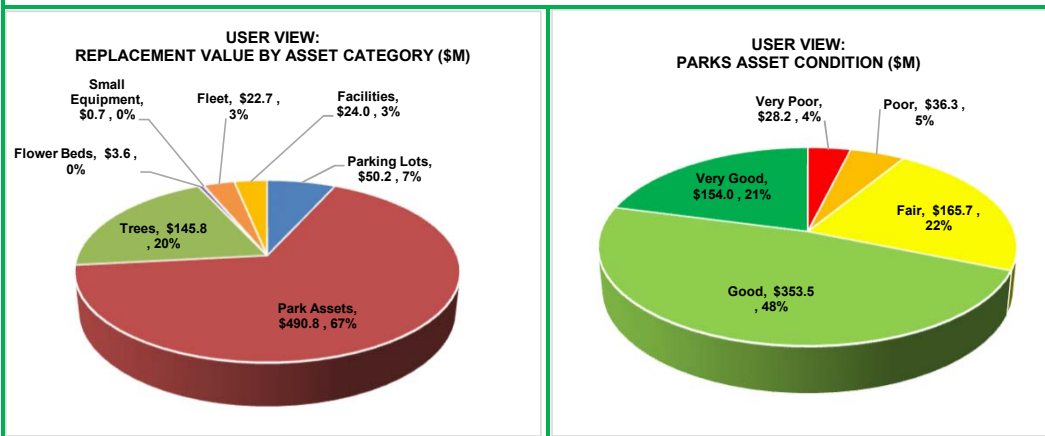
APPENDIX F.2 - SOLI REPORT CARD

Parks

Age Summary

The following figure summarizes the average age of the City's Parks Assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated. It is important to emphasize that the age of an asset relative to its useful life does not always provide a complete picture of its actual condition.

Legend: Average Age (Beyond Useful Life) | Average Age | Expected Useful Life

Asset	Average Age	Expected Useful Life
PARKING LOTS	10	20
SMALL ENGINE EQUIPMENT	11	10
PARKS	26	
PARK FURNISHING	4	12
PLAYGROUNDS	9	20
SHADE STRUCTURES	11	20
SPLASH PADS & OUTDOOR POOLS	6	20
FITNESS EQUIPMENT	3	15
SKATE PARKS	7	20
BLEACHERS	7	23
PLAYERS BENCHES	7	23
SPORTS FIELDS	34	
TRACK	9	25
TENNIS COURTS	17	25
MULTI-PURPOSE COURTS	11	25
DOG PARKS	8	20
OUTDOOR BOX ARENA	15	25
PATHWAYS	6	20
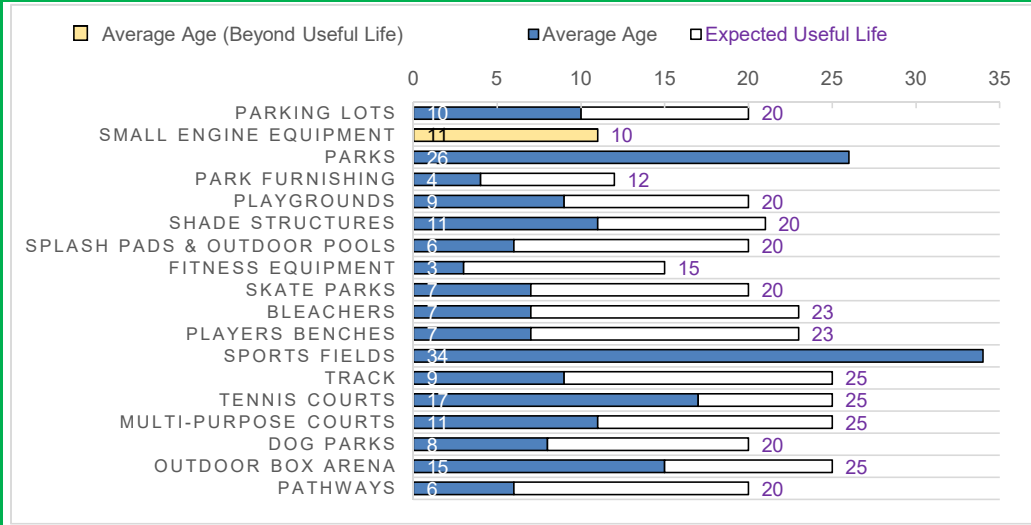
Condition Summary

The figure below illustrates the condition of the various Parks assets by key sub-component areas based on the user view. While the assets are generally in Good to Very Good condition, a small portion of Park Assets, Trees, Facilities and Fleet are in Very Poor condition. These condition assessments do not indicate that the assets are unsafe; generally these assets are nearing the end of their useful life and are due for replacement in the near future. Poor and Very Poor assets do not represent a safety issue or preclude service areas from delivering services to meet the needs of residents and will be addressed through the budget.

Condition	Parking Lots	Small Engine Equipment	Park Assets	Trees	Flower Beds	Facilities	Fleet
Very Good	10%	6%	19%	24%	100%	51%	21%
Good	41%	75%	56%	33%		29%	22%
Fair	39%	18%	16%	41%		10%	32%
Poor	10%	1%	5%	1%		1%	13%
Very Poor			4%	1%		8%	12%
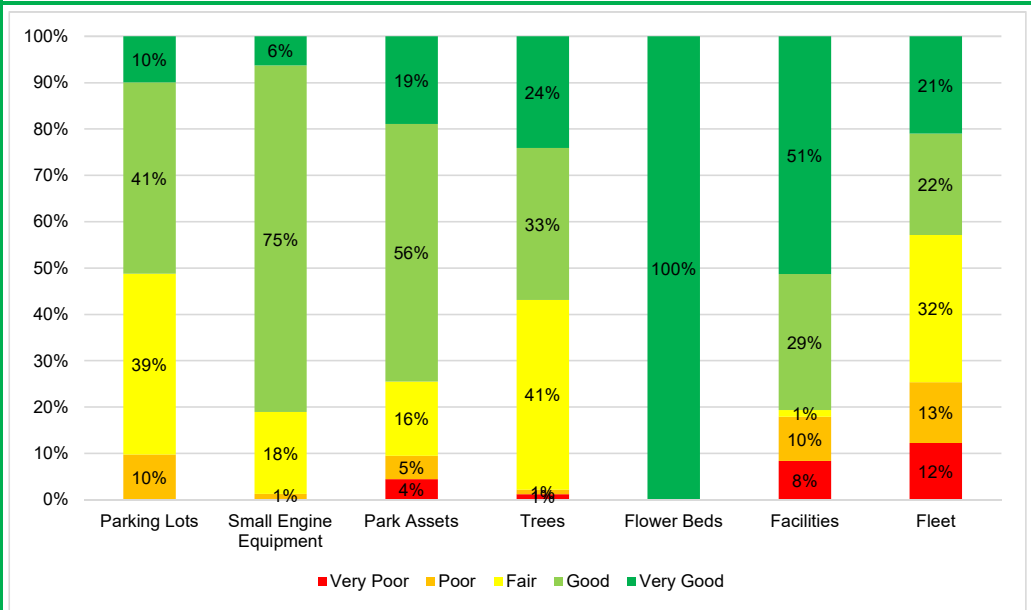
Note: The majority of assets in Very Poor condition were assessed based on the "age" of the asset relative to the useful life and may not accurately reflect actual asset condition.

APPENDIX F.2 - SOLI REPORT CARD

Parks

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Parks assets in the 2022 SOLI relative to the 2021 SOLI while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the total value of Parks assets has increased by 11% from approximately $623.2 million to $737.7 million. The increase in value can largely be attributed to cost increases since the last report. Where available, recent costing data was used such as for Parking Lots, Playgrounds, Pathways & Trees, while the remaining asset replacement values were inflated by the either the Non-Residential Building Construction Price Index (NRCPI) or the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report.

When considering the facilities, fleet and IT assets, the total value has increased by $73.4 million from the value reported in 2021 after inflationary adjustments. This again is attributed to better asset valuations to reflect replacement costs in current dollars.

Please note that Facilities, City Support Fleet and IT report cards include additional information (including the inflation measure applied) on those assets used by Parks but maintained and managed by different City departments.

Asset	2021 SOLI		2022 SOLI	
Parking Lots	333	Pooled	333	Pooled
Small Equipment	892	Each	532	Each
Trees	249,749	Each	249,749	Each
Flower Beds	1,200	Each	1,232	Each
Park Assets				
Parkland (Excluding Natural Heritage Lands)	1,119	Hectares	1,119	Hectares
Natural Heritage Lands	1,645	Hectares	1,645	Hectares
Park Furnishing	4,898	Each	4,728	Each
Playgrounds	340	Each	345	Each
Shade Structures	290	Each	292	Each
Splash Pads & Outdoor Pools	8	Each	8	Each
Fitness Equipment	18	Each	28	Each
Skate Parks	4	Each	4	Each
Sports Facilities	1,181	Each	1,172	Each
Pathways	278,379	Metres	296,065	Metres
Facilities	18	Each	18	Each
Fleet	357	Each	339	Each
Software	1	Each	1	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 20,723,422	$ 23,959,029	$ 3,235,607	16%
Fleet	$ 20,350,325	$ 22,722,433	$ 2,372,108	12%
Software	$ -	$ -	$ -	0%
Subtotal Assets Managed by Other Service Areas	**$ 41,073,747**	**$ 46,681,461**	**$ 5,607,715**	**14%**
2. Assets Managed by Parks Services				
Parking Lots	$ 43,646,809	$ 50,168,380	$ 6,521,571	15%
Small Equipment	$ 2,761,877	$ 702,499	$ (2,059,378)	-75%
Trees	$ 142,911,373	$ 145,769,600	$ 2,858,227	2%
Flower Beds	$ 3,870,288	$ 3,607,484	$ (262,804)	-7%
Park Assets				
Parkland (Excluding Natural Heritage Lands)	$ 115,371,049	$ 127,081,185	$ 11,710,136	10%
Natural Heritage Lands	$ -	$ -	$ -	0%
Park Furnishing	$ 3,557,856	$ 3,767,108	$ 209,252	6%
Playgrounds	$ 101,288,280	$ 106,438,750	$ 5,150,471	5%
Shade Structures	$ 34,382,396	$ 37,656,393	$ 3,273,996	10%
Splash Pads & Outdoor Pools	$ 3,236,684	$ 3,634,637	$ 397,953	12%
Fitness Equipment	$ 795,906	$ 1,007,060	$ 211,154	27%
Skate Parks	$ 1,697,933	$ 1,906,695	$ 208,762	12%
Sports Facilities	$ 127,425,724	$ 137,766,643	$ 10,340,920	8%
Pathways	$ 42,270,713	$ 71,511,673	$ 29,240,960	69%
Subtotal Assets Managed by Parks Services (Responsibility View)	**$ 623,216,887**	**$ 691,018,109**	**$ 67,801,222**	**11%**
Total Replacement Value: User View (1+2)	**$ 664,290,634**	**$ 737,699,571**	**$ 73,408,937**	**11%**

*Responsibility of managing the assets lies with another service area, but assets are used by Parks

F.3 (Parks Services) – Levels of Service

Percentage of Assets at Fair or above condition

Overall, 93% of parks assets are currently at or above "Fair" condition. The target performance for this measure is a 90% minimum. In order to continue to provide this high level of service, staff will need to continue regular preventative maintenance, repair, and replacement of poor condition assets. Parks will need to maintain current funding levels adjusted to account for growth.

Number of playgrounds that do not meet accessibility standards based on surface quality (Hedge Sand)

Brampton currently has 65 playgrounds that do not meet the AODA accessibility standards. The 10-year target set by staff is to reduce this number to only 14. All new playgrounds constructed are compliant with the AODA standards, and as playgrounds age and are due for replacement, they are made to be AODA compliant. The 5-year annual average need for playground replacement forms the basis of the cost to achieve this target, which has been determined to be $5.6 million annually for overall playground replacements.

Number of Trees Planted

Goal of 1 million trees would not be achieved by the City itself. City works with development industry and interest groups to meet target. Cost of tree replacement by the City is estimated at $6.3 Million (4,000 trees annually replaced at $1,575 per tree, including tree and stump removal and planting). In addition to this, about 6320 new trees are planted annually by various City departments and other jurisdictions. Roughly estimated $3M annually will be allocated in the Forestry budget for the new trees planting over the next 10 years. New trees planted by the City or other jurisdictions would trigger additional operating and maintenance cost needs, estimated at approximately 1.8% of the new tree planting cost. About $370,000 average annual O&M top up is needed to maintain sustainable tree population over next 10 years.

Maintained Parkland (hectares)

The City of Brampton currently maintains 1,183 Ha of parkland (excluding Natural Heritage Land). The target performance is detailed in the Parks and Recreation Master Plan which is currently being updated. The Plan aims to establish a target for a neighbourhood park within a 400 M radius from any new construction and a community park within an 800 M radius from any new construction. Based on the 2024 DC Study, the City has identified a 10-year budget of about $175 million to develop parkland (note this figure excludes the urban forest canopy program).

Number of grass trims per year on parklands and boulevards

No gap exists between current performance and desired target performance. Staff currently perform 6 low-priority cuts, 14 regular-priority cuts, and 24 high-priority cuts per year. The current budget is adequate to continue performing this service and the $3.5 million in annual budget should be maintained and adjusted for growth as the City expands its services.

F.3 (Parks Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Quality	Parks services meet customer needs and expectations	Renewal/O&M	% of Assets at Fair or above condition	Park Assets	93%	> 90%
Function	Park Assets meet customer needs and expectations	Upgrade	Number of playgrounds that do not meet accessibility standards based on surface quality (Hedge Sand)	Park Assets	65	14
Function	Trees and plants are sustainable and providing an enhanced environment	Upgrade	# of Trees Planted	Trees	7,300 (2023 City paid new and replacement trees combined)	City-paid Target: Approximately 7,000 trees/annum (new and replacement trees combined) City-wide Vision 2040 Target: 1 Million Trees Planted
Capacity and Use	Open Space is available and accessible to residents	Growth	Maintained Parkland (hectares)	Park Assets	1,183 Ha	400 M Radius for Neighbourhood Park and 800 M radius for Community Parks
Quality	Parks services meet customer needs and expectations	O&M	Number of grass trims per year on parklands and boulevards	Parkland	Standard cuts - Low: 6 times per year - Regular - 14 times and High - 24 times per year	Maintain Standard cuts - Low: 6 times per year - Regular - 14 times and High - 24 times per year

F.4 (Parks Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth & Urbanization	Brampton is one of the fastest growing Cities in Canada. The City is expected to grow to 890,000 by year 2041. With new greenfield land opportunities continuing to diminish, development is intensifying in already established and built-up areas. As of year-end 2021, the City has about 1,120 hectares of maintained parkland and a further 1,645 hectares of natural heritage lands that the City owns or maintains	Brampton's population is projected to grow to 985,000 by year 2051. Increased urbanization is expected since it will be required to achieve and accommodate the provincial and regional growth figures. This growth would necessitate the development of approximately about 240 hectare of maintained parkland over the next 10 years.	Increase in population causes overcrowding impacting the service level of each type of facility/space per capita and adversely affecting the quality of experience, discouraging residents to adopt active living. Without constant budget for growth of outdoor space and facilities, the preservation of natural environments and provision of green space will become challenging. Furthermore, with increased urbanization, the need for new "urban parks" are likely to increase. This type of parkland is not common in the city but may be needed in the future.	↑	In order to support the new growth, all possible opportunities should be considered (whether through development process or alternative methods) to convert lands already owned, or to obtain lands for conversion to parkland or for programming, especially in under-served areas. 241 hectares of NEW parkland will be required by 2031 to meet a ratio of 1.6 hectares of parkland per 1,000 residents. Close tracking of data related to market demand factors (registration and usage levels) and utilization patterns to ensure that adequate outdoor facilities are being provided to make decisions related to customer preferences and support new population growth. New pilot program is being established to track park facilities utilization rate to help inform planning. City has, in the past, targeted 1 new tennis court per 10,000 people in new development areas, requiring 30 new courts by 2031. Playgrounds are recommended to be within 800 meters of each established residential area. (3 required currently to keep up with this service level) Parkland Typologies may require change in intensification areas. For example, the development of high rise condos along the Queen St. Corridor give rise to both the opportunity and need for POPS and strata parks. By the year 2031, the Parks Master Plan 2017 recommends the following additional facility requirements to keep up with population growth: - 9 new Rectangular Fields - 3 new Cricket Pitches - 30 new Tennis Courts - 2 new Skateboard Parks - 1 new Bike Park - 5 new Splash Pads Currently City is working on the refresh of the 2017 Parks and Recreation Masterplan to reevaluate demand for Park facilities. Current approach to general park demand treatment is to provide Neighbourhood park within max 400m distance and City/Community park within max 800 m reach.	$3.6 M for 30 new tennis courts (Cost per court * PRMP need) Total Parkland development costs $178.4 million. This includes construction of outdoor rinks, neighbourhood parks, local parks, parkettes, cricket pitches, urban forest canopy program, parks community asset redevelopment, trails and trail bridges. Total of $17.0 million for park outdoor assets including shade structure. (Source: 2024 DC Study)

F.4 (Parks Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Climate Change	Climate change events are already prevalent and experienced at different levels and magnitudes from each jurisdiction.	Parks department expects to experience warmer air temperatures, increased precipitation, and more extreme weather events in the future.	Greater demand for shade structures and other forms of protection from the weather. Increased requirement for maintenance of trees and other natural features.	↑	Building parks with bio swales (or dry ponds; a component that floods periodically). Provides unmaintained recreation space when there is no water.Greater focus on planting trees, protecting green space around the edges of parks, and maintaining Natural Heritage Lands. Implementation of public gardens and gardening programs can support preferences of the aging population-base, especially as air temperatures rise and precipitation increases. Replacing vegetation with heat resistant species.SNAP Program, which is taking place in the County Court Neighborhood, to help prepare areas for climate change and become more environmentally friendly for residents and businesses. (SWM pond retrofits to become community amenities, etc.)	Cost for City education and signage, fencing, etc. for dry ponds in the parks which are periodically flooded. Tree replacement cost is $1,575 per tree (includes removal, stumping and new tree planting). Community Benefit Charge Strategy - $500k for vertical garden program (over 10-years) Urban forest canopy program $4.8 million over the next 10-years. Shade structure program $8.0 million over 10-years.Note that tree and vertical garden costs are already included in the Demand due to Population growth above.
Legislation	The changes put forward under Bill 23 (More Homes Built Faster Act) will drastically change how a municipality plans for new parkland as the cash-in lieu and dedication requirements have been reduced.	The City will need to look to alternative methods and funding mechanisms to address the shortfalls derived from the Bill	Reduction in maintained parkland Limited control of the type of parkland to be provided as part of the development process (i.e. more encumbered land can be accepted by the City)	↑	Review alternative method to achieve Parkland goals Maximize usage at existing park space	Cost to bridge gap from Bill 23 is currently being quantified. Cost ranges related to developing new parkland identified in the Population Growth and Urbanization Demand Driver Above.

F.4 (Parks Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Customer Preferences, Age Structure, and Diversity	Parks users are a subset of the overall Brampton population, which is young overall and very diverse. Customers continue to expect quality services, specific to their wants, for their tax dollars.	Resident preferences are changing over time in tandem with changes in Brampton's age structure, demographics, and societal shifts. Rates of physical inactivity is expected to continue to increase due to lack of free time and sedentary lifestyles becoming more normalized. (*from master plan*)	Pressures from both long-standing groups offering traditional sports and specialized sport groups to provide more facilities and extended booking hours to expand membership numbers.

Growing demand for the ability of parks users to partake in spontaneous activities and unstructured sports, allowing them to use parks outside of busy lifestyles.

Demand for certain activities is increasingly influenced by social media and popular culture, creating unpredictable spikes in demand.

More diverse communities require a wider range of sporting and outdoor facilities to support a wider array of cultural demands. Planning to ensure that new senior's spaces are nuanced towards the prevalent cultures depending on demographics of certain neighborhoods.

Increasing requests for electricity at playgrounds and gazeboes as technology is becoming more prevalent.

Customer profiles will continue to place demand on the type of parkland amenities offered and provided | ↑ | Providing lighting at outdoor recreation facilities may be more cost effective than the creation of more outdoor facilities, if the goal is only to increase the useable hours, rather than peak-demand period capacity.

More flexibly designed outdoor spaces offer great opportunity for socialization of communities and unscheduled recreation for users at a fairly low investment cost to the City.

More multi-use courts and facilities allow the participation of both traditional and specialized sport groups to use facilities for structured sports during peak demand hours and unstructured sports during off-peak hours. This also helps to deal with seasonal demand and spikes created by cultural shifts and popular culture.

Non-Infrastructure Solutions for peak demand periods - Using non-city owned facilities to manage demand spikes
- Example: Use school gyms to increase the number of basketball courts available for use

Currently in trial: offering power at some gazeboes under lock-and-key that must be booked in advance to support gatherings, community-run programming, etc.

customer survey and studies to understand customer profiles - input to growth related infrastructure needs | Lighting cost per tennis or multi-use court is estimated at $150k

Non-infrastructure solution - user fee policy review to address peak period demands

Budget costs for Cricket pitch - $454K

Total Parkland development costs included above. |

F.5 (Parks Services) – Risk Management

Risk Identification

| Likelihood | Consequence | | | | |
	C1	C2	C3	C4	C5
P5	Medium	Medium	High	High	Extreme
P4	Low	Medium	Medium	High	High
P3	Low	Low	Medium	Medium	High
P2	Insignificant	Low	Low	Medium	Medium
P1	Insignificant	Insignificant	Low	Low	Medium

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

| In $Millions | Consequence | | | | |
	C1	C2	C3	C4	C5
P5	$0.0	$2.1	$1.7	$0.0	$0.0
P4	$0.0	$13.9	$1.6	$0.0	$0.0
P3	$0.0	$206.5	$165.9	$0.0	$0.0
P2	$0.0	$212.6	$47.8	$0.0	$0.0
P1	$0.0	$0.0	$38.8	$0.0	$0.0

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Parks. In total, about $691.0 million in assets have been assessed. The majority, about $505.7 million (73%) have been assessed as Low risk. Approximately $183.6 million (27%), are assessed to be in the Moderate risk category. The remaining $1.7 million (less than 0.5%) have been assessed as High risk. No assets have been assessed to be in the Extreme risk category.

Parks - Summary of Risk Assessment by Replacement Value ($ Millions)
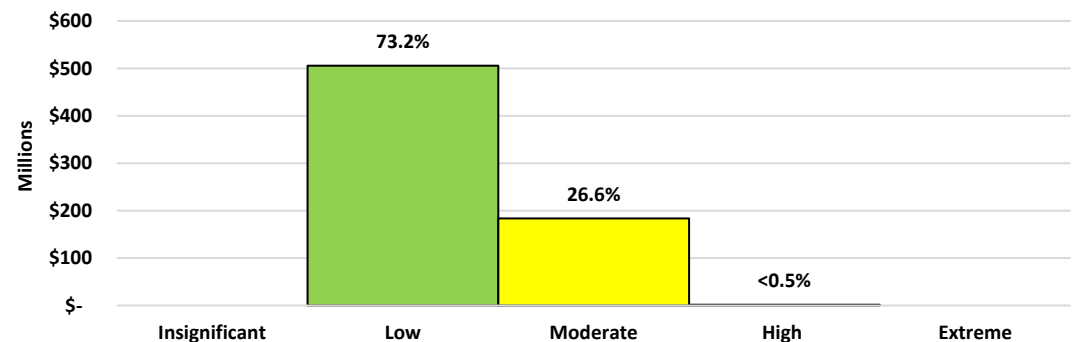
Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:
- The risk map indicates that there are no assets which fall into the Extreme risk category. That said, there is a small number of assets which are assessed as High risk.
- The High-risk assets represent less than 0.5% (or $1.7 million) of total Parks assets, which relates to some trees with a moderate consequence (C3) of failure accompanied with a high probability of failure (P5) due to assets being in Very Poor condition.
- The City will further prioritize addressing the condition of these assets. Ongoing tree inspection programs will inform the replacement needs and update the current tree inventory.

APPENDIX F.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Parks Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, CityWorks, ESRI GIS, AssetWorks(M5), PeopleSoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
HR Holistic Review (Overall Review of SA)	**1.1** Active Holistic Review of Business Requirements (High Level)	Completed	CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.
DM Data Management (Governance and Collection)	**1.1** Formalize asset data governance including interdependent assets	In progress - Significantly Completed	Identify/clarify data management responsibilities and asset ownerships for all asset classes and subclasses, specifically for natural /green and drainage assets (i.e.. Between Recreation and Parks).
	1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	In Progress - Minimally Completed	Develop and establish procedures and protocols for 'new asset creation and data transfer' for Parks and Forestry asset information and maintenance requirements from internal and external stakeholders (incl. Parks Planning), specially for highly interdependent assets (i.e.. Shared data points for parks, SW and recreation).
SOI State of Infrastructure (Asset ID, Location, Classification, Physical Attribute, Condition)	**1.1** Improve on inventory data and attributes.	In progress - Significantly Completed	Evaluate where condition assessment is required and establish assessment protocols. Expand asset inventory and attributes in-line with the Corporate Framework for all assets categories and sub-categories.
	1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions. Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.	In progress - Significantly Completed	Assess the functionality and capabilities of one of the existing inventory management solutions available for implementation. Prioritizing a geographical solution or solutions that can aid the SA to capture climate change impacts(i.e.. Vulnerability) and allow SA to mature inventories for all asset types (i.e.. flower beds, trees, walls, curbs, natural/green assets).

APPENDIX F.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Parks Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, CityWorks, ESRI GIS, AssetWorks(M5), PeopleSoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	Not Started	Establish clear and measurable levels of service for all asset categories. Collect the pertinent information at agreed upon frequency for regular tracking.
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In Progress - Minimally Completed	Implement a structured approach for collecting, analyzing, and reporting LOS data to Organizational Performance group for City's dashboard on tracked LOS and current performance.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In Progress - Minimally Completed	Utilize existing capabilities of CityWorks to link lifecycle activities and LOS for better understanding of costs associated to each LOS.
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In Progress - Minimally Completed	Identify the source of information including costing to perform identified lifecycle activities. Calculate cost of performing lifecycle activities for all assets categories and sub-categories.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In progress - Significantly Completed	Further implementing AssetWorks(M5) and City Works for LC activity tracking for small engine assets and trees and review analytical tools for LC cost analysis.
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	Not Started	Review and define data attributes to capture likelihood and consequence for risk identification.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Integrate asset replacement values with asset inventory system and establish frequencies of updates.
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Integration of parks assets and collaborate with IT/CAMO/Parks team to assess the incorporation of Parks assets into a corporate wide DSS/or an appropriate system.
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In Progress - Minimally Completed	Refer to LC 1.1 (Lifecycle Strategy data type 1.1)

F.7 (Parks Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$30.6M Total O&M Cost per Annum ($M)

Park Assets, $13.6, 44%
Small Engine Equipment, $0.03, 0.1%
Playgrounds and Shade Structures, $7.6, 25%
Sports Amenities, $5.8, 19%
Trees and Flower Beds, $3.6, 12%
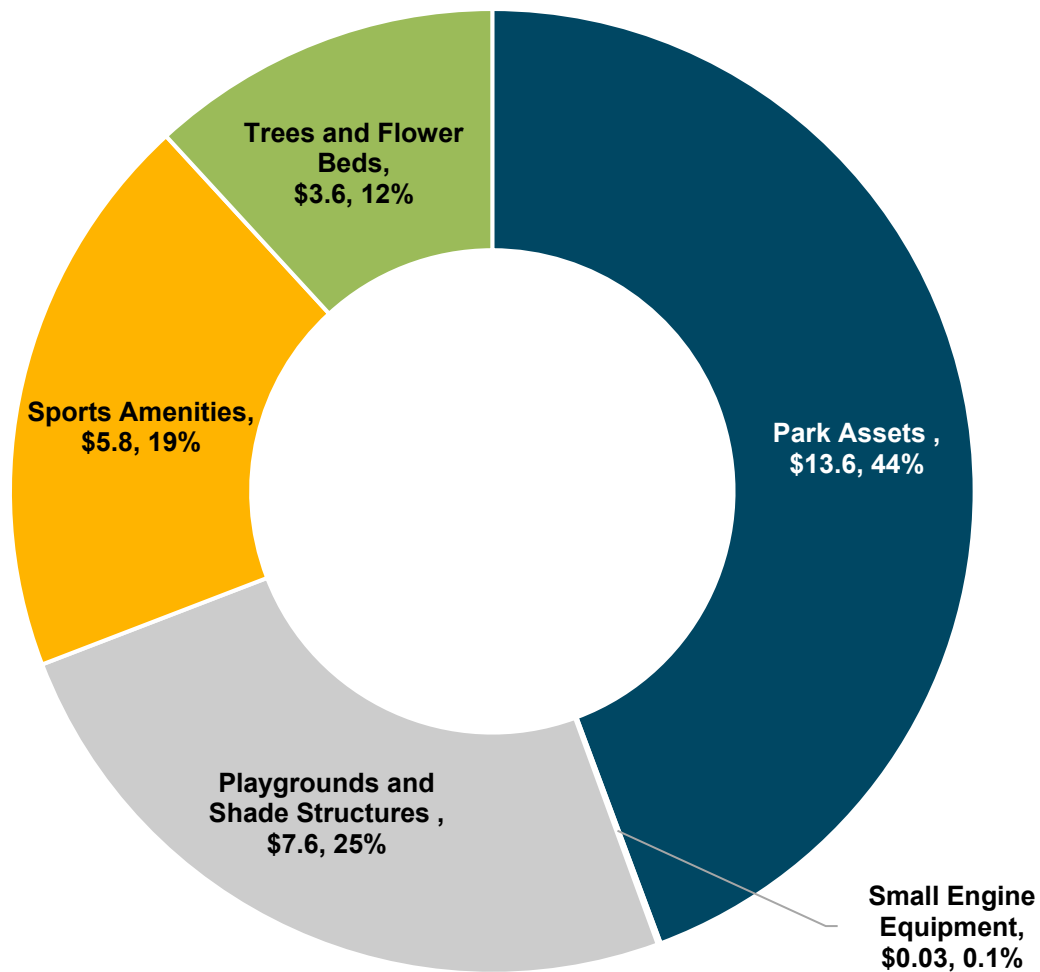
O&M Activities

- **Park Assets:** Grass cutting, sodding, irrigation, lighting testing, signage maintenance, parking lot and pathway repaving.

- **Small Engine Equipment:** Small engine equipment maintenance.

- **Playgrounds & Shade Structures:** Playground inspections, shade structure safety inspections, routine maintenance.

- **Sports Amenities:** Grass cutting, sodding, lighting testing, field and diamond painting, field and diamond sweeping.

- **Trees & Flower Beds:** Tree pruning, flower watering, tree inspections.

F.7 (Parks Services) – Lifecycle Management
Capital Activities

Asset Category	Sub-Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Park Assets	Parking Lots	$50,168,000	20	Replacement	$209,000
	Parks*	$127,081,000	N/A	Replacement	$528,000
	Natural Heritage Lands**	-	N/A	Replacement	$0
	Park Furnishing	$3,767,000	12	Replacement	$16,000
Pathways	Pathways	$71,512,000	20	Replacement	$2,242,000
Small Engine Equipment	Small Engine Equipment	$702,000	10	Replacement	Negligible
Playgrounds & Shade Structures	Playgrounds	$106,439,000	20	Replacement	$5,578,000
	Shade Structures	$37,656,000	20	Replacement	$1,950,000
Sports Amenities	Fitness Equipment	$1,007,000	15	Replacement	$69,000
	Skate Parks	$1,907,000	20	Replacement	$15,000
	Sports Facilities	$137,767,000	24	Replacement & Renewal	$3,702,000
	Splash Pads & Outdoor Pools	$3,635,000	20	Replacement	$228,000
Trees & Flower Beds	Trees***	$145,770,000	67	Removal & Replacement	$6,300,000
	Flower Beds	$3,607,000	20	Replacement	$28,000
Non-Infrastructure Solutions		-	-	-	$160,000
Total		**$745,047,000**			**$21,025,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$21.0 million**.

A variety of approaches are undertaken to determine the annual capital need and appropriate time for replacement of Parks assets. This includes replacement at the end of service life, replacement based on capital budgeting and extensions to the service life of assets to more accurately represent the life of an asset. Some specific examples: Pathway, shade structure, playground and tree replacement investments should be increased from current levels.

Non-infrastructure solutions (NIS) account for an additional $160,000 annually in capital spending.

* Includes site grading, fences, walls, etc.
** Natural assets replacement value and funding needs are currently under development and will be included in the future iterations of the AMP
*** Capital needs calculation is calculated based on adjusted trees replacement value (which is based on the latest planting contracts and incorporates stumping and removal costs).

F.7 (Parks Services) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($M)

- Capital - Non-Infrastructure Solutions, $0.2, 0.3%
- Capital - Replacement, $20.9, 41%
- O&M, $30.6, 59%

Annual Expenditure by Asset Category ($M)

- Trees and Flower Beds, $10.0, 19%
- Park Assets, $14.4, 28%
- Pathways, $2.3, 5%
- Playgrounds and Shade Structures, $15.1, 29%
- Sports Amenities, $9.9, 19%
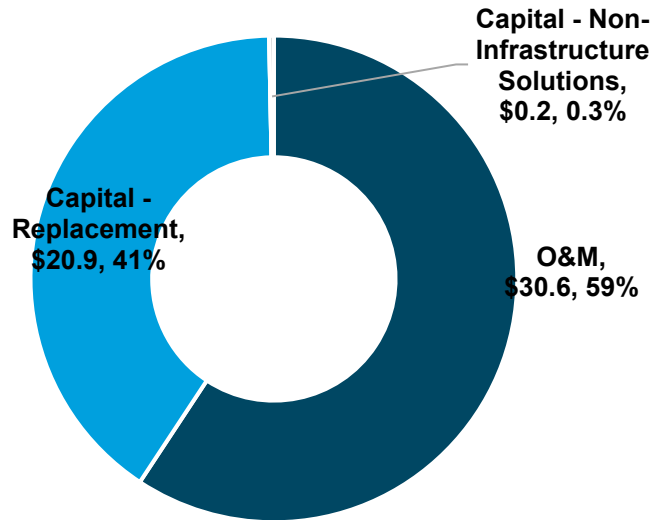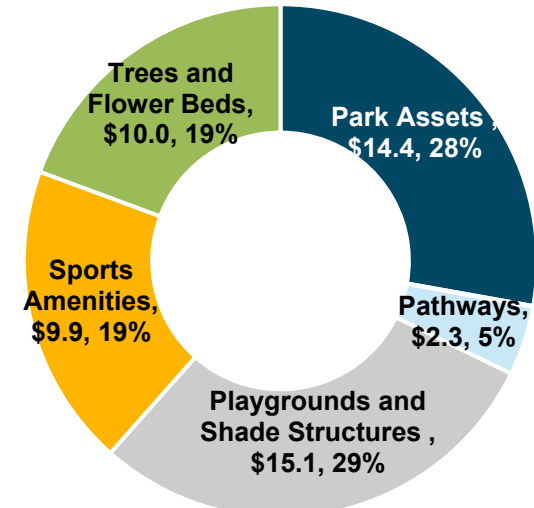
Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Park Assets	$181,016,000	$13,568,000	$792,000	$14,360,000
Small Engine Equipment	$702,000	$32,000	-	$32,000
Pathways	$71,512,000	-	$2,257,000	$2,257,000
Playgrounds & Shade Structures	$144,095,000	$7,571,000	$7,559,000	$15,130,000
Sports Amenities	$144,316,000	$5,822,000	$4,046,000	$9,868,000
Trees & Flower Beds	$203,406,000	$3,619,000	$6,372,000	$9,991,000
Total	$745,047,000	$30,612,000	$21,026,000	$51,638,000

Note: Items with no value in the above table have costs that are not separately identified

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F.7 (Parks Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($000)

- Trees & Flower Beds, $3,943.0 , 23%
- Park Assets, $5,761.0 , 34%
- Sports Amenities, $5,985.0 , 36%
- Playgrounds & Shade Structures, $800.0 , 5%
- Pathways, $384.0 , 2%
- Small Engine Equipment, $2.0 , 0%
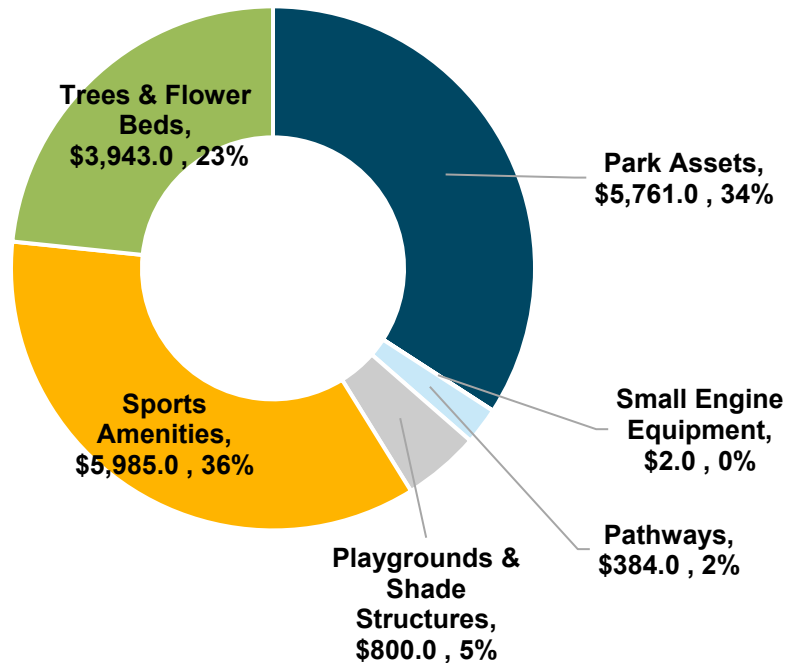
Proposed Levels of Service

- Of the total, Sports Amenities represents the largest share of the total annual expansion and upgrade costs. In line with the growth of the City, other park assets will expand to meet the demands of the community.
- The first round capital costs would be funded from the City's DCs. In addition to the initial acquisition costs, the annual operating and capital asset management costs associated with these acquisitions are expected to reach about $10.3 million at Year 10.
- *Source: 2024 DC Study, 2023-2027 Capital Plan & Discussions with Staff*

$6.6M Annual OPEX Impact at Year 10

$3.6M Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Park Assets	$5,761,000	$0	$24,000	$310,000
Small Engine Equipment	$2,000	$0	$0	$0
Pathways	$384,000	$0	$12,000	$0
Playgrounds & Shade Structures	$800,000	$0	$42,000	$42,000
Sports Amenities	$5,985,000	$0	$167,000	$241,000
Trees & Flower Beds	$3,943,000	$0	$123,000	$70,000
Total	**$16,875,000**	**$0**	**$368,000**	**$663,000**

F.8 (Parks Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Evaluate feasibility of an asset registry for flower beds and garbage cans to allow for tracking of inventory and replacement cost.

- Implement tree inventory and condition inspection program following recent Council approval of the project budget.

- Develop asset registry, replacement value and condition assessment for the Natural and Green assets within Parks Portfolio.

Process Optimization

- Parks and Recreation Masterplan is currently being developed. Future iterations of Parks AMP should further align with the Masterplan, specifically in regards to updated Service Levels in terms of maximal distances to parks and amenities per resident ratios.

- Asset interdependencies matrix between service areas has identified strong interdependences between Parks Service Area and other Service Areas. Develop Service Level Agreements (SLAs) particularly with stormwater and recreation service areas including external stakeholders such as the Region of Peel.

- Develop lifecycle activities and cost analysis for natural assets.

Technology & Tools

- Continue CityWorks implementation at asset and sub-asset level as feasible. Use acquired information for maturing AM practices including confirming actual asset and sub-asset useful life, determining effectiveness of mid-life refurbishments and right time for interventions, using actual asset condition to trigger maintenance or replacement activities.

- Continue to update GIS database with information at the sub-asset level to inform efficient rehabilitation, maintenance and replacement programs. This includes further development of methodologies and frequencies for replacement values update at the component level such as lighting and irrigation, for multi-purpose courts, tennis courts, tracks, and sports fields.

G

Recreation Services
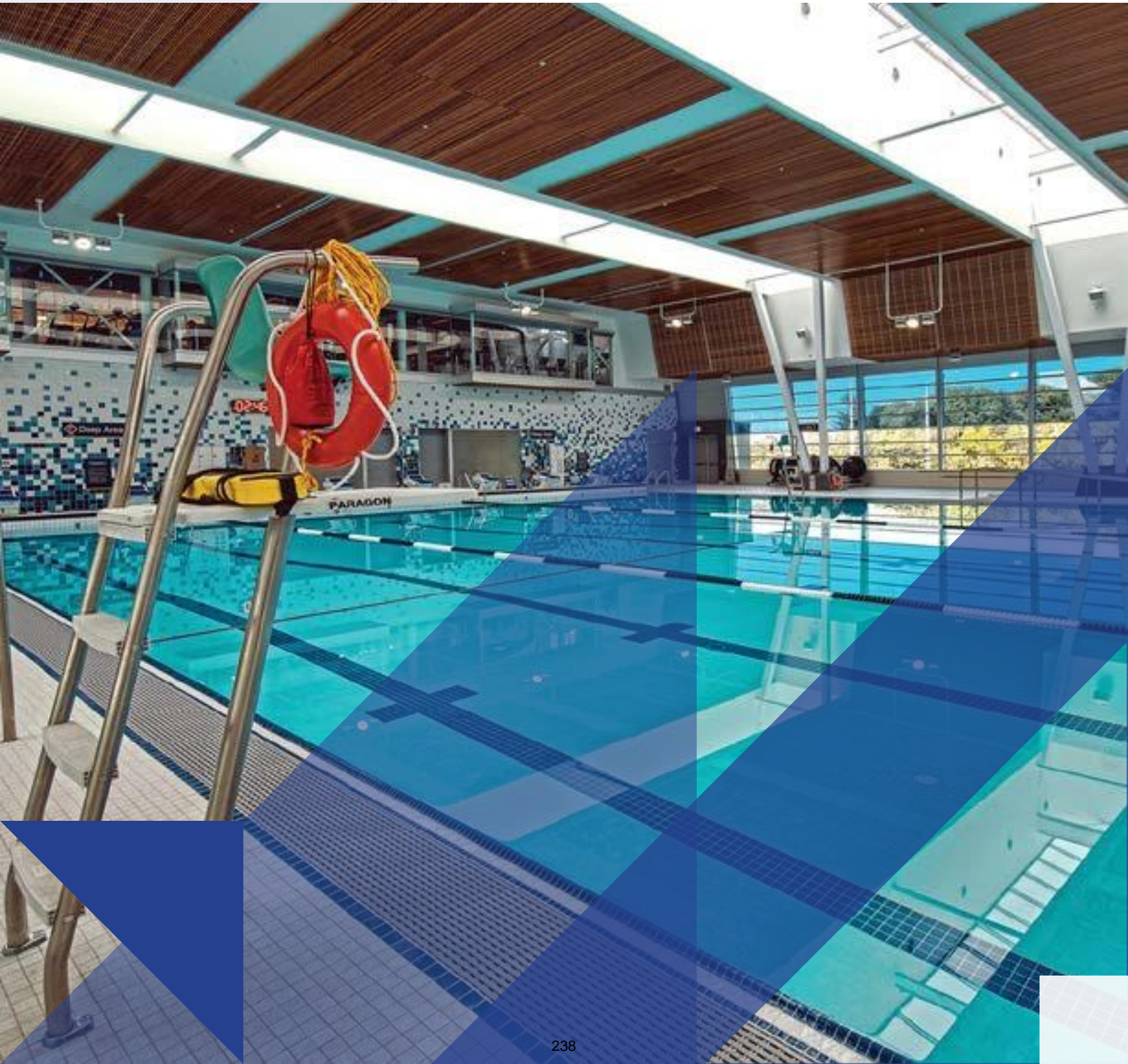
G.1 (Recreation Services) – Maturity Assessment

50 Pre-Project Score

59 Current Score

85 Target Score

Activities to Achieve Target Score in Future

- Conduct a thorough inventory of all assets owned and operated by Recreation and develop a standardized assessment framework that encompasses both Health and Safety reviews and broader condition assessments.
- Develop a prioritization framework for Capital projects based on the agreed decision criteria, incorporating levels of service and risk.
- Collaborate with finance and leadership teams to assess allocations to support ongoing maintenance, repair, and replacement needs within Recreation Services, reducing reliance on emergency funds and reactive budgeting practices.
- Engage IT to provide requirements and identify key functionalities needed in an AIM system. Develop a plan for migrating existing asset data from general-use programs such as Excel to the new AIM system, ensuring hierarchical asset capture with accuracy throughout the process.

Radar chart — Pre-Project Score, Current Score, Target Score across: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement.

Bar chart:

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requiremenats	53	66	86
Developing AM Lifecycle Strategies	46	53	82
Asset Management Enablers	50	58	87
Overall Score	50	59	85

APPENDIX G.2 - SOLI REPORT CARD

Recreation

Total Asset Replacement Value:	$59.30 Million
Total Asset Replacement Value Including Facilities, City Support Fleet and Software:	$810.4 Million
Future Condition Trend (Next 10 Years):	Declining - As assets age they may require attention in the future
Data Confidence & Reliability:	Age & Condition Based

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: **"Responsibility View"** and **"User View"** representation

> *Responsibility View:* Shows the assets under the service area that is responsible for managing them
> *User View:* Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View:

✓ provides a direct line of sight to those assets managed by the service area;
✓ will help prioritize lifecycle activities managed by the service area;
✓ aligns with industry best practices; and
✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Recreation		
Equipment	$46.2	3,087
Furniture	$13.1	303
Subtotal Assets Managed by Recreation (Responsibility View)	*$59.3*	*3,390*
Assets Managed by Other Service Areas		
Recreation Facilities	*$743.5*	*69*
City Support Fleet Used by Recreation	*$4.2*	*123*
Software Used by Recreation	*$3.4*	*3*
Total Replacement Value (User View)	**$810.4**	**-**

Note: The inventory count presented in this asset management plan for Equipment and furniture asset category reflects grouped assets rather than an actual count of individual assets.

APPENDIX G.2 - SOLI REPORT CARD

Recreation

Major Types of Assets within Recreation - Responsibility View

The figures below illustrate the replacement value and condition of Recreation assets under the responsibility view. Under this view, the total replacement value of assets is $59.3 million. Consistent with the 2021 SOLI, only equipment and furniture are considered under the management of this service area. Overall, the Recreation assets are in Fair condition, although, about 52% of the total asset base is rated in Poor to Very Poor condition. The determination of condition for recreation assets is mainly "age based" meaning the condition is set relative to the remaining useful life of the asset. It is expected that future iterations of the SOLI will look to further incorporate condition based assessments which may improve the overall confidence and reliability of the identified condition ratings.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

Furniture, $13.1 , 22%
Equipment, $46.2 , 78%
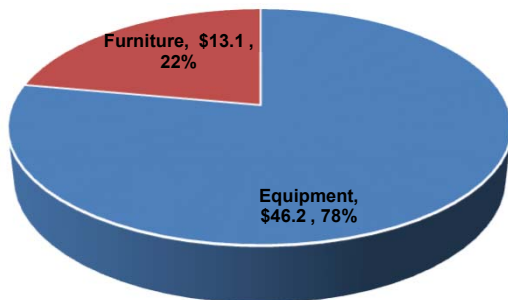
RESPONSIBILITY VIEW: RECREATION ASSET CONDITION ($M)

Very Good, $7.7 , 13%
Good, $8.3 , 14%
Very Poor, $17.5 , 30%
Fair, $12.8 , 21%
Poor, $13.0 , 22%
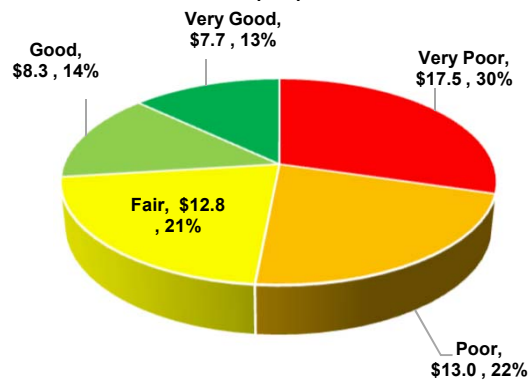
Data Source: PSAB data and historical budgets

Major Types of Assets within Recreation - User View

The figures below illustrate the replacement value and condition of Recreation assets under the user view. Under the user view illustration, which also captures facilities, fleet and software, the replacement value is about $810.4 million. Of this total, the Recreation facilities represent the largest share at $743.5 million. Approximately 87% of the assets are considered to be in Good to Very Good Condition. Only 3% of assets are in Very Poor condition.

It is important to note, that the proportion of assets considered to be in Poor condition can be attributed to some of the Recreation facilities, although, the facilities continue to be operational and safe for use and these facilities will be addressed through the budget as required.

USER VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)

Software , $3.4 , 0%
Equipment , $46.2 , 6%
Fleet , $4.2 , 0%
Furniture, $13.1 , 2%
Facilities , $743.5 , 92%

USER VIEW: RECREATION ASSET CONDITION ($M)

, $19.8 , 3%
, $25.1 , 3%
, $58.2 , 7%
, $189.8 , 23%
, $517.5 , 64%
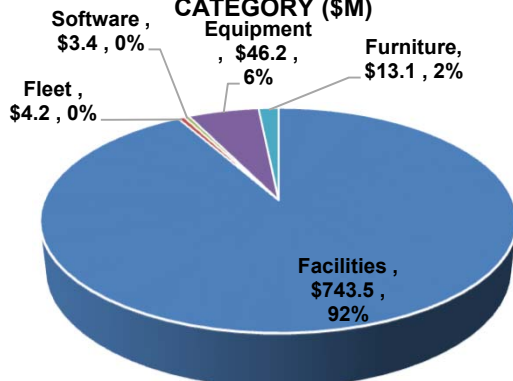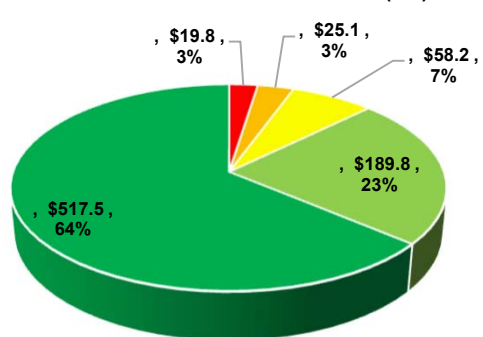
APPENDIX G.2 - SOLI REPORT CARD

Recreation

Age Summary

The following figure summarizes the average age of the City's Recreation Assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated. It is important to emphasize that the age of an asset relative to its useful life does not always provide a complete picture of its actual condition.

Chart legend: ■ Average Age □ Expected Useful Life

Category	Average Age	Expected Useful Life
GENERAL EQUIPMENT	10	10
MAJOR EQUIPMENT	6	11
SPRAY PADS & POOLS	11	15
TENNIS COURTS	12	20
FITNESS EQUIPMENT	9	15
OUTDOOR FITNESS EQUIPMENT	4	15
SKATEBOARD PARKS	12	15
ARTIFICIAL RINKS & TRACKS	9	20
FURNITURE	9	10
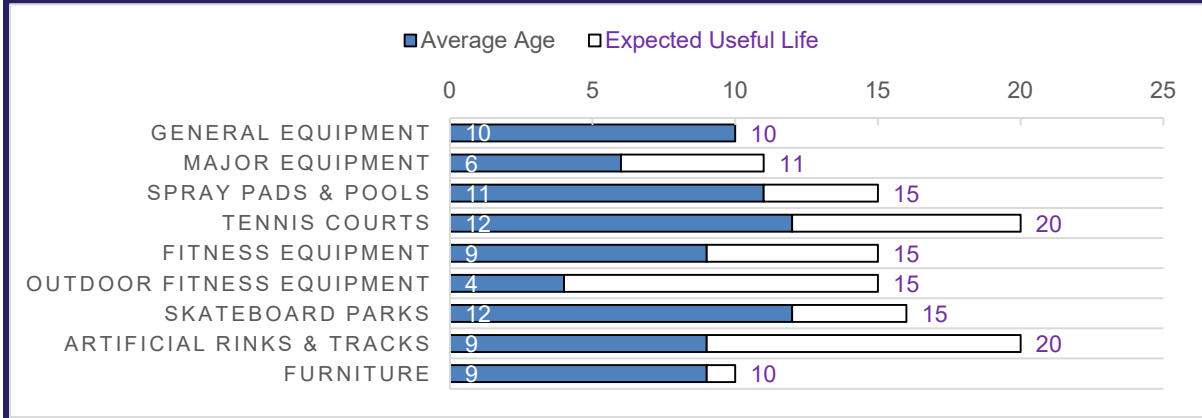
Condition Summary

The figure below illustrates the condition of the various Recreation assets by key sub-component areas based on the user view. While the assets are generally in Good to Very Good condition, Equipment & Furniture have assets in Poor and Very Poor condition based on age. Approximately 38% of Fleet are also in Poor or Very Poor condition. Assets that are reported in Very Poor condition are based on the age of the asset and not necessarily reflect the actual asset condition. The City is implementing Asset Information Management Strategy (AIMS) project which will advance its asset management practices and improve confidence and reliability in data including condition.

Condition chart:

	Very Poor	Poor	Fair	Good	Very Good
Fleet	1%	37%	28%	13%	20%
IT					100%
Equipment	23%	21%	28%	12%	17%
Furniture	53%	27%		20%	

Legend: ■ Very Poor ■ Poor ■ Fair ■ Good ■ Very Good
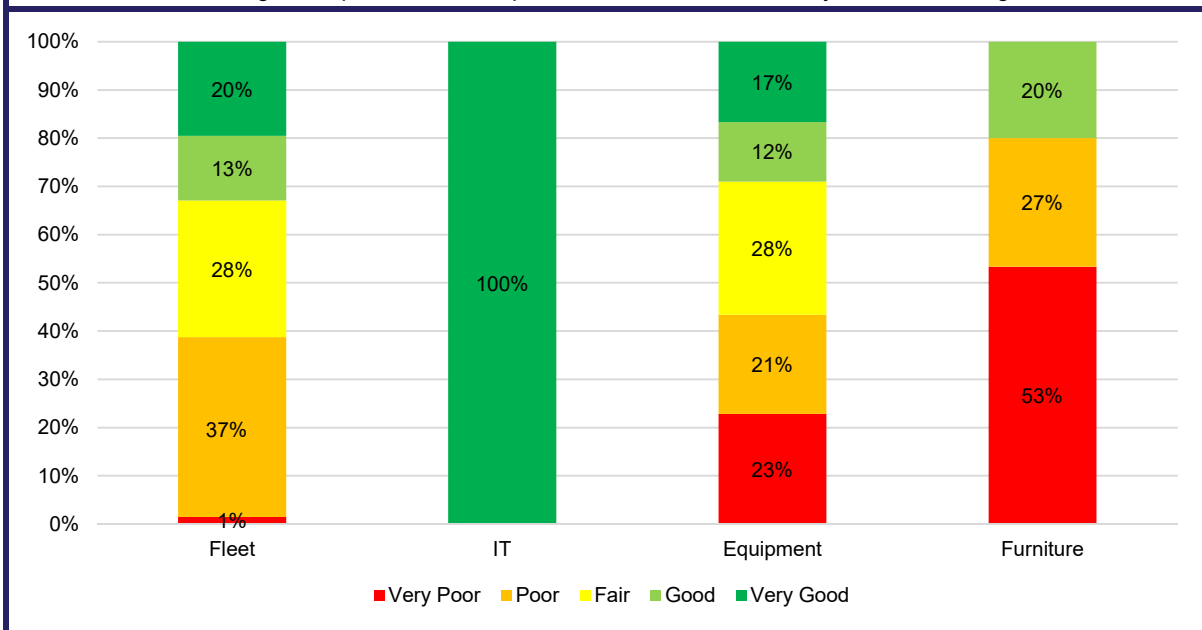
APPENDIX G.2 - SOLI REPORT CARD

Recreation

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Recreation assets in the 2022 SOLI relative to the 2021 SOLI, while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the total value of Recreation assets has increased by 29% from approximately $46.0 million to $59.3 million. As recent costing data was not available, the asset replacement values were inflated by either the Machinery & Equipment Price Index (M&E) or the Non-Residential Building Construction Price Index (NRCPI) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report. In addition to the inflation there are other factors that affected CRV, including data improvement. For example, in the Equipment category, this report included Artificial Rink valuated at $6M which was not included in previous SOLI reports. Data improvements were also made in regards to software values which were previously understated, which is why a large increase is seen.

When considering the Recreation Facilities, City Support Fleet and IT assets, the total asset value for Recreation has increased proportionately with the inclusion of these assets. In total, the value of Recreation assets increased by 20% (or $133.4 million) from the value reported in 2021 after inflationary adjustments.

Please note, the Facilities, City Support Fleet and IT report cards will include additional information (including the inflation measure applied) on those assets used by Recreation but maintained and managed by these different City departments.

Asset	2021 SOLI*		2022 SOLI	
Facilities	68	Each	69	Each
Fleet	129	Each	123	Each
Software	3	Each	3	Each
Equipment	3,012	Each	3,087	Each
Furniture	303	Pooled	303	Pooled

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 626,924,411	$ 743,492,116	$ 116,567,706	19%
Fleet	$ 3,752,966	$ 4,180,260	$ 427,294	11%
Software	$ 309,519	$ 3,362,499	$ 3,052,980	986%
Subtotal Assets Managed by Other Service Areas	**$ 630,986,896**	**$ 751,034,875**	**$ 120,047,979**	**22%**
2. Assets Managed by Recreation				
Equipment	$ 34,190,648	$ 46,214,452	$ 12,023,804	35%
Furniture	$ 11,759,592	$ 13,102,578	$ 1,342,986	11%
Subtotal Assets Managed by Recreation - Responsibility View	**$ 45,950,240**	**$ 59,317,029**	**$ 13,366,790**	**29%**
Total Replacement Value - User View (1+2)	**$ 676,937,135**	**$ 810,351,904**	**$ 133,414,769**	**20%**

*Responsibility of managing the assets lies with another service area, but assets are used by Recreation

G.3 (Recreation Services) – Levels of Service

Registered Program Participant Hours

The current number of registered program participant hours per year is 1,755,134, with a target growth of 3-5% annually over the next 10years to 2,358,753. By continuing to provide the in-demand programming for residents, staff expect to achieve this target by maintaining current funding levels while adjusting for growth annually.

Percentage of Recreation Assets at or Above "Fair" condition

The percentage of recreation assets at or above fair condition is currently at 48%, with the goal of increasing this to a minimum of 80% over the next 10 years. The current funding level requires that recreation facilities run their equipment to failure, despite being in poor condition. To achieve this target the service area requires an increased budget for replacement of equipment, which has been estimated at $2.94 million per year.

Membership Scans

The current number of membership scans per year is 1,156,724, with a target growth of 3-5% annually over the next 10 years to 1,554,540. By continuing to enhance our membership access, growing out membership base through promotions and partnerships, staff expect to achieve this target by maintaining current funding levels while adjusting for growth annually.

Recreation Complexes per 100,000 Residents

Brampton is currently home to 3.3 recreation complexes per 100,000 residents. The target performance is to keep this metric at or above 3.3 complexes per 100,000 residents, which is expected as additional recreation centres are opened. The capital costs associated with meeting the target are provided through the demand management analysis of this report.

Square Meters of Public Indoor Recreation Space Per Capita

Brampton currently provides 0.33 square meters of recreation space per capita, and the target determined by staff has been to maintain this current performance in the long-term. This will require a maintenance of current costs in order to expand the total square footage of recreation facilities as the City grows, with adjustments for growth annually.

Total Rental Hours available to external groups for program and events

The total annual facility rental hours utilized is 465,516, with a target of 3-5% annually over the next 10years to 625,615. Staff expect to achieve this target by maintaining current funding levels while adjusting for growth annually.

G.3 (Recreation Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance (1)	Desired Target Performance (2)
Capacity and Use	Recreation services meet customer needs and expectations	Growth	Registered Program Participant Hours	Overall Recreation Services	1,755,134	2,358,753
Quality	Recreation furniture and equipment assets are kept in a state of good repair	Renewal/O&M	% of Recreation Assets at or Above "Fair" condition	Overall Recreation Services	*48%*	> 80%
Capacity and Use	Recreation services meet customer needs and expectations	Growth	Membership Scans	Overall Recreation Services	1,156,724	1,554,540
Capacity and Use	To provide safe, functional and accessible public Recreation Facilities for the community	Growth	Recreation Complexes Per 100,000 Residents	Recreation Facilities	3.3	3.3 or higher
Capacity and Use	To provide safe, functional and accessible public Recreation Facilities for the community	Growth	Square Meters of Public Indoor Recreation Space Per Capita	Recreation Facilities and Major Equipment	0.33	0.33 or higher
Capacity and Use	Recreation services meet customer needs and expectations	Growth	Total Rental Hours available to external groups for program and events	Recreation Facilities	465,516	625,615

(1) Current performance changed to align with Recreation Service Plan provided by the service area and not information obtained from the 2023 budget
(2) 10-year performance target based on 3% growth scenario as provided by service area

G.4 (Recreation Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth	Brampton is one of the fastest growing Cities in Canada. The City is expected to grow to 985,000 by year 2051. Brampton currently provides a variety of recreation and sports programming to support the needs of the City's population.	Brampton's population is projected to continue to grow and the proportion of users of recreation facilities to population is expected to remain steady.	As Brampton's population continues to grow, the number of recreation facilities will have to grow also, at the risk of service levels falling due to facilities becoming too busy. As population increases, so does the population of the neighbourhoods around Brampton, resulting in an increased requirement to balance the needs of the individual neighbourhoods with the needs of the entire City.	↑	By the year 2031, the Recreation Master Plan recommends the following additional facility requirements to keep up with population growth: • 1 new Indoor Aquatic Centre • 1 new Dedicated Seniors Space • 1 new Fitness Centre • 1 new Dedicated Youth Space • 2 new Gymnasiums The planned Embleton Community Centre is proposed to meet these recommendations. In addition, the City is currently implementing a revitalization strategy for aging community centres that includes: 1. Renovating Chris Gibson Recreation Centre and twinning the existing ice pad 2. Rebuilding Howden Recreation Centre to include a gymnasium and multi-purpose space 3. Renovating and expanding Balmoral Recreation Centre to include a gymnasium and multi-purpose space 4. Rebuilding a new Victoria Park Arena dry-pad facility The City is also undertaking a review of the 2017 Parks and Recreation Master Plan to ensure that the original recommendations remain true for the City's current landscape. The final plan is anticipated to be presented to Council December 2023 and will include recommendations for the next five and ten years.	Approved City budget to date: • Embleton - $124,200,000 • Chris Gibson - $55,142,000 (not in 2024 DC) • Howden - $6,000,000 • Balmoral - $24,880,000 (not in 2024 DC) • Victoria Park - $28,650,000 Major Facilities in 2024 DC Study include: • Howden - $11.9 million • Embleton - $79.8 million • CAA Cricket Centre - $35.0 million • East Brampton Community Centre - $40.0 million • Year-Round Sport Facility for • Outdoor Sports - $40.0 million • Indoor Alternative Sports Facility - $40.0 million • North West Brampton Community Centre - $196.0 million • Cricket Tournament Site - $108.0 million The above facilities are part of a total of $954.0 million in new recreation facilities.

G.4 (Recreation Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Urbanization	Brampton is considered one of the fastest growing cities in Canada and with new greenfield land opportunities continuing to diminish, development is intensifying in already established and built-up areas.	Brampton communities are expected to grow by increasing population density and urbanization, especially in the areas of Mount Pleasant, Huttonville North, Bram West, Sandringham-Wellington, Vales of Castlemore, and Countryside Villages.	Increased requirement to balance the needs of the individual neighbourhoods with the needs of the entire City, especially as the urbanization intensifies, and these communities pass the threshold for requiring their own recreation facilities to service the residents of the area.

As urbanization increases and land become less available, it is expected to get more expensive, meaning that future facilities will cost more per resident when facility growth is deferred to future years. | ↑ | Additions to the number of recreation facilities in Brampton should be carefully planned to allow the greatest number of residents the best access to facilities.

Alignment should be done with Transit Services to ensure adequate capacity of transit to get residents to planned facilities.

Adoption of the hub model and colocation of services should be explored to best service residents and maximize land available. Community hubs are already being explored at the following locations:
1. Shopper's World
2. Queen St.

Consideration should be made for other community hubs in urbanized areas - Costs and details TBD. In addition, the City has approved two Youth Hubs in partnership with the Region of Peel to be located at Susan Fennell Sportsplex and Century Gardens Recreation Centre, which will house a variety of service providers.

The City also operates a number of joint-use locations with both School Boards, with the following projects on the horizon:
1. Central Peel Secondary School Turf Field
2. St. Edmund Campion Secondary School Turf Field
3. Turner Fenton Secondary School Cricket Field
4. Central Peel Collaborative Learning Technology Centre
5. Sandalwood Secondary School Track | Approved City budget to date:
- Susan Fennell Youth Hub - $1,413,000
- Century Gardens Youth Hub - $19,500,000
- Turner Fenton Cricket - $1,450,000
- Sandalwood Track - $350,000
- Central Peel Turf - $1,700,000
- Collaborative Learning Technology Centre - $3,300,000 |

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Age Structure	At 36.5 years, Brampton has the youngest average resident age compared to Peel Region and the Province of Ontario. Current service level - 2 Seniors Space facilities total, or 1 Seniors Space facility per every 62,418 Older adults aged 55+	The fastest growing age groups in the next 10 years are expected to be ages 70+ and 55-69, meaning that the average Brampton resident is aging.	Increased demand for senior's spaces and programming (Cards, dance, drama, music, fitness and health, arts and crafts, special events, etc.) require investment into new facilities to provide the same capacity per resident. Flower City Seniors Centre is very busy and ability to add programming there is already limited due to being used intensively already.	↑	Over the next 10 years, at minimum 1 new seniors space should be provided to meet the demand created by the massive growth in the number of Brampton residents over the age of 55. The PRMP proposes this facility is built in Brampton's East end and contain a mix of indoor and outdoor space. The current space of the Flower City Seniors Centre is approximately 15,224 square feet. In 2022, the City opened Riverstone Community Centre in the east end of the City, and the programming of this facility skews heavily towards the older adult population. In addition, a citywide older adult programming strategy is on the horizon. The PRMP recommends the construction of 1 new Dedicated Youth Space by the year 2031 in order to keep pace with the growth in the younger age groups. In 2023, Recreation opened its first Youth Hub at Susan Fennell Sportsplex and the Century Gardens Youth Hub is anticipated to open in 2025. In addition Embleton Community Centre will house a youth room.	$15,224,000 * assumes the planned facility is the same size as FCSC and costs $1,000 per sq. foot Approved City budget to date: • Susan Fennell Youth Hub - $1,413,000 • Century Gardens Youth Hub - $19,500,000

G.4 (Recreation Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Technological Changes	The City employs various technologies across all areas to deliver services efficiently and effectively.	As technology continues to evolve, the City and its assets will continue to evolve with it, with further reliance on technology expected in the future.	Energy retrofit 2 year projects for facilities, reducing services by up to 60%. Long-term reduction in GHG is the goal. Program registration software. Small engine fleet within facilities.	↑	• Electric Olympia ice resurfaces piloted at a number of facilities could be rolled out to all location with ice in the future. • New program registration software creates opportunity to implement self-serve kiosks as well as requires additional IT support. • The City implemented a turf field dome in 2021 and has plans to construct two tennis bubbles at Gore Meadows and field hockey dome at Cassie Campbell by 2025. • With the operations of outdoor rinks facing increasing challenges the City is looking for way to lengthen the outdoor winter season, as well as opportunities to winterize additional outdoor amenities including tennis courts, basketball courts and uncovered outdoor rinks • Cost and details TBD.	Domed Sports Facility - $15.0 million

G.4 (Recreation Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Customer Preferences & Diversity	The City of Brampton has made a commitment to providing inclusive and accessible recreation facilities, with the goal of providing a place for the diverse customer base, including people of different social, cultural, and religious backgrounds.	It is expected that City residents will continue adapt their preferences as the customer base changes demographic and becomes more diverse.	Seeing a shift from a high-demand for organized sports towards unstructured and self-scheduled "Drop-in" forms of recreation. Lowering attendance for traditional "Canadian" events, showing demand for celebration of other cultural events and recreation activities that are better suited to the demographics in Brampton.	↑	• Continue to monitor customer preferences through community engagement (workshops, focus groups, interviews, surveys) in future iterations of the Parks and Recreation Master Plans, most immediately the recommendations that will come out of the five-year review scheduled for January 2024. • Leverage Community Development's nurtured relationships with external stakeholders/organizations that serve newcomer and diverse populations to incorporate resident feedback into programming facility planning decision. • Complaints and requests through Brampton's 311 call service and the Recreation inbox are logged to better understand and address common customer issues. • Multi-use recreation facility designs provide the greatest flexibility to provide adaptable recreation facilities to the changing customer wants and needs. In recent years efforts have been made to diversify programming, including implementing programs such as volt hockey, cricket, bhangra dance and sweat and fete. • Facility design has evolved to ensure all residents are provided equitable access to the City's programs and services. Examples include retrofitting the ice pad at Susan Fennell to support sledge hockey, constructing a fully accessible ball diamond (Field of Dreams) with Peel District School Board and Jays Care Foundation, and implementation of universal change rooms and washrooms in new facilities. • The City also offers a variety of integration and inclusion programs and supports for differently abled residents, including an adult day program ADAPT.	$49M for Multi-purpose cricket facility The above facility is part of a total of $758.6 million in new recreation facilities.

G.4 (Recreation Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Climate Change	Climate change events are already prevalent and experienced at different levels and magnitudes from each jurisdiction.	As an example, Brampton can be expected to experience warmer air temperatures, increased precipitation, and more extreme weather events in the future.	As climate change continues to progress, the City's outdoor amenities and services will need to be reviewed to ensure adequate access for residents during both the summer and winter months.	↑	• Recreation centres will also need to continue to operate as cooling centres as intense summer heat is experienced more frequently. The construction of splash pads will also support these initiatives, including those recently opened at Gage Park and Gore Meadows, and those planned at Balmoral and Embleton. • Retrofits to existing building to reduce carbon emissions and increase energy efficiency are planned at a number of locations including Susan Fennell and Earnscliffe, requiring various shutdown period and reductions in programming while being completed.	Approved City budget to date: • Gore Tennis $9Million in 2023 • Costs for the retrofit programs are also included in the Facility demand driver template. The city has identified Retrofitting of 5 additional Recreational facilities (Cassie Campbell Comm. Centre, Save Max Sports Centre, Earnscliffe Rec. Centre, Century Gardens Rec. Centre, Chinguacousy Wellness Centre) $105.5 M • Susan Fennel is already budgeted at $21M

G.5 (Recreation Services) – Risk Management

Risk Identification

		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	Medium	Medium	High	High	Extreme
	P4	Low	Medium	Medium	High	High
	P3	Low	Low	Medium	Medium	High
	P2	Insignificant	Low	Low	Medium	Medium
	P1	Insignificant	Insignificant	Low	Low	Medium

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	$0.0	$17.5	$0.0	$0.0	$0.0
	P4	$0.1	$29.0	$0.0	$0.0	$0.0
	P3	$0.5	$4.3	$0.0	$0.0	$0.0
	P2	$1.7	$3.8	$0.0	$0.0	$0.0
	P1	$1.5	$0.9	$0.0	$0.0	$0.0

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Recreation. In total, about $59.3 million in assets have been assessed. Of the $59.3 million, about $4.1 million (7%) have been assessed to be in the Insignificant risk category. About $8.7 million (15%) have been assessed as Low risk, and the majority of the assets, approximately $46.6 million (79%), are assessed to be in the Moderate risk category. No assets have been assessed as High or Extreme risk.

Recreation - Summary of Risk Assessment by Replacement Value ($ Millions)
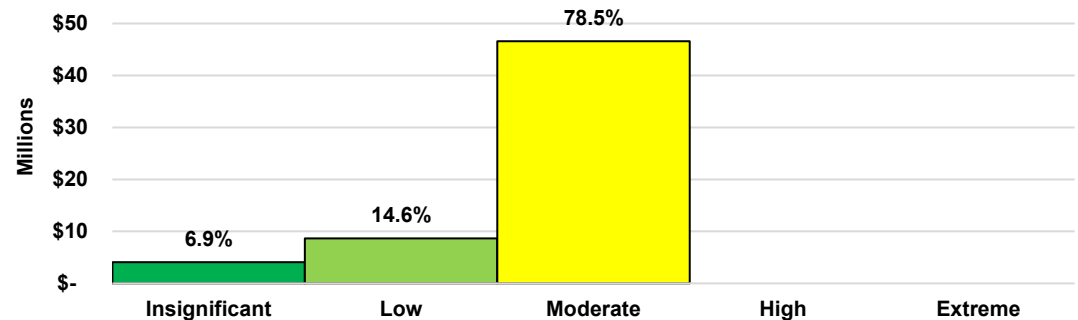
- Insignificant: 6.9%
- Low: 14.6%
- Moderate: 78.5%
- High
- Extreme

Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:

- The risk map indicates that there are no assets which fall into the High or Extreme risk category. That said, there is a high proportion of assets which are assessed as Moderate risk.
- The analysis indicates that some assets within the Moderate risk category possess a high likelihood of failure, despite the consequence of failure being fairly low. The high likelihood of failure for both outdoor amenities and equipment is due to assets being in Poor condition.
- Service area staff have indicated that there is a budget for replacement of equipment beyond their useful lives, but the assets are not replaced until after they have failed. If the nature of the service changes and the consequence of failure increases, these assets will begin to create "High" risk to the City. No further strategies are required to manage this risk at this time.

APPENDIX G.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Recreation Services — Asset Information Systems Maturity Tracker and Roadmap Update				

Recreation Services
Asset Information Systems Maturity Tracker and Roadmap Update

Asset Related Software Solutions or Tools:
Excel, Xplor, PeopleSoft, Questica

Information Categories (Data Type)	Roadmap Strategy Plans	Sub-category Status	Next Steps
HR Holistic Review (Overall Review of SA)	**1.1** Active Holistic Review of Business Requirements (High Level)	In Progress - Minimally Completed	CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.
DM Data Management (Governance and Collection)	**1.1** Formalize asset data governance including interdependent assets	In progress - Significantly Completed	Assign specific individual(Position/Role/Team) to be responsible for collecting, managing, and ensuring the quality of asset information. This includes collaborating with other relevant departments such as FOM and Parks for information on assets and projects completed to keep the assets in state of good repair, specifically when it comes to assets with heavy interdependencies.
	1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	In Progress - Minimally Completed	Collaborate with IT to establish a centralized system to track and store asset data such as asset condition, value, in-service date, lifecycle, and purchase details. Explore the use of existing system such as City works and GIS to establish record generation processes for non-horizontal assets.
SOI State of Infrastructure (Asset ID, Location, Classification, Physical Attribute, Condition)	**1.1** Improve on inventory data and attributes.	In progress - Significantly Completed	Extend asset tracking beyond recreation building condition and major mechanical components to cover all linked assets across recreation assets.
	1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions. Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.	In Progress - Minimally Completed	Evaluate current systems that can be implemented for Indoor equipment and furniture.

APPENDIX G.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Recreation Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, Xplor, PeopleSoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Establish clear and measurable levels of service for all asset categories. This involves defining performance metrics and targets considering factors such as asset condition, functionality, reliability, and customer satisfaction.
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In Progress - Minimally Completed	Implement a structured approach for collecting, analyzing, and reporting LOS data to the City's dashboard.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In Progress - Minimally Completed	Capture and record all operation and maintenance (O&M) data in a Computerized Maintenance Management System (CMMS) or Capital Asset Management System (CAMS). Integrate O&M data captured in the CMMS or CAMS with the monitoring of levels of service.
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Establish a comprehensive methodology to capture lifecycle activities for all assets
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In Progress - Minimally Completed	Work together with IT to use an existing system such as FAMIS that can be used to capture lifecycle information.
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In Progress - Minimally Completed	Develop proactive strategies to reduce reliance on emergency funds for asset maintenance and replacement. Conduct risk scenario analysis for all asset categories, categorizing risks as high, medium, or low. Incorporate risk assessments
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Identify business requirements and thereafter collaborate with IT to configure FAMIS so that cost data from various sources, including invoices, procurement records, and financial systems can be integrated.
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Assess the viability of Decision Support Systems (DSS) to enhance financial decision-making
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In Progress - Minimally Completed	Identify business requirements and thereafter track and manage lifecycle activities initiated through work orders and capture the associated costs.

G.7 (Recreation Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$19.6M Total O&M Cost per Annum
($M)

Fitness Equipment, $0.02, 0.1%

Furniture and Equipment, $0.02, 0.1%

Outdoor Amenities, $0.02, 0.1%

Facilities, $19.5, 99.7%
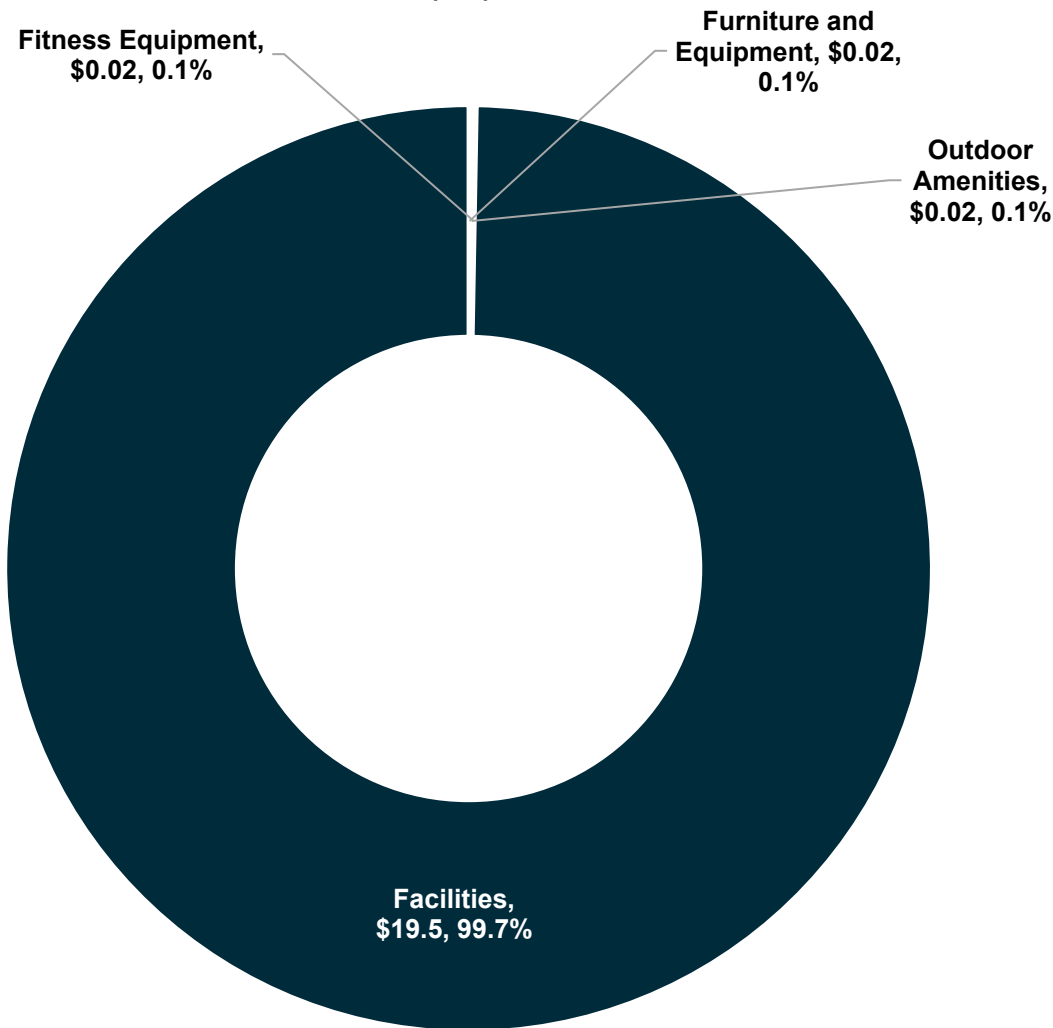
O&M Activities

- **Furniture & Equipment:** Inspections, sanitization, minor repairs, replacement of equipment components, equipment rental, scoreboard repairs

- **Outdoor Amenities:** Inspections, sanitization, minor repairs, replacement of equipment components

- **Fitness Equipment:** Inspections, sanitization, minor repairs, replacement of equipment components

- **Facilities:** Cleaning, minor repairs, replacement of signs, painting, court surface repair, components within ice rinks, spray pads, pools, etc.

- Importantly, the recreation services operating and maintenance costs can mostly be attributed to carrying out maintenance activities at the Facilities.

G.7 (Recreation Services) – Lifecycle Management
Capital Activities

Asset Category	Sub-Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Furniture and Equipment	General Equipment	$14,485,000	10	Replacement	$297,000
	Major Equipment	$6,214,000	11	Replacement	$484,000
	Furniture	$13,103,000	10	Replacement	$268,000
Outdoor Amenities	Spray Pads and Pools	$4,791,000	15	Replacement	$457,000
	Tennis Courts	$2,324,000	20	Renewal	$33,000
	Artificial Rinks and Tracks	$10,628,000	20	Replacement	$675,000
	Skateboard Parks	$3,813,000	15	Replacement	$366,000
Fitness Equipment	Fitness Equipment	$3,782,000	15	Replacement	$346,000
	Outdoor Fitness Equipment	$177,000	15	Replacement	$14,000
Facilities	Facilities	$743,492,000	N/A	Renewal	$135,000
Non-Infrastructure Solutions		-	-	-	$190,000
Total		**$802,809,000**			**$3,265,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$3.3 million**.

The largest component of the annual capital funding needs relates to Artificial Rinks and Tracks at $675,000 per year.

Many of the assets are set to be replaced based on age at the end of their service life.

For furniture and general equipment, the current budget allocation has deemed to be sufficient and those assets are used until they are no longer functioning or can meet the level of service and are subsequently replaced.

Non-infrastructure solutions (NIS) account for an additional $190,000 per annum in capital spending.

Additional capital costs associated with the Recreation Facilities is captured in Appendix A (Facilities).

G.7 (Recreation Services) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($M)

- Capital - Renewal, $0.2, 1%
- Capital - Replacement, $2.9, 12%
- Capital - Non-Infrastructure Solutions, $0.2, 1%
- O&M, $19.6, 86%

Annual Expenditure by Asset Category ($M)

- Furniture and Equipment, $1.2, 5%
- Outdoor Amenities, $1.6, 7%
- Fitness Equipment, $0.4, 2%
- Facilities, $19.7, 86%
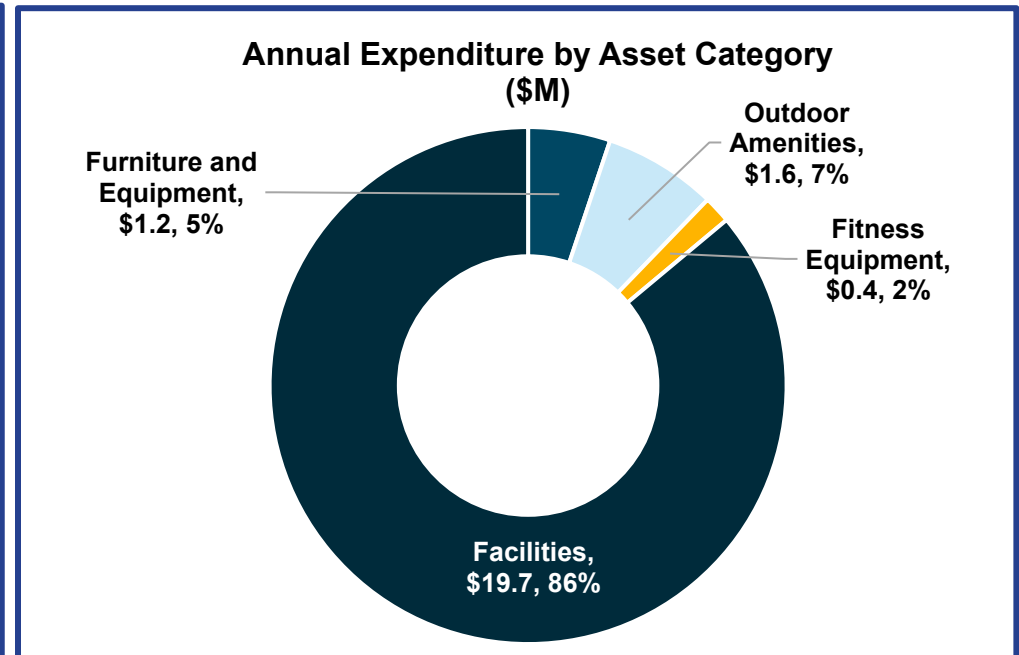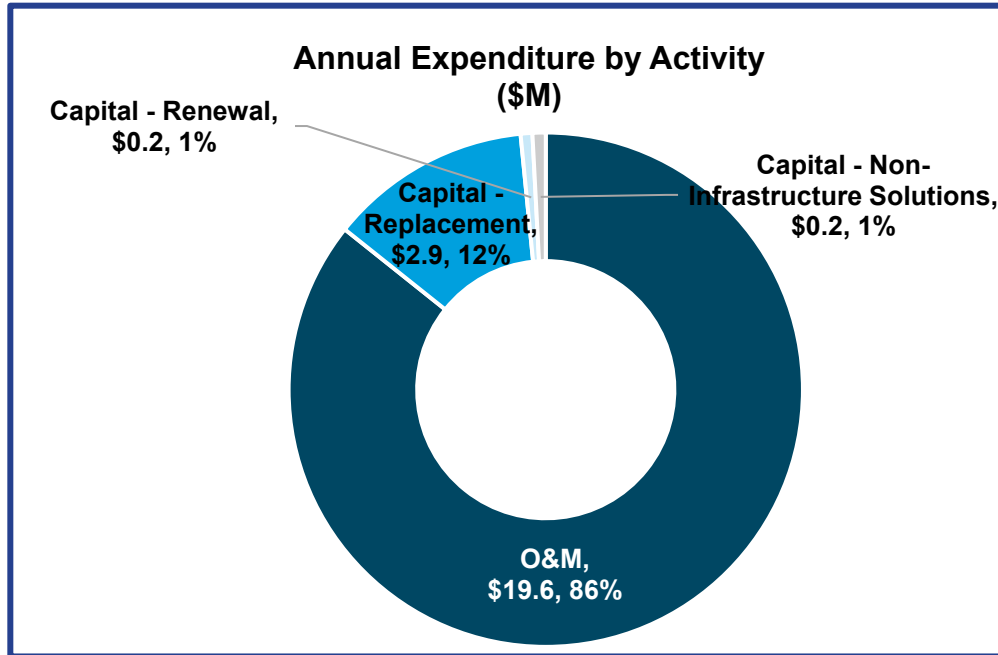
Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Furniture and Equipment	$33,802,000	$18,000	$1,157,000	$1,175,000
Outdoor Amenities	$21,556,000	$18,000	$1,601,000	$1,619,000
Fitness Equipment	$3,959,000	$18,000	$372,000	$390,000
Facilities	$743,492,000	$19,543,000	$135,000	$19,678,000
Total	**$802,809,000**	**$19,597,000**	**$3,265,000**	**$22,862,000**

G.7 (Recreation Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($000)

Furniture and Equipment, $514.0, 80%
Facilities (Recreation Responsibility), $80.0, 12%
Outdoor Amenities, $50.0, 8%
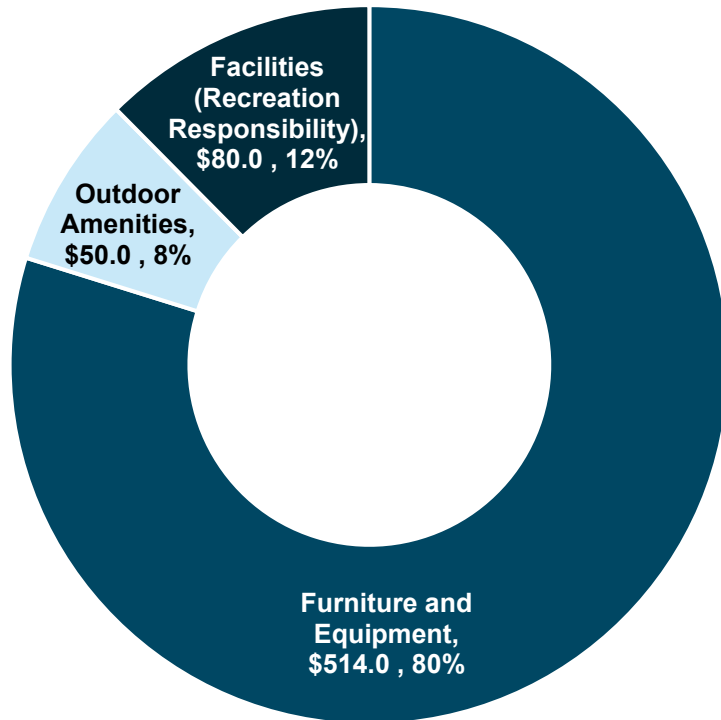
Proposed Levels of Service

- Of the total, Furniture & Equipment represents the largest share of the total annual expansion and upgrade costs amounting to about $514,000.
- The first round capital costs would primarily be funded from the City's DCs. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $16.7 million at Year 10 which includes maintenance at the new recreation facilities. However, the first round costs of the facility expansions are only captured once in this SA Plan and included in Appendix A (Facilities) as the activity is carried out by the City's Building Design and Construction Division.
- *Source: 2024 DC Study, 2023-2027 Capital Plan & Discussions with Staff*

$16.5M Annual OPEX Impact at Year 10

$0.2M Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Furniture and Equipment*	$514,000	$0	$16,000	$300
Outdoor Amenities	$50,000	$0	$3,000	$0
Fitness Equipment*	$0	$0	$0	$0
Facilities (Recreation Responsibility)	$80,000	$0	$2,000	$1,648,900
Total	**$644,000**	**$0**	**$21,000**	**$1,649,200**

* The Recreation center expansions and new builds may embed equipment into the gross cost as outlined in the DC Study and therefore captured under Facilities in this SA AMP

G.8 (Recreation Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Fill data gaps for purchase year and useful life where missing. Replacement costs for most assets is established as of 2020; more recent replacement costing on all assets would capture inflationary pressures more accurately.

- Conduct a thorough inventory of all assets owned and operated by Recreation.

- Extend asset tracking beyond recreation building condition and major mechanical components to cover all linked assets across recreation assets.

- As the City's current performance is measured year-over-year, achieve a better understanding of the relationship between actual spending on asset replacement, renewal, and O&M, relative to the target performance. This will require a more accurate documentation of the cost of undertaking lifecycle activities to meet the target service levels.

Process Optimization

- Develop proactive strategies to reduce reliance on emergency funds for asset maintenance and replacement.

- Collaborate with other relevant departments such as FOM and Parks for information on asset management practices to bring consistency to approaches across the organization.

Technology & Tools

- Establish a centralized system to track and store asset data such as asset condition, value, in-service date, lifecycle, and purchase details. Explore the use of existing system such as City works and GIS to establish record generation processes for non-horizontal assets.

Cultural Services

H.1 (Cultural Services) – Maturity Assessment

57 Pre-Project Score

64 Current Score

88 Target Score

Activities to Achieve Target Score in Future

- Continuously monitor and track asset usage, condition, and performance metrics to support proactive planning and decision-making. Implement a formal policy or procedure for tracking asset condition, potentially utilizing third-party software to introduce condition attributes.
- Service Area has understanding of the large assets such as Garden Sq. screen but a comprehensive long-term asset management plan is required. Develop a long-term asset management plan, including renewal strategies and prioritization of projects based on major LOS.
- Evaluate and potentially improve the utilization of software systems to better manage asset movement and work orders.
- Establish Service Level Agreements (SLAs) for assets operated by other service areas, particularly those affecting Cultural Level of Service (LOS), to mitigate risks and ensure accountability.

Radar chart with axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement. Legend: Pre-Project Score, Current Score, Target Score.

Bar chart:

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	59	75	91
Developing AM Lifecycle Strategies	53	55	84
Asset Management Enablers	58	62	90
Overall Score	57	64	88

APPENDIX H.2 - SOLI REPORT CARD

Cultural Services

Total Asset Replacement Value:	$16.5 Million
Total Asset Replacement Value Including Facilities, City Support Fleet and Software:	$119.4 Million
Future Condition Trend (Next 10 Years):	Declining - As assets age they may require attention in the future
Data Confidence & Reliability:	Age and Condition Based

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: "**Responsibility View**" and a "**User View**".

> *Responsibility View: Shows the assets under the service area that is responsible for managing them*
> *User View: Shows the assets under the service area that is using them*

While the User View shows the use of assets, the Responsibility View:

- ✓ provides a direct line of sight to those assets managed by the service area;
- ✓ will help prioritize lifecycle activities managed by the service area;
- ✓ aligns with industry best practices; and
- ✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Cultural Services		
Outdoor Equipment & Furniture	$4.8	Pooled
Specialty Equipment	$6.5	5,412
Furniture	$0.1	475
Public Art	$5.1	28
Subtotal Assets Managed by Cultural Services (Responsibility View)	*$16.5*	*-*
Assets Managed by Other Service Areas		
Cultural Services Facilities	*$102.3*	*1*
City Support Fleet Used by Cultural Services	*$0.6*	*6*
Software Used by Cultural Services	*-*	*1*
Total Replacement Value (User View)	**$119.4**	**-**

APPENDIX H.2 - SOLI REPORT CARD

Cultural Services

Major Types of Assets within Cultural Services - Responsibility View

The figure below illustrates the replacement value and condition of Cultural Services assets under the responsibility view. Under this responsibility view, the total replacement value of assets is $16.5 million. Of this total, approximately 39% is associated with specialty equipment with a further 29% related to outdoor equipment. About 65% of assets are considered to be in Good to Very Good condition, with the remaining assets in Fair condition. As the City's Cultural Services assets are overall in Good condition, these assets are meeting current needs.

RESPONSIBILITY VIEW: REPLACEMENT VALUE BY ASSET CATEGORY ($M)
- Outdoor Equipment & Furniture, $4.8 , 29%
- Public Art, $5.1 , 31%
- Specialty Equipment, $6.5 , 39%
- Furniture, $0.1 , 1%

RESPONSIBILITY VIEW: CULTURAL SERVICES ASSET CONDITION ($M)
- Very Poor, $- , 0%
- Poor, $0.0 , 0%
- Very Good, $3.0 , 18%
- Fair, $5.8 , 35%
- Good, $7.8 , 47%
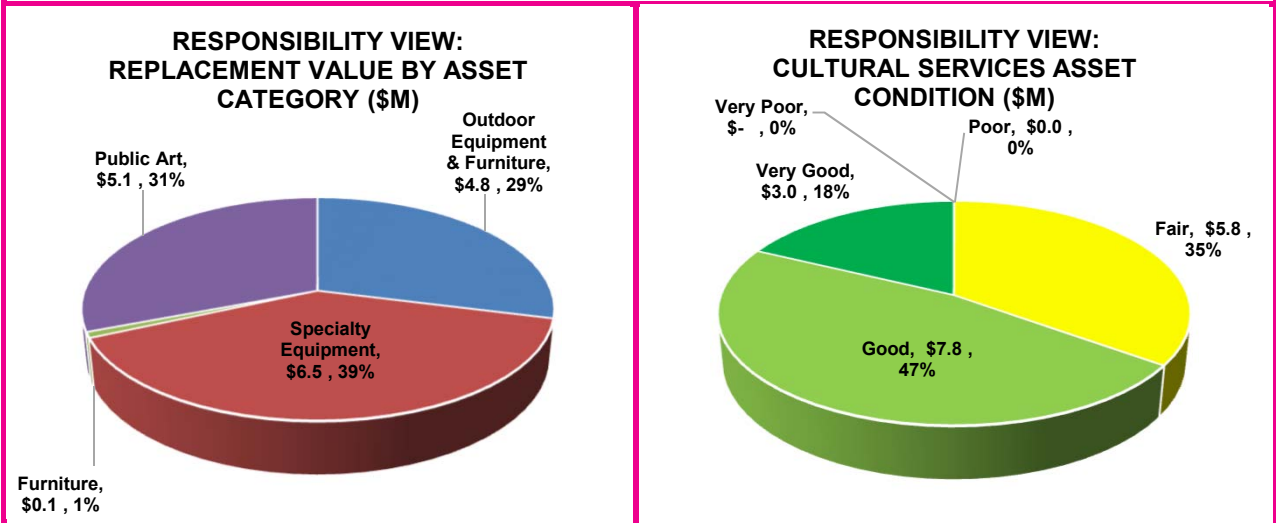
Data Source: Departmental Inventory

Major Types of Assets within Cultural Services - User View

The figures below illustrate the replacement value and condition of Cultural Services assets under the user view. Under the user view illustration, which also captures facilities, City support fleet and software, the replacement value is about $119.4 million. Of this total, the Cultural Services facilities represent the largest share at $102.3 million. Approximately 95% of the assets are considered to be in Good to Very Good Condition. No assets are in Very Poor condition.

USER VIEW: REPLACEMENT VALUE BY ASSET CATEGORY
- Outdoor Equipment & Furniture**, $4.8 , 4%
- Specialty Equipment, $6.5 , 5%
- Furniture, $0.1 , 0%
- Public Art, $5.1 , 4%
- City Support Fleet, $0.6 , 1%
- Facilities, $102.3 , 86%

USER VIEW: CULTURAL SERVICES ASSET CONDITION ($M)
- Poor, $0.1 , 0%
- Fair, $6.2 , 5%
- Very Poor, $- , 0%
- Good, $7.8 , 7%
- Very Good, $105.4 , 88%
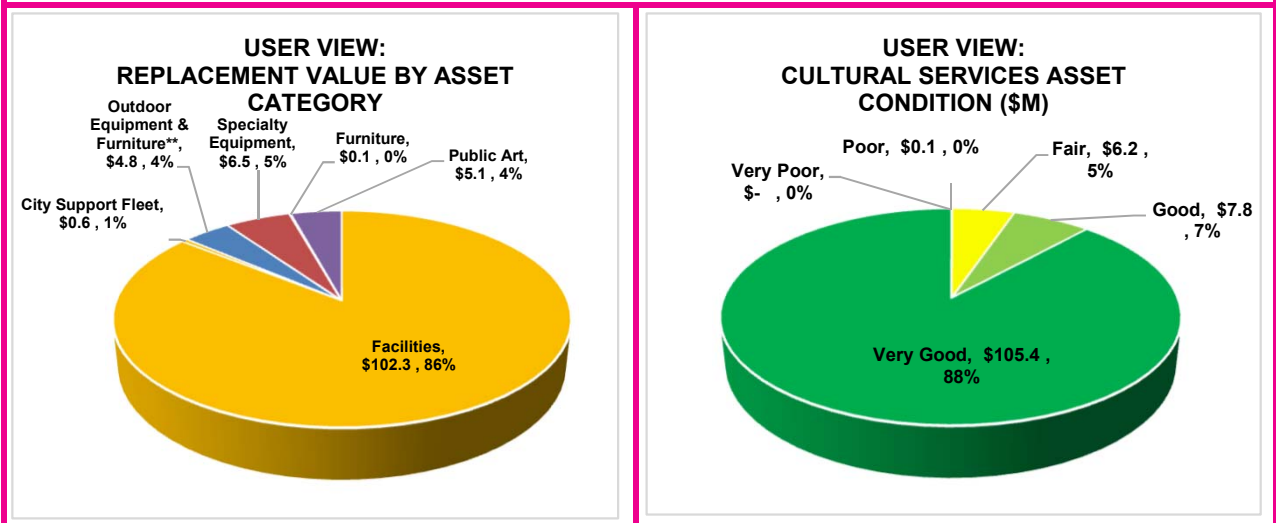
APPENDIX H.2 - SOLI REPORT CARD

Cultural Services

Age Summary

The following figure summarizes the average age of the City's Cultural Services assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated.

■ Average Age   □ Expected Useful Life

Category	Average Age	Expected Useful Life
OUTDOOR EQUIPMENT & FURNITURE	8	19
SPECIALTY EQUIPMENT	10	15
FURNITURE	6	11
PUBLIC ART	35	
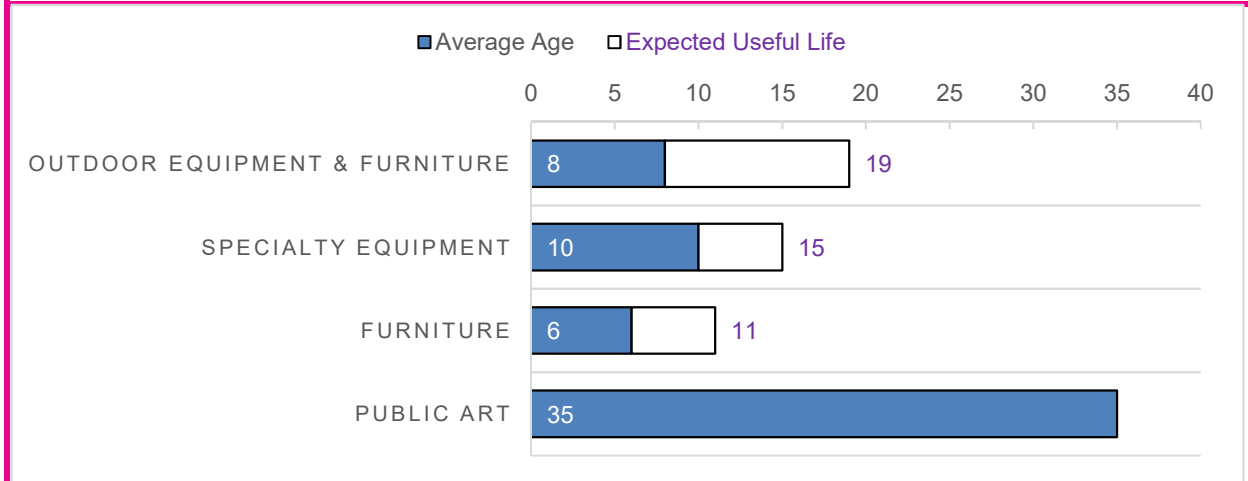
Condition Summary

The figure below illustrates the condition of the various Cultural Services assets by key sub-component areas based on the user view. Most asset categories are all generally considered to be in Good or Very Good Condition. About 13% of Fleet assets are considered to be in Poor condition, which relates to a Sprinter Van that is in the process of being replaced.

Condition	Outdoor Equipment & Furniture	Specialty Equipment	Furniture	Public Art	Facilities	Fleet
Very Good	14%	29%	19%	7%	100%	20%
Good	23%	32%	48%	90%		
Fair	63%	39%	33%	3%		67%
Poor						13%

■ Very Poor ■ Poor ■ Fair ■ Good ■ Very Good
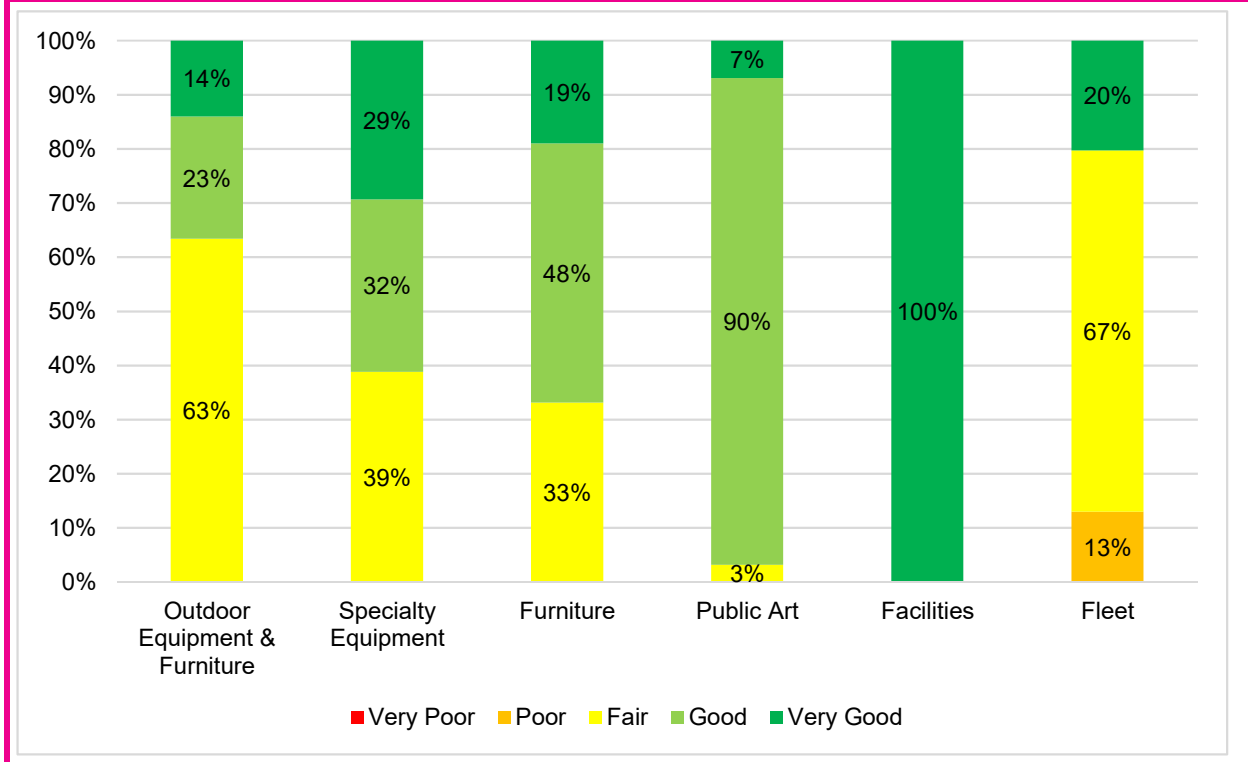
APPENDIX H.2 - SOLI REPORT CARD

Cultural Services

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Cultural Services assets in the 2022 SOLI relative to the 2021 SOLI, while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the total value of Cultural Services assets has increased by 23% from approximately $13.4 million to $16.5 million. The increase in value can largely be attributed to cost increases since the last report.. As recent costing data was not available, the Cultural Services asset replacement values were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report.

When considering the Cultural Services Facilities, City Support Fleet and IT assets, the total asset value for Cultural Services has increased proportionately with the inclusion of these assets. The total value of Cultural Services assets increased by about 14% from the value reported in 2021.

Please note, the Facilities, City Support Fleet and IT report cards will include additional information (including the inflation measure applied) on those assets used by Cultural Services but maintained and managed by a different City department.

Asset	2021 SOLI		2022 SOLI	
Outdoor Equipment & Furniture	Pooled		Pooled	
Specialty Equipment	5,283	Each	5,412	Each
Furniture	614	Each	475	Each
Public Art	28	Each	28	Each
Facilities	1	Each	1	Each
Fleet	7	Each	6	Each
Software	1	Each	1	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 90,902,704	$ 102,301,865	11,399,161	13%
City Support Fleet	$ 542,048	$ 603,951	61,904	11%
IT	$ -	$ -	-	N/A
Subtotal Assets Managed by Other Service Areas	**$ 91,444,752**	**$ 102,905,816**	**11,461,065**	**13%**
2. Assets Managed by Cultural Services				
Outdoor Equipment & Furniture	$ 2,801,422	$ 4,780,497	$ 1,979,075	71%
Specialty Equipment	$ 5,803,313	$ 6,500,525	$ 697,212	12%
Furniture	$ 219,203	$ 138,483	$ (80,720)	-37%
Public Art	$ 4,570,582	$ 5,092,558	$ 521,976	11%
Subtotal Assets Managed by Cultural Services (Responsibility View)	**$ 13,394,519**	**$ 16,512,062**	**$ 3,117,543**	**23%**
Total Replacement Value: User View (1+2)	**$ 104,839,271**	**$ 119,417,879**	**$ 14,578,607**	**14%**

*Responsibility of managing the assets lies with another service area, but assets are used by Cultural Services
**The 2021 SOLI overstated the value of Outdoor Equipment and has been adjusted to accurately reflect the asset portfolio

H.3 (Cultural Services) – Levels of Service

Average Attendance across all Performances and Events (All Venues)

Cultural Services currently oversees the presentation of over 320 performances and events per year, with an average attendance rate of 57%. They have an established attendance target of 65%. With a strong programming framework and facility allocation strategy, along with consistent investment in marketing, promotion, and engagement, staff expect this target to be achieved.

Overall Patron Satisfaction Rate for Ticketed Events

Customer surveys indicate a 96% patron satisfaction rate for ticketed events, surpassing the target performance of a minimum of 80% satisfaction rate. Annual capital budget requests prioritize customer experience, artist and audience satisfaction, AODA standards, and maintaining or replacing assets to ensure a high standard of production quality and level of service across all programs, presentations, and venues.

Average Usage Rate (Venues)

The average usage rate across all Performing Arts venues Brampton 35%, with a target of 55% by 2032. Performing arts centres typically aim for an optimal usage rate of 75% to maximize revenue while ensuring the facility remains in good condition through regular maintenance and upkeep. Currently, the annual usage rate for the Rose Theatre is 85%. Increasing usage at other venues, as well as investing in new cultural facilities, will help distribute the demand more evenly and relieve pressure on the Rose, ensure a more sustainable and balanced utilization of all available resources.

H.3 (Cultural Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Capacity and Use	Cultural Services meet customer needs and expectations	Growth	Average Attendance across all Performances and Events (All Venues)	Overall Cultural Services	57%	65%
			Overall Patron Satisfaction Rate for Ticketed Events		96%	> 80%
			Average Annual Usage Rate (All Venues)		35%	55%
			Average Annual Usage Rate (Rose Theatre)		85%	75%

H.4 (Cultural Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth	Brampton's population is quickly increasing, resulting in an increasing user-base for all cultural services.	Brampton's population is expected to increase demand on all aspects events and programming.	Increased demand for attendance at events and performances. - Currently turning down events because of lack of space and infrastructure to support. Heightened need for staffing to complement increase in programming. Require more purpose-built festival space for large-scale community gatherings.	↑	Adapt city-owned spaces to be reused as multi-purpose cultural spaces, including the addition of a new Arts and Culture Centre at the Flower City Campus. Conduct an annual review of current staffing levels and identify areas of additional need, considering reallocation of employees. Cultural Map and Vision 2040 neighbourhood audits will help identify the areas of Brampton where cultural space is lacking. Form a working group with Tourism, Corporate Events and Parks Planning to identify, plan and budget for dedicated event grounds.	$2.6M for planning and feasibility studies $25M for construction Cost for garden square rehabilitation and improvements - TBD

H.4 (Cultural Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Urbanization	Brampton is considered one of the fastest growing Cities in Canada and with new greenfield land opportunities continuing to diminish, development is intensifying in already established and built-up areas.	Cultural services expects urbanization to increase in areas of central Brampton and the pockets of communities outside of the downtown core.	Community concerns from high-attendance events in their neighbourhoods resulting in noise, lack of parking, clean-up required, worries that natural surroundings may not be able to handle the foot-traffic. Majority of cultural infrastructure is in the urbanized downtown, resulting in limited opportunities for cultural engagement at the neighbourhood level. Established communities becoming increasingly dense now reaching the point of requiring cultural community hubs.	↑	Move noisy events away from urbanized areas by developing purpose-built festival ground capable of hosting high foot-traffic events. Ensure provisions are made for Public Art and Cultural Space Vertical Gardens	Public Art = $3M (10-year) Vertical Gardens = $500k (ten-year)

H.4 (Cultural Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Age Structure	The City currently has a generally young population, with an average population of 36.5 years old.	It is expected that the population will continue to age over time, however, additional monitoring of this trend will be needed to determine the rate of change.	Challenges to bring affordable space for creativity; need for AODA compliance/universal design to support aging audience - Examples: Artists' studio space, Maker spaces, general administration space, etc.	↑	What spaces the younger group would like to see - informal events Demand for non-traditional theatre provides more flexibility adapt theatres to multi-use spaces • Linked space is going to be vital for space to be used the way it's required Community partnerships	Costs above
Customer Preferences & Diversity	The preferences for programming held by City residents, which is comprised of a fairly young and very diverse population, continues to change with popular-culture over time.	It is expected that City residents will continue to place additional demands for services over time and expect high quality services for their tax dollars.	Seeing a shift in customer preference towards live music, ethnic-based festivals, industrial/light industrial spaces, alternative theatre, and studio spaces Increasing desire for soft seat theatres, assumed to be due to the aging customer base. Seeing demand shift towards preference for higher availability of services, at a lower price point. Customers prefer more flexibility for acquiring tickets and planning to attend events.	↑	Research what the customer preferences are (through public consultation) and adapt programming to suit changes. Providing free or subsidized admission to a large variety of events in the downtown core. Provide affordable creative spaces by reusing other City-owned facilities and providing multi-use spaces. Allow shorter timelines for booking attendance to cultural events.	Costs above

H.5 (Cultural Services) – Risk Management

Risk Identification

Consequence					
	C1	C2	C3	C4	C5
P5	Medium	Medium	High	High	Extreme
P4	Low	Medium	Medium	High	High
P3	Low	Low	Medium	Medium	High
P2	Insignificant	Low	Low	Medium	Medium
P1	Insignificant	Insignificant	Low	Low	Medium

(Likelihood on vertical axis)

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions

Consequence					
	C1	C2	C3	C4	C5
P5	$0.0	$0.0	$0.0	$0.0	$0.0
P4	$0.0	$0.0	$0.0	$0.0	$0.0
P3	$0.0	$0.2	$5.8	$0.0	$0.0
P2	$0.0	$4.7	$5.5	$0.0	$0.0
P1	$0.0	$0.4	$0.0	$0.0	$0.0

(Likelihood on vertical axis)

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Cultural Services. In total, about $16.5 million in assets have been assessed. Of the $16.5 million, about $354,700 (2%) have been assessed to be in the Insignificant risk category. The majority of the assets, about $10.4 million (63%) have been assessed as Low risk. Approximately $5.8 million (35%), are assessed to be in the Moderate risk category. No assets have been assessed as High or Extreme risk.

Cultural Services - Summary of Risk Assessment by Replacement Value ($ Millions)
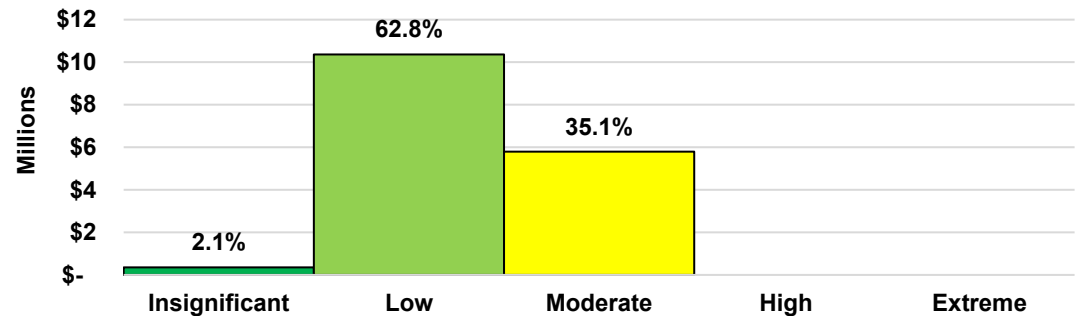
Bar chart (Millions on vertical axis): Insignificant 2.1%, Low 62.8%, Moderate 35.1%, High, Extreme.

Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:

- The risk map indicates that there are no assets which fall into the High or Extreme risk category. That said, there is a proportion of assets which are assessed as Moderate risk.

- The analysis indicates that some assets within the Moderate category possess a Moderate likelihood of failure, but the consequence of failure remains fairly low. The assets that compose these Moderate risk assets largely include outdoor equipment and specialty equipment that are halfway through their useful lives.

- At this stage, no further treatments are required to manage the risks.

APPENDIX H.6 - ASSET INFORMATION MANAGEMENT STRATEGY

<table>
<tr><td colspan="5">Cultural Services
Asset Information Systems Maturity Tracker and Roadmap Update</td></tr>
<tr><td colspan="5">Asset Related Software Solutions or Tools:
Excel, PeopleSoft, Questica</td></tr>
<tr><td>Information Categories (Data Type)</td><td>Roadmap Strategy Plans</td><td>Sub-category Status</td><td colspan="2">Next Steps</td></tr>
<tr><td>HR
Holistic Review
(Overall Review of SA)</td><td>1.1 Active Holistic Review of Business Requirements (High Level)</td><td>In Progress - Minimally Completed</td><td colspan="2">CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.</td></tr>
<tr><td rowspan="2">DM
Data Management
(Governance and Collection)</td><td>1.1 Formalize asset data governance including interdependent assets</td><td>In Progress - Minimally Completed</td><td colspan="2">Assign specific individual(Position/Role/Team) to be responsible for collecting, managing, and ensuring the quality of asset information. This includes collaborating with other relevant departments for information transfer on assets used by Cultural services but managed or provided by others.</td></tr>
<tr><td>1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.</td><td>In Progress - Minimally Completed</td><td colspan="2">Implement appropriate software solution(s) for logging all assets and tracking their status for capital and operational replacement.</td></tr>
<tr><td rowspan="2">SOI
State of Infrastructure
(Asset ID, Location, Classification, Physical Attribute,</td><td>1.1 Improve on inventory data and attributes.</td><td>In progress - Significantly Completed</td><td colspan="2">Assess and develop a universal barcoding solution for all Service Areas, to standardize asset identification and streamline asset tracking and management processes.</td></tr>
<tr><td>1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions.
Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.</td><td>In Progress - Minimally Completed</td><td colspan="2">Assess the functionality and capabilities of one of the existing inventory management solutions available for implementation within the services. Prioritizing a geographical solution as much as possible.</td></tr>
</table>

APPENDIX H.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Cultural Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, PeopleSoft, Questica			
Information Categories (Data Type)	Roadmap Strategy Plans	Sub-category Status	Next Steps
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Collect the pertinent information at agreed upon frequency for regular tracking
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	Not Started	Develop and define metrics/data attributes for better tracking of our LOS. Identify the KPIs and the source of the metrics to be pulled from CMMS.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In progress - Significantly Completed	Utilize and if required customize costing modules with CMMS to track direct and indirect costs associated with maintaining assets and delivering services.
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Develop methodology to capture lifecycle activity costs for smaller/lower value assets. Further improvements to assess Operating and Capital costs.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	In Progress - Minimally Completed	Utilize asset management modules within the CMMS to develop proactive lifecycle planning processes. Ensuring costing and work order categorizations are followed to link the costs to the right LC activity.
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In Progress - Minimally Completed	Implement risk assessment and calculations (based on likelihood and consequence ratings for asset failures), and integrate risk assessment results into asset management processes to decide the correct lifecycle intervention. Prioritizing the use of the existing inventory management solutions available.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Integrate asset replacement values within Asset Inventory System (or other CMMS/CAMS) systems, ensuring periodic update and frequency of such updates are instilled into the process.
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Collaborating with IT/CAMO team to assess the technical feasibility and integration requirements of implementing a DSS.
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In progress - Significantly Completed	Integrate cost tracking modules within existing information systems for all the lifecycle activities.

H.7 (Cultural Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$0.7M Total O&M Costs per Annum
($000)

Public Art, $437.7, 60%

Furniture & Equipment, $297.2, 40%
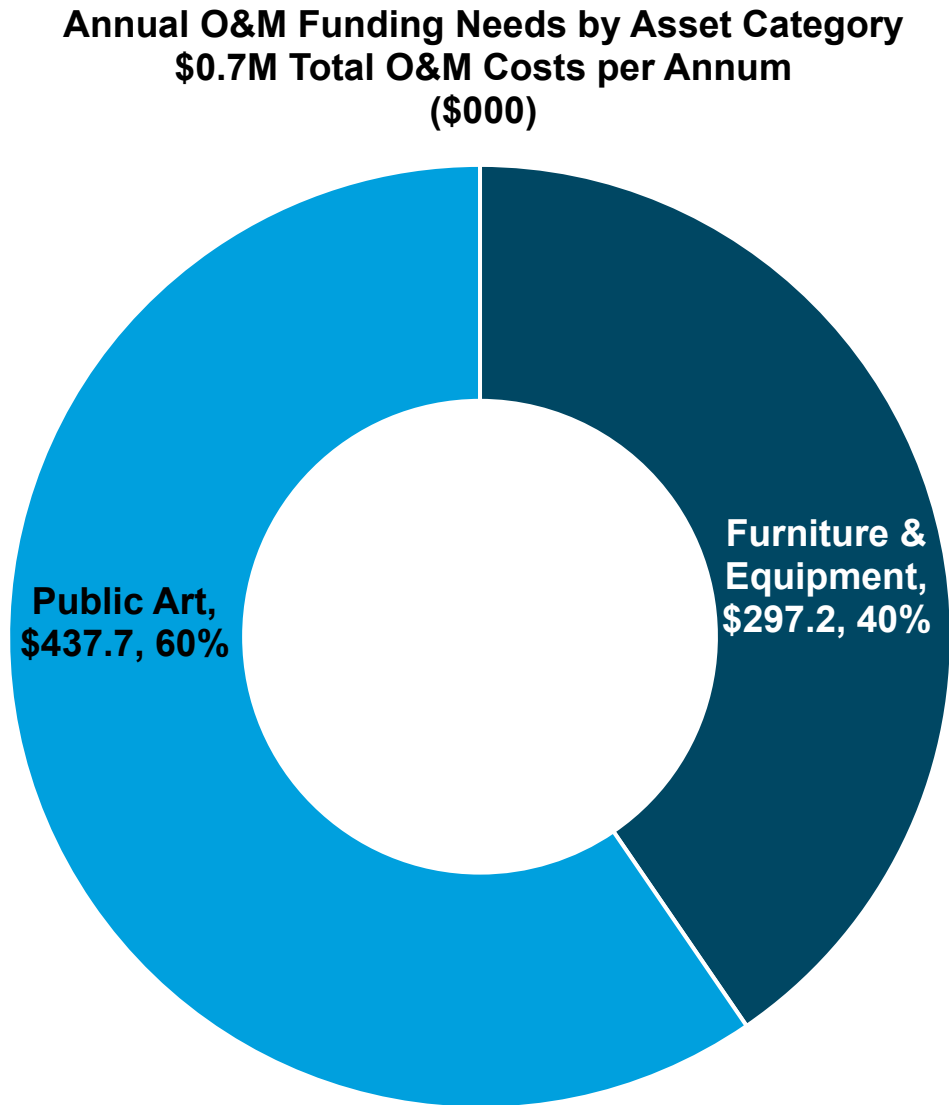
O&M Activities

- **Furniture & Equipment:** Equipment repair, routine inspections and frequent cleaning activities.

- **Public Art:** Inspection programs, preservation of art.

- **Preventative Maintenance** activities are also employed to keep assets in working order and avoid service interruptions.

H.7 (Cultural Services) – Lifecycle Management
Capital Activities

Asset Category	Sub-Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Furniture & Equipment	Outdoor Equipment & Furniture	$4,780,000	19	Replacement & Renewal	$222,000
	Specialty Equipment	$6,501,000	15	Replacement & Renewal	$302,000
	Furniture	$138,000	11	Replacement & Renewal	$6,000
Public Art	Public Art	$5,093,000	N/A	Renewal	$13,600
Total		**$16,512,000**			**$544,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$544,000**.

A portion of the costs can be attributed for TV replacement at the Garden Square.

For all assets, the current budget allocation has deemed to be sufficient and those assets are used until they are no longer functioning or can meet the level of service and are subsequently replaced.

The total $544,000 in annual capital needs includes both replacement ($330,000) and renewal ($214,000) costs.

Currently, no non-infrastructure solutions (NIS) have been identified.

H.7 (Cultural Services) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($000)

- O&M, $734.8, 57%
- Capital - Replacement, $330.0, 26%
- Capital - Renewal, $213.6, 17%

Annual Expenditure by Asset Category ($000)
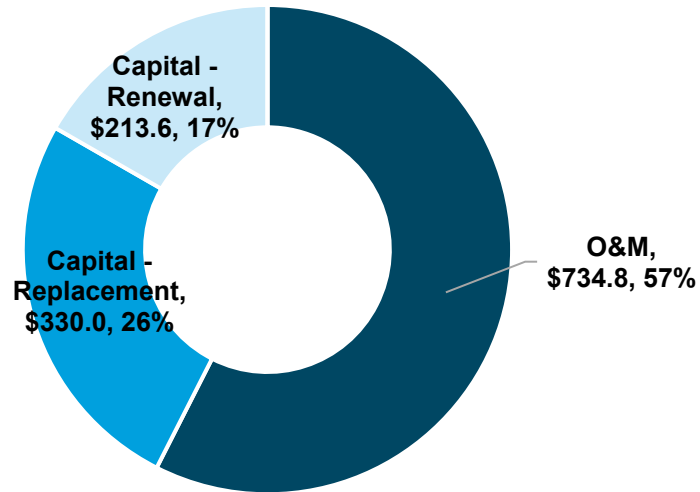
- Furniture & Equipment, $827.2, 65%
- Public Art, $451.3, 35%
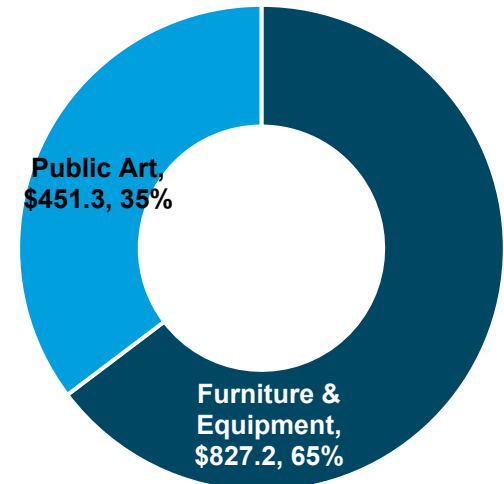
Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Furniture & Equipment	$11,419,000	$297,200	$530,000	$827,200
Public Art	$5,093,000	$437,700	$13,600	$451,300
Total	**$16,512,000**	**$734,900**	**$543,600**	**$1,278,500**

H.7 (Cultural Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Class ($000)

- Furniture & Equipment, $50,000 , 14%
- Public Art, $310,000 , 86%
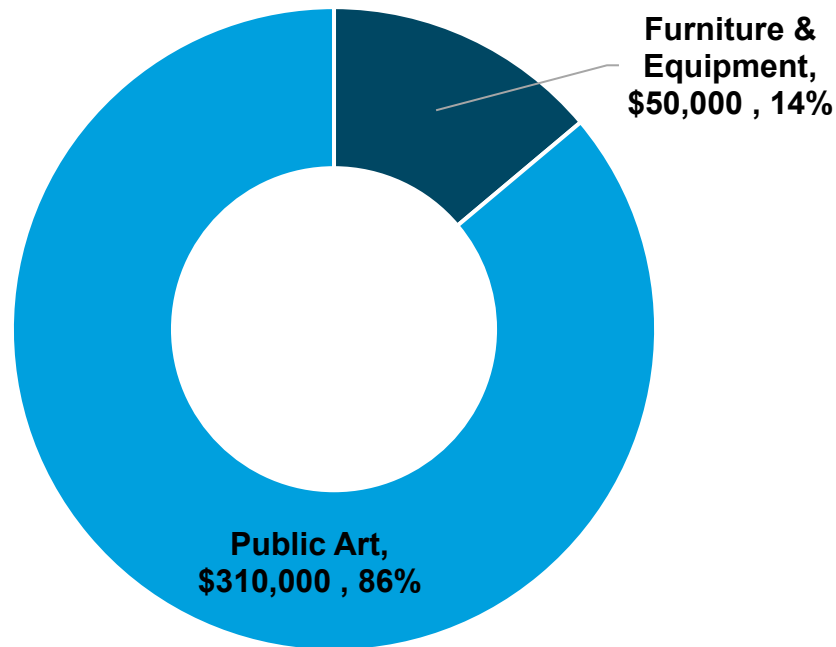
Proposed Levels of Service

- Of the total, Public Art represents the largest share of the total annual expansion and upgrade costs amounting to about $310,000 to meet the demands of a growing City.

- The first round capital costs would primarily be funded from the City's CBCs. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $257,500 at Year 10.

- *Source: 2023-2027 Capital Plan & Discussions with Staff*

$0.3M Annual OPEX Impact at Year 10

$0.0M Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Furniture & Equipment	$50,000	$0	$0	$1,200
Public Art	$310,000	$0	$0	$24,500
Total	**$360,000**	**$0**	**$0**	**$25,700**

H.8 (Cultural Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Fill data gaps for purchase year and useful life where not currently available.

- The replacement costs for most assets are established as of 2020; more recent replacement costing on all assets would capture inflationary pressures more accurately.

- Move towards stating current performance by venue, rather than the average usage rate of all venues, as some venues are targeting a higher usage rate, and some are targeting a lower usage rate.

Process Optimization

- Improve understanding of the general maintenance and major refurbishment costs of all public art assets by reconciling the actual maintenance costs at the asset level with the budgeted allocations.

Technology & Tools

- Implement appropriate software solution(s) for logging all assets and tracking their status for capital and operational replacement.

Appendix

Library Services

I.1 (Library Services) – Maturity Assessment

59 Pre-Project Score

65 Current Score

87 Target Score

Activities to Achieve Target Score in Future

- Conduct a comprehensive cyber risk assessment specifically tailored to library services, considering factors such as data privacy, network security, and potential threats to digital collections.
- Monitor the entire lifecycle of library assets, from acquisition to disposal, ensuring updated documentation of asset details such as condition and their disposal costs.
- Establish incident response protocols to swiftly address and mitigate cyber threats, ensuring minimal disruption to library services and safeguarding sensitive patron information.

Radar chart with axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement. Legend: Pre-Project Score, Current Score, Target Score.

Bar chart:

Category	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	56	72	89
Developing AM Lifecycle Strategies	56	57	82
Asset Management Enablers	63	67	89
Overall Score	59	65	87

APPENDIX I.2 - SOLI REPORT CARD

Library

Asset Replacement Value:	$24.7 Million
Total Asset Replacement Value including Facilities and City-Support Fleet:	$128.6 Million
Future Condition Trend (Next 10 Years):	Declining – As assets age they may require attention in the future
Data Confidence & Reliability:	Age and Condition Based

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: **"Responsibility View"** and **"User View"**

> *Responsibility View:* Shows the assets under the service area that is responsible for managing them
>
> *User View:* Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View:

- ✓ provides a direct line of sight to those assets managed by the service area;
- ✓ will help prioritize lifecycle activities managed by the service area;
- ✓ aligns with industry best practices; and
- ✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Library		
Furniture and Equipment	$8.5	7,159
Media Collections	$15.8	Pooled
Library Software	$0.4	17
Subtotal Assets Managed by Library (Responsibility View)	*$24.7*	-
Assets Managed by Other Service Areas		
Library Facilities	*$103.8*	6
City Support Fleet Used by Library	*$0.2*	4
Total Replacement Value (User View)	**$128.6**	**-**

The Library facility figure reported includes the four (4) standalone library branches as well as two (2) libraries located within Recreation Facilities (Gore Meadows Community Centre and Susan Fennel Sportsplex (formerly South Fletchers Sports Complex)). The library portion of those shared facilities are included in the above facilities total of $103.8 million.

APPENDIX I.2 - SOLI REPORT CARD

Library

Major Types of Assets within Brampton Library - Responsibility View

The figure below illustrates the replacement value and condition of Library service assets under the responsibility view. Under the responsibility view, the total replacement value of the Library assets is $24.7 million. Of the $24.7 million replacement value, about 64%, or $15.8 million, is attributed to Media Collections. Furthermore, about 35%, or $8.5 million is attributed to Furniture and Equipment, while the remaining $387,000 is related to Library Software. Approximately 14% of total assets managed by Library services are identified in Very Poor or Poor condition. This condition of a small subset of the total Library assets does not represent a safety issue or preclude Brampton Library from delivering services to meet the needs of residents

RESPONSIBILITY VIEW:
REPLACEMENT VALUE BY ASSET CATEGORY ($M)

- Media Collections, $15.8 , 64%
- Furniture & Equipment, $8.5 , 34%
- Library Software, $0.4 , 2%
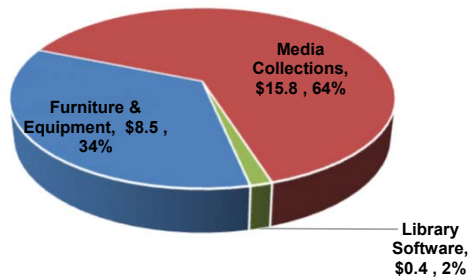
RESPONSIBILITY VIEW:
LIBRARY ASSET CONDITION ($M)

- Good, $1.5 , 6%
- Very Good, $3.4 , 14%
- Very Poor, $3.2 , 13%
- Poor, $0.3 , 1%
- Fair, $16.2 , 66%
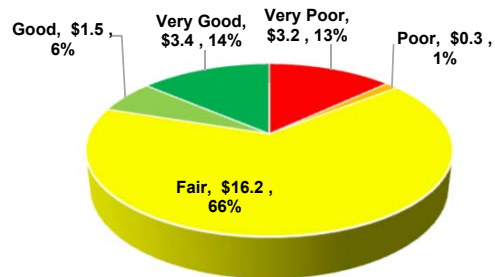
Data Source: PSAB data and consultation with Library staff

Major Types of Assets within Brampton Library - User View

The figures below illustrates the replacement value and condition of Library service assets under the user view. Under the user view, which captures facilities and City support fleet, the replacement value is about $128.6 million. Of this total $128.6 million, the Library facilities represent the largest component at $103.8 million. Approximately 70% of the Library's assets are considered to be in Good to Very Good condition, with the remaining assets close to, or past, the end of their service life.

USER VIEW:
REPLACEMENT VALUE BY ASSET CATEGORY($M)

- Fleet, $0.2 , <1%
- Furniture & Equipment, $8.5 , 7%
- Media Collections, $15.8 , 12%
- Library Software, $0.4 , 0%
- Facilities, $103.8 , 81%
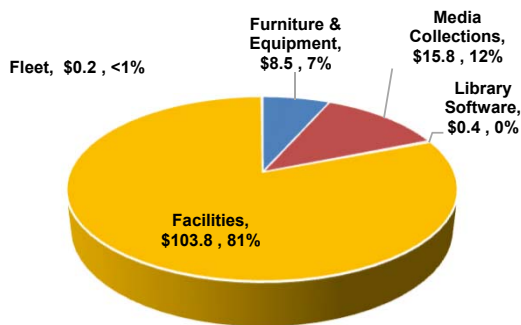
USER VIEW:
REPLACEMENT VALUE U ASSET CATEGORY($M)

- Very Poor, $3.24 , 2%
- Poor, $18.67 , 15%
- Fair, $16.27 , 13%
- Very Good, $78.73 , 61%
- Good, $11.72 , 9%
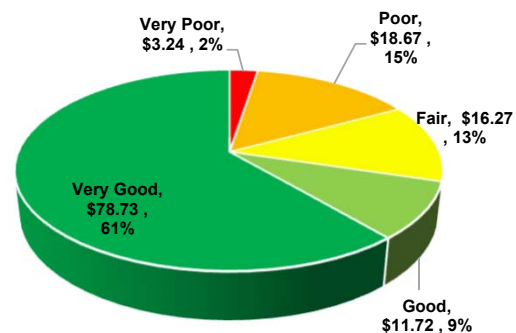
APPENDIX I.2 - SOLI REPORT CARD

Library

Age Summary

The following figure summarizes the average age of the City's Library Assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated. It is important to emphasize that the age of an asset relative to its useful life does not always provide a complete picture of its actual condition, and an asset can often perform at the expected level to meet service requirements, despite being beyond it's useful life, as is the case with Library assets (RFID, Security and Computer Equipment).
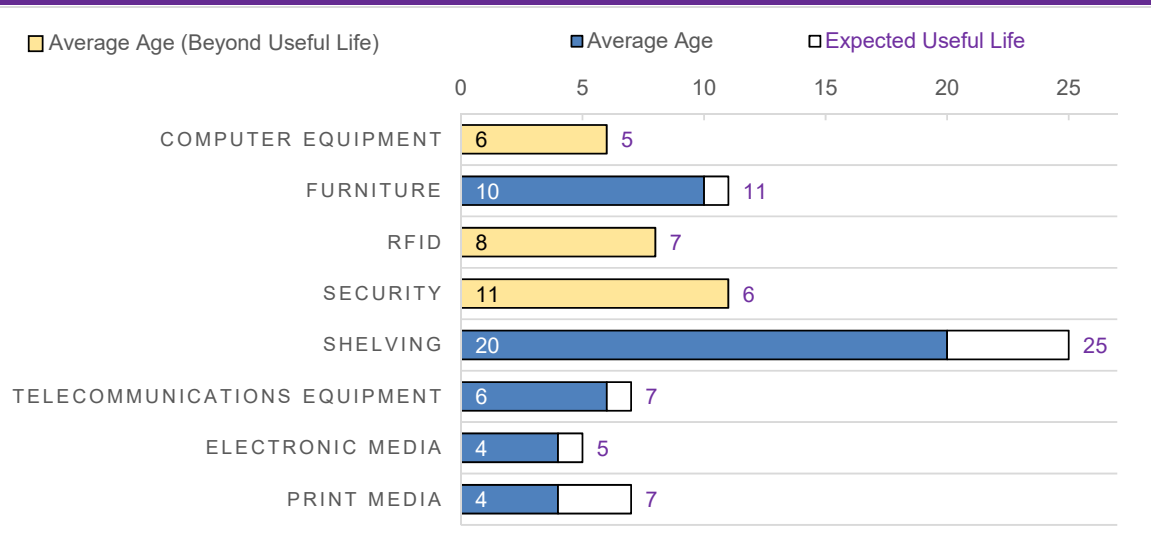
Condition Summary

The figure below illustrates the condition of the various Library service assets by key sub-component areas. While the assets are cumulatively in Fair or higher condition, Furniture and Equipment have a significant component of assets in Poor or Very Poor condition. Library Software assets and the majority of facilities are in Good or Very Good Condition, except for 18% of facilities, which are in Poor condition.
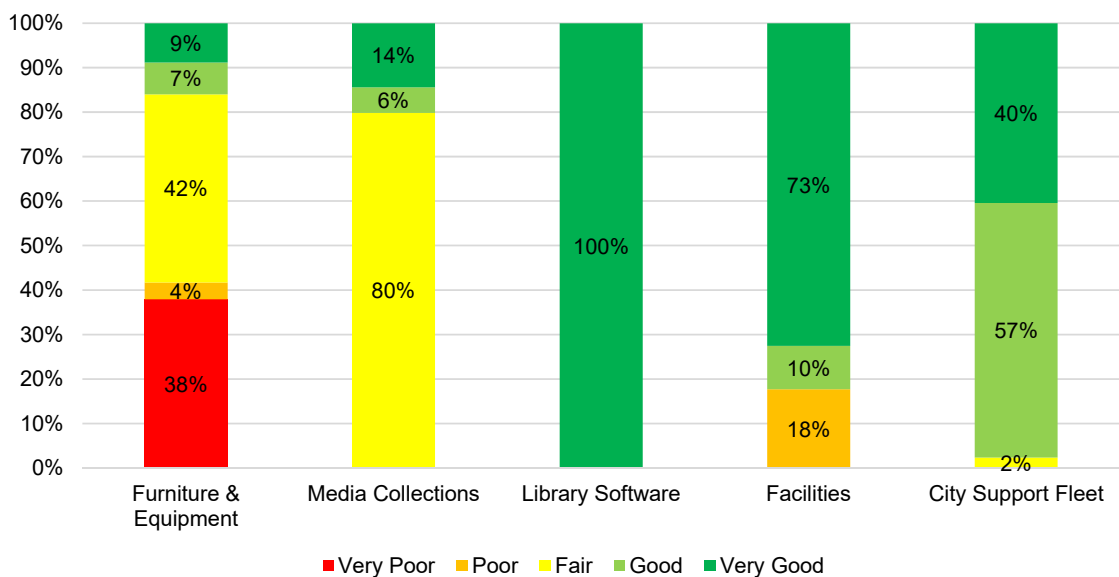
APPENDIX I.2 - SOLI REPORT CARD

Library

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Library assets in the 2022 SOLI relative to the 2021 SOLI while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Looking only at those assets included under the responsibility view framework, the total value of Library Services has increased by 20% from approximately $20.5 million to $24.7 million. The increase in value can largely be attributed to cost increases since the last report. Recent cost data was used for Library Software, while the remaining Library asset replacement values were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report.

Including the Library Facility and City Support Fleet assets, the total asset value for Library Services has increased proportionately with those assets. In total, the value of library assets has increased by 18% (or $19.2 million) from 2021. This increase can largely be attributed to the increased valuations of City Library facilities.

Please note, the Facilities and City Support Fleet report cards will include additional information on those assets used by Library but maintained and managed by a different city department.

Asset	2021 SOLI		2022 SOLI	
Furniture & Equipment	6,842	Each	7,159	Each
Media Collections	Pooled		Pooled	
Library Software	18	Each	17	Each
Facilities	6	Each	6	Each
Fleet	4	Each	4	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 88,728,313	$ 103,780,112	$ 15,051,799	17%
Fleet	$ 138,459	$ 154,271	$ 15,812	11%
Subtotal Assets Managed by Other Service Areas	**$ 88,866,771**	**$ 103,934,383**	**$ 15,067,612**	**17%**
2. Assets Managed by Library				
Furniture & Equipment	$ 7,794,516	$ 8,535,526	$ 741,010	10%
Media Collections	$ 12,406,648	$ 15,769,724	$ 3,363,076	27%
Library Software	$ 305,420	$ 387,249	$ 81,829	27%
Subtotal Assets Managed by Library (Resposibility View)	**$ 20,506,584**	**$ 24,692,499**	**$ 4,185,916**	**20%**
Total Replacement Value: User View (1+2)	**$ 109,373,355**	**$ 128,626,882**	**19,253,527**	**18%**

*Responsibility of managing the assets lies with another service area, but assets are used by Library Services

I.3 (Library Services) – Levels of Service

Average population living within 3 km of a Library (with 2021 census)

There are currently 97,900 residents living within a 3 km radius of a library. The desired target performance set by staff is 30,000 to 50,000 per branch within a 2 km radius. To ensure this target is met, new construction would need to be focused near developing areas. The estimated cost to achieve the target is $157 million to $228 million depending on whether each new branch is a district or neighbourhood facility.

Average wait time for requested physical materials

The average wait time for physical materials is 22.94 days. The target performance is to decrease this wait time to 15 days. This target can be achieved immediately by increasing the budget allotted for purchase of new physical materials and replacement programs by $1.5 million to increase the supply and availability.

Average wait time for requested digital materials

The average wait time for digital materials is 36 days. The target performance is to decrease this wait time to 21 days. This target can be achieved immediately by increasing the budget allotted for purchase of new digital materials by $1.2 million to increase the supply and availability.

Active library card users (more than 1 resident) - Unexpired Cards

The City currently has 107,779 active library card users, with a 2032 target of 180,000 users. This can be achieved with overall capacity increases and the use of a recently implemented customer relationship management tool which will help to understand customer preferences to tailor library services to different user groups. The cost of achieving this target is dependent on other capital costs such as branches, collections, computers, and furniture; making it difficult to estimate.

Total Brampton households with at least one active library card

30% of all Brampton households have at least one active library card user. The 2032 target for this measure is to increase this figure to 40%. The Library has gone "fines free" in an effort to increase membership. Other strategies include increased classroom visits, community marketing, increasing services and outreach programs, and most importantly, physical growth. Once again, the cost of achieving this target is dependent on other capital costs such as branches, collections, computers, and furniture; making it difficult to estimate.

Percentage of assets at or above "Fair" condition

Currently, 86% of Library assets are in "fair" condition or better. The target long-term performance of staff is to have this measure above 90%, ensuring that residents seldom have to use materials in poor or worse condition. To meet this target, current funding levels should be maintained while adjusting annually for growth.

I.3 (Library Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	**Customer Level of Service Measure**	**Technical LOS Category**	**Technical Level of Service Measure**	**Asset Class**	**Current Performance**	**Desired Target Performance**
Capacity and Use	Library services meets customer needs and expectations	Growth	**Average** population living within 3 km of a Library (with 2021 census)	Overall Library Services	97,900 (6/8 Branches Support 100,000 residents within a 3km radius.)	30,000-50,000 per branch within 2KM radius.
			Average wait time for requested **physical** materials		22.94	15 Days
			Average wait time for requested **digital** materials		36 Days	21 Days
Quality		Renewal/O&M	Active library card users *(more than 1 resident) - Unexpired Cards*		107,779	180,000
			Total Brampton households with at least one active library card		30%*	40%
	Library media kept in good state of repair		% of assets at or above "Fair" condition		*86%*	> 90%

Note: Current performance for this specific measure tracked at a point-in time (May 2023) and better reflective of existing performance as opposed to 2022 activity

I.4 (Library Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth	In 2021, Brampton's population was an estimated 698,000 and its total library space was 205,070 square feet. - 0.29 square feet per capita (down from 0.33 in 2016) *This measure has since come down to 0.25 square feet per capita with the loss of Chinguacousy*	Brampton is one of the fastest growing Cities in Canada and is projected to grow to 985,000 people by year 2051.	Brampton's current library space is 0.29 square feet per capita and has reduced from 0.33 in 2016. As the population grows, existing library space will reach their capacity and Brampton Library will not be able to respond to the growing needs of the community, resulting in longer wait times and poor customer satisfaction.	↑	Additional library space will be required to provide programs and services to meet the growing population within the community. Future library space will need to be strategically located to ensure the proportion of the population living within 3 km of a Library is maintained. • Southwest Brampton: Expected population of 70,000 by 2031, Require 2,030 square feet per year in this area to maintain service levels. • East Brampton: Library Facilities Master Plan recommends 10,000 additional square feet to supplement the Gore Meadows Branch	$4.5 Million/annum to maintain existing space service level per capita (0.29 sq. ft.) $9.4 Million/annum to achieve OPL per capita standards (0.6 sq. ft.) for new population growth Total building construction costs estimated at $93.4 million. Total materials acquisition costs estimated at $25.1 million.
Diversity	According to the 2016 Census, the City of Brampton's population comprised of 234 different ethnic origins reportedly speaking 89 different languages. The Library sees diversity in supporting Accessibility and inclusion of programs and services offered.	The City of Brampton strives to be a diverse community as a result, the library department expects that the user-group will become more diverse in the future.	Increased demand on Accessible facilities Library User Data suggests that diverse user-groups have different preferences • Low-income Individuals: services for schooling, maintaining skills for use in the labour force through technological learning, printing and photocopying, access to job boards • New residents: multicultural learning, social events and gatherings	↑	Increase budget to make all library facilities AODA Compliant • Accessibility Ramps, Specialized Keyboards, Document Readers • Materials need in different formats and languages Acquisition of library material, both physical and digital, to cater to the diverse demographics of the city	Average cost to address accessibility requirements for each library facility. City's current budget includes addressing the changing customer needs associated with diversity.

I.4 (Library Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Age Structure & Customer Preferences	The City currently has a generally young population. The library maintains materials to support residents of all ages. City residents expect preference-matched-services for their tax dollars.	It is expected that the population will continue to age over time and, as a result, overall preferences will change. Additional monitoring of this trend will be needed to determine the rate of change.	Library User Data suggests that different age demographics have different preferences which impact services; • Young Families: Active learning space, early literacy materials and programs • Teenagers and Young Adults: Quiet study space, places to create, more laptops and flexible workspaces • Older Adults: Popular materials, continuing educations, community events K to 12 & Post-Secondary education institutions are key drivers • E-Resources now far more in demand • Post-Secondary institutions now require after-hours study (change in peak-demand time)	↑	Change and adjust programming and services depending on community response. Provide K-12 tutoring support for schools and students as curriculums change. Extend hours and study facilities as post-secondary institutions grow.	Collection Development - New and replacement of existing physical assets with alternative e-material (Source 2023 budget: 2023 = $900k, 2024 = $1.42M, 2025 = $1.49M) Total building construction and material acquisition costs captured above.

I.4 (Library Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Technological Changes	The City values being a technological community, requiring library to keep up with changes. The City employs new technologies within their libraries to deliver services efficiently and effectively.	As technology continues to evolve, library services will continue to evolve with it. Further reliance on technology is expected in the future.	Increased demand for Digital Literacy Programs, Makerspaces, and Digital Innovation Hubs within the communityLinked to customer preferences. Increased demand on implementation of new technology. - Example: Wi-Fi use is driving higher demand for alternative facility spaces	↑	• Increase budget for Maker Spaces and Digital Innovation Hubs • Assets: 3D printers, vinyl cutters, music-making equipment, scanners, laser cutters, sewing machines, power tools, and electronic tools. • Facilities: Music and voice recording studios, photo and video studios, laptop lounges, seating bars, collaborative areas for coding Reallocate budget towards Digital Literacy and Bridging the Digital Divide Programs • Assets: Computers, laptops, tablets, scanners, printers, access to makerspace equipment • Programs: Free internet access, delivery of technical assistance and help navigating technology, classes to teach the digitally illiterate how to use technology to "bridge the digital divide" Ensure a proper budget allocation to support both Digital and Physical Programming • Assets: CDs, DVDs, other digital reading and reference materials • Facilities: Study/learning spaces, creative spaces, spaces that allow access to tech and equipmentShift staff focus towards IT-Related Improvements • Processes: Technology Procurement, Renewal, systems data analysis, related programming • Self-Serve Tech: Staff are no longer "chained" to their desks- they can roam and help where needed	Improving automation software and hardware upgrades - $100k/annum (Source 2023 budget: 2023 = $100k, 2024 = $200k, 2025 = $100k) Total building construction and material acquisition costs captured above.
Special Projects	Post-Secondary institution numbers are low relative to population size. Sheridan, Algoma, and TMU are planning to increase campuses in both size and numbers to draw more students.	Library expects that the number of post-secondary institutions to increase greatly over future years,	In the short-term, displacement of library facilities will occur in order to give space to the incoming post-secondary institutions space. This would result in a decline in available library space to support services (meeting space, programs, etc.) In the medium-to-long term, incoming students will place increased demand on study spaces and reference materials, etc. as the institutions are fully operational	↑	There is future uncertainty regarding space requirements, however, the City has started the process to research for a permanent new location for the branch/branches that be displaced by another entity occupying the space that is presently used by Brampton Library.	Already quantified above in other demand drivers as it relates to space, changes in customer preferences, and collection development.

I.5 (Library Services) – Risk Management

Risk Identification

	Consequence				
	C1	**C2**	**C3**	**C4**	**C5**
P5	Medium	Medium	High	High	Extreme
P4	Low	Medium	Medium	High	High
P3	Low	Low	Medium	Medium	High
P2	Insignificant	Low	Low	Medium	Medium
P1	Insignificant	Insignificant	Low	Low	Medium

(Likelihood shown as the vertical axis label for the P5–P1 rows)

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions

	Consequence				
	C1	**C2**	**C3**	**C4**	**C5**
P5	$0.0	$3.2	$0.0	$0.0	$0.0
P4	$0.0	$0.3	$0.0	$0.0	$0.0
P3	$0.0	$19.9	$0.0	$0.0	$0.0
P2	$0.0	$1.2	$0.0	$0.0	$0.0
P1	$0.0	$0.0	$0.0	$0.0	$0.0

(Likelihood shown as the vertical axis label for the P5–P1 rows)

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Library. In total, about $24.7 million in assets have been assessed. The majority, about $21.1 million (86%) have been assessed as Low risk. The remaining $3.6 million (about 14%), are assessed to be in the Moderate risk category. No assets have been assessed as High or Extreme risk.

Library - Summary of Risk Assessment by Replacement Value ($ Millions)
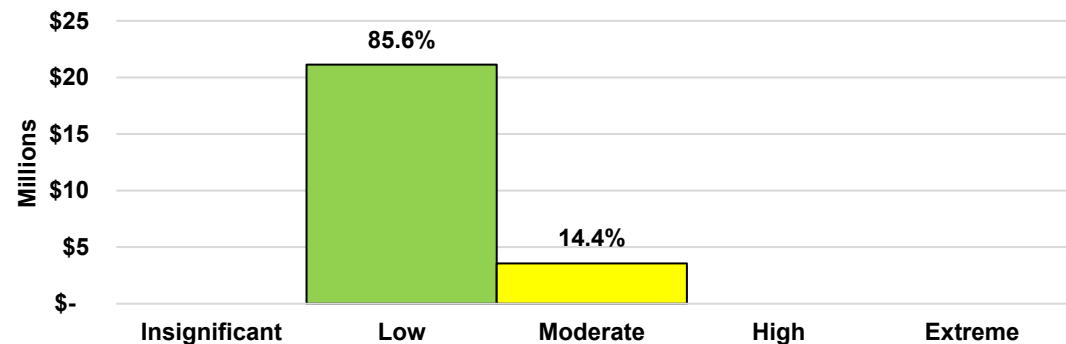
Bar chart (Millions, $- to $25):
- Insignificant: —
- Low: 85.6%
- Moderate: 14.4%
- High: —
- Extreme: —

Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:

- The risk map indicates that there are no assets which fall into the High or Extreme risk category. That said, there are a series of assets which are assessed as Moderate risk.

- The attributing factor of assets within the Moderate risk category is that they possess a high likelihood of failure, but the consequence of failure remains fairly low. About $3.2 million of assets are considered to have a very high probability of failure and are considered Moderate risk due to a low consequence of failure score. The majority of these assets are computer equipment, which are replaced at an interval that is longer than the useful lives of the assets, meaning many of these computer equipment are considered to have failed due to their age alone, despite continuing to operate.

- Increasing the budget for replacement of these assets would decrease their probability of failure, moving them to a lower risk category. No further treatments are required to manage the risks in the immediate term.

APPENDIX I.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Library Services
Library Services **Asset Information Systems Maturity Tracker and Roadmap Update**
Asset Related Software Solutions or Tools: **Excel, Polaris, Norming Assets, PeopleSoft, Questica**

Information Categories (Data Type)	Roadmap Strategy Plans	Sub-category Status	Next Steps
HR **Holistic Review** (Overall Review of SA)	**1.1** Active Holistic Review of Business Requirements (High Level)	In Progress - Minimally Completed	CAMO/IT and SA have reviewed business needs and have arrived at a general understanding of the requirements to improve and mature AMIS deployment and other AM tools and processes that are detailed within this tracker for each Information Category.
DM **Data** **Management** (Governance and Collection)	**1.1** Formalize asset data governance including interdependent assets	In progress - Significantly Completed	Clearly define roles and responsibilities for data ownership, collection, and quality control, ensuring accountability and consistency in managing asset information across Library Services.
	1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.	In Progress - Minimally Completed	Automate information intake processes to streamline data collection and integration from disparate systems such as Polaris and Norming Assets.
SOI **State of** **Infrastructure** (Asset ID, Location, Classification, Physical Attribute, Condition)	**1.1** Improve on inventory data and attributes.	In progress - Significantly Completed	Identify business requirements and implement a systematic approach to regularly update and maintain the asset register within the ERP system. This involves establishing protocols for capturing comprehensive asset data,
	1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions. Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.	In Progress - Minimally Completed	Identify business requirements and Explore the use of technology, such as mobile applications or digital forms, to streamline data collection during visual inspections

APPENDIX I.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Library Services Asset Information Systems Maturity Tracker and Roadmap Update			
Asset Related Software Solutions or Tools: Excel, Polaris, Norming Assets, PeopleSoft, Questica			
Information Categories (Data Type)	**Roadmap Strategy Plans**	**Sub-category Status**	**Next Steps**
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Implement software solutions or data collection methods to monitor usage patterns, user feedback, and performance metrics, enabling informed decisions on asset procurement and allocation. Identify key performance indicators (KPIs) related to customer satisfaction and technical performance
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In Progress - Minimally Completed	Regularly update the tracked LOS current performance for inclusion in dashboards and performance reports.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	In progress - Significantly Completed	Conduct comprehensive cost analysis for delivering various levels of service, linking LOS measures to lifecycle strategy
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In progress - Significantly Completed	Implement a work order management system to track maintenance, repairs, and replacements, ensuring that all activities are documented and logged for future reference and analysis.
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	Not Started	Conduct thorough assessments of asset condition, performance, and usage patterns to inform proactive maintenance, renewal, and replacement decisions
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	In Progress - Minimally Completed	Improve the assessment of asset risk and criticality by moving beyond professional judgment and implementing standardized methodologies
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In progress - Significantly Completed	Improve the accuracy and completeness of cost data for assets and enhance expenditure forecasts based on historical data and considerations of asset condition, risk, and level of service.
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Initiate a process to assess the viability of implementing Decision Support Systems (DSS) to improve financial planning and decision-making.
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In progress - Significantly Completed	Enhance the lifecycle cost model to capture all lifecycle activities using information systems. This includes refining cost estimation methodologies, incorporating lifecycle stages and activities

I.7 (Library Services) – Lifecycle Management
Operations & Maintenance Activities

Annual O&M Funding Needs by Asset Category
$3.3M Total O&M Cost per Annum
($M)

- Furniture & Equipment, $0.3, 10%
- Media Collections, $1.5, 46%
- Library Software, $1.4, 44%
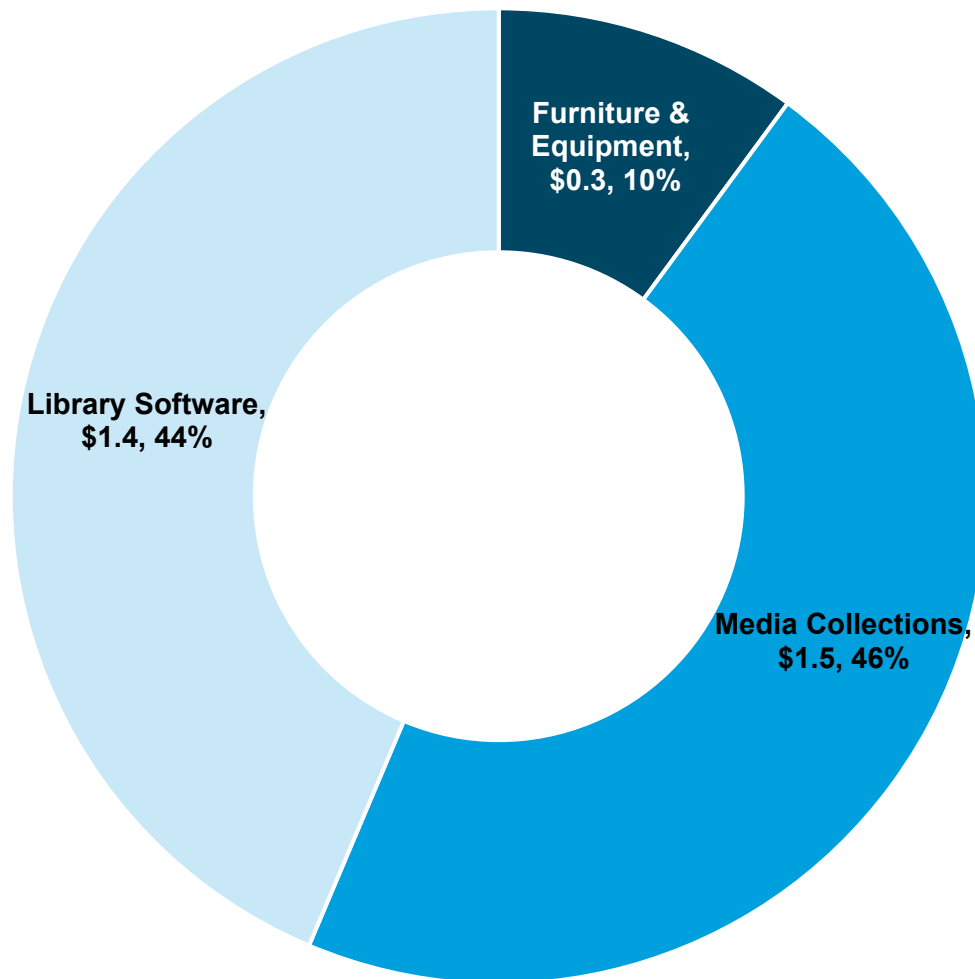
O&M Activities

- **Furniture & Equipment:** Photocopier rental, minor repairs, maintenance of self-checkout rentals, inspections, and recycling and disposal of assets.

- **Media Collections:** Purchase of e-resources, periodicals, online databases, repairing damaged media, children's tablets and salaries to support these activities.

- **Library Software:** Licensing, hardware disposal, maintaining and troubleshooting hardware and software, and salaries to support these activities.

I.7 (Library Services) – Lifecycle Management
Capital Activities

Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Furniture & Equipment	$8,536,000	10	Replacement	$517,000
Media Collections	$15,770,000	6	Replacement	$1,370,000
Library Software	$387,000	5	Replacement	$77,000
Total	**$24,693,000**			**$1,964,000**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$2.0 million**.

The largest component of the annual capital funding needs relates to Media Collections at $1.4 million per year.

Library software assets are set to be replaced based on age at the end of their service life.

For Media Collections and Furniture & Equipment, the current budget allocation has deemed to be sufficient and those assets are used until they are no longer functioning or can meet current levels of service and are subsequently replaced.

Currently, no non-infrastructure solutions (NIS) have been identified.

Additional capital costs associated with the Library Facilities is captured in Appendix A (Facilities).

I.7 (Library Services) – Lifecycle Management
Current Levels of Service Summary

Annual Expenditure by Activity ($M)

- O&M, $3.3, 62%
- Capital - Replacement, $2.0, 38%

Annual Expenditure by Asset Category ($M)

- Furniture & Equipment, $0.8, 16%
- Library Software, $1.5, 29%
- Media Collections, $2.9, 55%
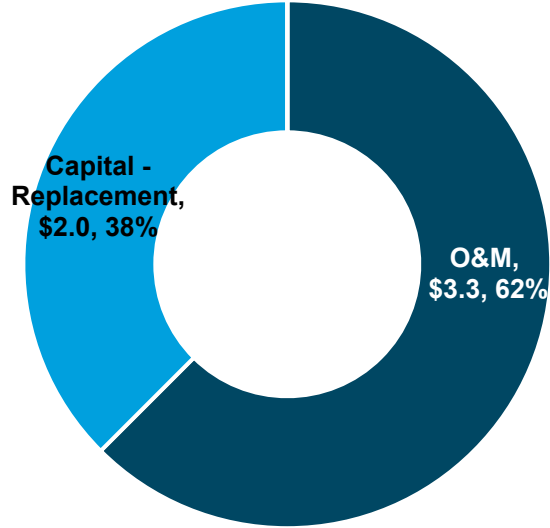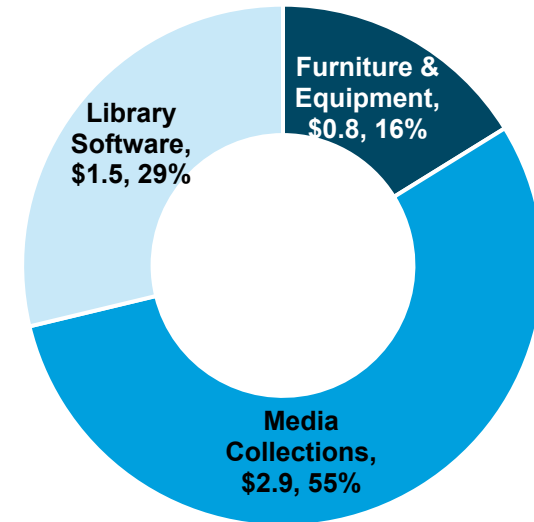
Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Furniture & Equipment	$8,536,000	$331,000	$517,000	$848,000
Media Collections	$15,770,000	$1,515,000	$1,370,000	$2,885,000
Library Software	$387,000	$1,429,000	$77,000	$1,506,000
Total	**$24,693,000**	**$3,275,000**	**$1,964,000**	**$5,239,000**

I.7 (Library Services) – Lifecycle Management
Proposed Levels of Service

Annual Expansion & Upgrade Needs By Asset Category ($000)

- Furniture & Equipment, $2,397.0 , 53%
- Media Collections, $1,300.0 , 29%
- Leasehold Improvements, $730.0 , 16%
- Library Software, $81.0 , 2%
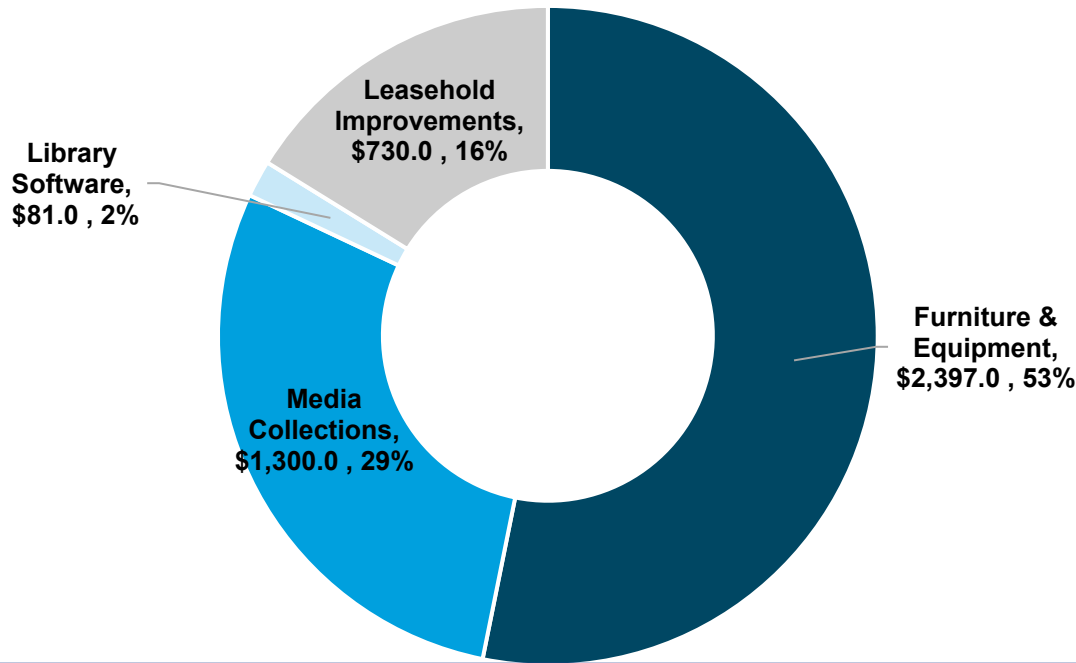
Proposed Levels of Service

- Of the total, Furniture & Equipment represents the largest share of the total annual expansion and upgrade costs amounting to about $2.4 million to meet the demands of a growing City.
- The first round capital costs would largely be funded from the City's DCs. In addition to the initial acquisition costs, the operating and capital asset management implications associated with these acquisitions are expected to reach about $7.5 million at Year 10.
- *Source: 2023-2027 Capital Plan & Discussions with Staff*

$5.0M Annual OPEX Impact at Year 10

$2.5M Annual CAPEX Impact at Year 10

Asset Category	Annual Expansion Needs	Annual Upgrade Needs	Annual CAPEX Impact	Annual OPEX Impact
Furniture & Equipment	$1,495,000	$902,000	$117,200	$97,100
Media Collections	$1,300,000	$0	$112,900	$122,400
Library Software	$43,000	$38,000	$16,000	$285,100
Leasehold Improvements	$0	$730,000	$0	$0
Total	**$2,838,000**	**$1,670,000**	**$246,100**	**$504,600**

I.8 (Library Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Many asset categories within Library Services have used an age-based approach to assess the condition of assets therein; these assets should have their condition assessed annually to provide more accurate reporting on overall asset conditions.

Process Optimization

- Attempt to quantify the changes in customer demands to better understand the needs of service delivery within libraries across the City.

- Increasingly libraries are stationed in multi-use facilities which requires clarity of ownership and responsibilities. Develop Service Level Agreements (SLAs) with other stakeholders.

Technology & Tools

- Conduct a comprehensive cyber risk assessment specifically tailored to library services, considering factors such as data privacy, network security, and potential threats to digital collections, and implement advance technology to mitigate the risk.

- Implement a work order management system to track maintenance, repairs, and replacements, ensuring that all activities are documented and logged for future reference and analysis.

Animal Services

J.1 (Animal Services) – Maturity Assessment

45 Pre-Project Score

53 Current Score

81 Target Score

Activities to Achieve Target Score in Future

- Compare asset management practices, operational strategies, and service delivery models with other mature animal services organizations such as Guelph Humane Society. Identify best practices and key performance indicators (KPIs) to guide improvement efforts.
- Integrated asset management into operational planning processes by aligning resource allocation, staffing levels, and service delivery schedules with levels of service and performance metrics.
- Establish standardized protocols for capturing, documenting, and maintaining asset data related to the condition and performance. Utilize better digital systems to streamline data collection and analysis processes.

Radar chart with axes: Analysing the Strategic Direction, LOS Framework, Demand Forecasting & Management, Asset Condition & Performance, The Strategic AMP, Managing Risk & Resilience, Operational Planning, Capital Works Planning, Asset Financial Planning & Management, AM Plans (for the Asset Portfolio & Assets), AM People & Leaders, Asset Data & Information, AIMS, AM Process Management, Outsourcing & Procurement, Continual Improvement.

Legend: Pre-Project Score, Current Score, Target Score

Bar chart:

	Pre-Project Score	Current Score	Target Score
Understanding & Defining Requirements	43	55	80
Developing AM Lifecycle Strategies	40	49	77
Asset Management Enablers	50	56	86
Overall Score	45	53	81

Legend: Pre-Project Score, Current Score, Target Score

APPENDIX J.2 - SOLI REPORT CARD

Animal Services

Total Asset Replacement Value:	$345,600
Total Asset Replacement Value Including Facilities, City Support Fleet and Software	$11.6 Million
Future Condition Trend (Next 10 Years):	Declining - As assets age they may require attention in the future
Data Confidence & Reliability:	Medium (Condition Based)

The 2022 SOLI analysis continues to report assets under two different asset representation perspectives: **"Responsibility View"** and a **"User View"** representation

> *Responsibility View:* Shows the assets under the service area that is responsible for managing them
> *User View:* Shows the assets under the service area that is using them

While the User View shows the use of assets, the Responsibility View

- ✓ provides a direct line of sight to those assets managed by the service area;
- ✓ will help prioritize lifecycle activities managed by the service area;
- ✓ aligns with industry best practices; and
- ✓ provides guidance to future asset management planning practice and departmental initiatives.

The table below illustrates the replacement value (in $2023) under the two different views.

Asset Type	Replacement Value ($Millions)	Asset Inventory
Assets Managed by Animal Services		
Equipment	$0.3	171
Subtotal Assets Managed by Animal Services (Responsibility View)	*$0.3*	*171*
Assets Managed by Other Service Areas		
Animal Services Facilities [1]	*$9.9*	*2*
City Support Fleet Used by Animal Services	*$1.1*	*12*
Software Used by Animal Services	*$0.2*	*1*
Total Replacement Value (User View)	**$11.6**	**-**

APPENDIX J.2 - SOLI REPORT CARD

Animal Services

Major Types of Assets within Animal Services - Responsibility View

The figure below illustrates the replacement value and condition of Animal Services assets under the responsibility view. Under this view, the total replacement value of assets is $345,600. Consistent with the 2021 SOLI, only Animal Services equipment is considered under the management of the service area and therefore makes up the entire replacement value. Overall, the Animal Services assets are in Very Good condition with about 1% of the total asset rated in Poor condition.

**RESPONSIBILITY VIEW:
REPLACEMENT VALUE BY ASSET
CATEGORY ($M)**

Equipment, $0.3 , 100%
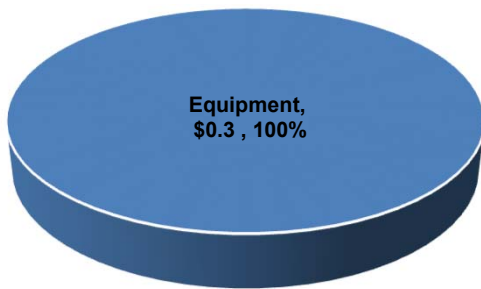
**RESPONSIBILITY VIEW:
ANIMAL SERVICES ASSET CONDITION
($M)**

Poor, $0.0 , 1%
Fair, $0.0 , 2%
Good, $0.1 , 38%
Very Good, $0.2 , 59%
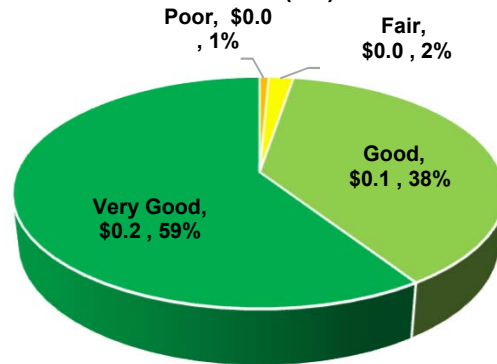
Data Source: Departmental Inventory, PSAB data as of year-end 2021

Major Types of Assets within Animal Services - User View

The figures below illustrate the replacement value and condition of Animal Services assets under the user view. Under the user view illustration, which also captures facilities, City support fleet and software, the replacement value is about $11.6 million. Of this total, the Animal Services facilities represent the largest share at $9.9 million. Nearly all of the City's assets are considered to be in Good to Very Good Condition with marginal amounts in Poor and Fair condition. Overall improvements have been made to the Animal Services facilities which have increased the condition of the facilities compared to previous reporting under the SOLI.

**USER VIEW:
REPLACEMENT VALUE BY ASSET
CATEGORY ($M)**

Software, $0.2 , 2%
Equipment , $0.3 , 3%
Fleet, $1.1 , 10%
Facilities, $9.9 , 85%

**USER VIEW:
ANIMAL SERVICES ASSET
CONDITION ($M)**

Poor, $0.0 , 0.3%
Fair, $0.0 , 0.08%
Good, $0.2 , 2%
Very Poor, $- , 0%
Very Good, $11.4 , 98%
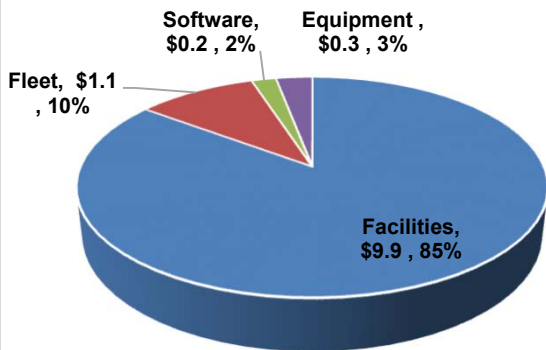
APPENDIX J.2 - SOLI REPORT CARD

Animal Services

Age Summary

The following figure summarizes the average age of the City's Animal Services assets compared to the expected useful life of each asset category. The methodology applied to undertake the average age profile analysis considers the age weighted by replacement value of each asset, which influences average asset age and remaining useful life illustrated.
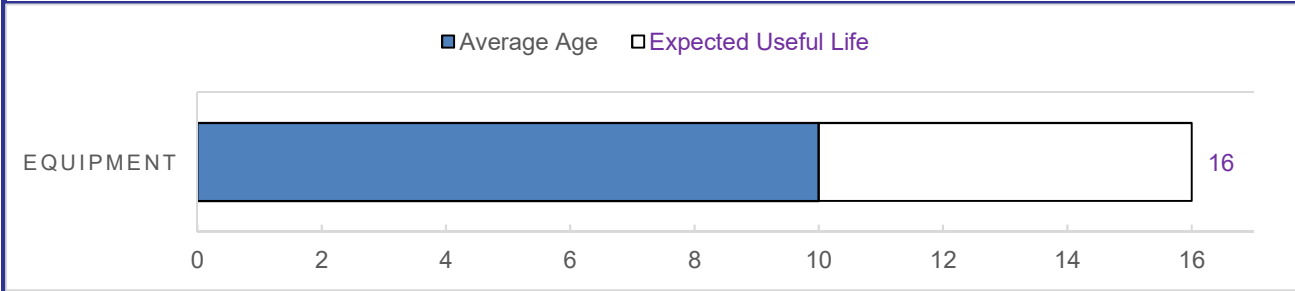
Condition Summary

The figure below illustrates the condition of the various Animal Services assets by key sub-component areas based on the user view. While the assets are generally in Good to Very Good condition, a small portion of Fleet and Equipment assets are in Fair and Poor condition.
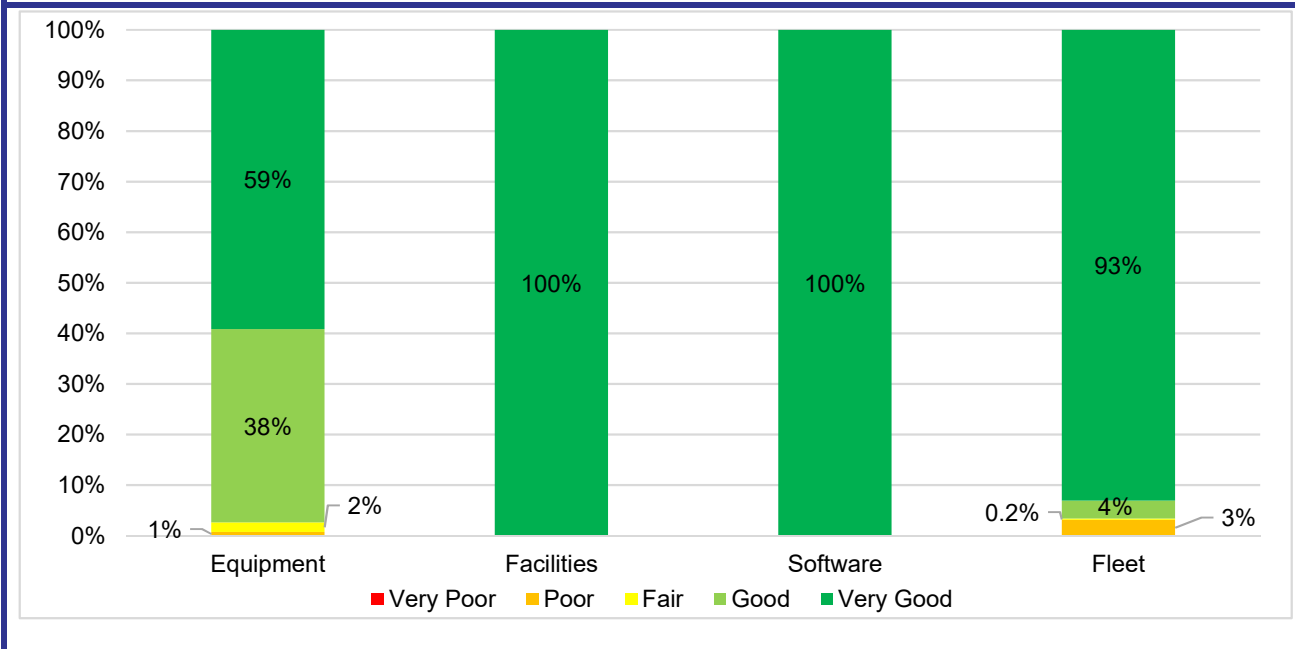
APPENDIX J.2 - SOLI REPORT CARD

Animal Services

Comparison of 2022 vs. 2021 Inventory and Replacement Value

The tables below outline the difference in Animal Services assets in the 2021 SOLI relative to the 2020 SOLI, while considering reporting under the two different views. Please note, the 2021 SOLI is shown as it was reported (i.e. in $2022). The values for the 2022 SOLI are in $2023.

Under the responsibility view framework, the total value of Animal Services assets has increased from $300,400 to $345,600. The increase in value can largely be attributed to cost increases since the last report. As no recent costing data was available, the asset replacement values for Animal Services Equipment were inflated by the Machinery & Equipment Price Index (M&E) from the values identified in the 2021 SOLI (which were reported in $2022). Additional information on the indices applied to each asset class can be found in Table 5 of this report.

When considering the Animal Services Facilities, City Support Fleet and IT assets, the total asset value for Animal Services increased proportionately with the inclusion of these assets. The overall increases can be attributed to updated costing as part of the 2022 SOLI through the increased inflation factors.

Please note, the Facilities, City Support Fleet and IT report cards include additional information (including the inflation measure applied) on those assets used by Animal Services but maintained and managed by a different City department.

Asset	2021 SOLI		2022 SOLI	
Facilities	2	Each	2	Each
Fleet	13	Each	12	Each
Software	1	Each	1	Each
Equipment	143	Each	171	Each

Asset	2021 SOLI ($2022)	2022 SOLI ($2023)	Difference	
1. Assets Managed by Other Service Areas*				
Facilities	$ 9,444,949	$ 9,887,046	$ 442,097	5%
Fleet	$ 1,018,233	$ 1,134,519	$ 116,286	11%
Software	$ 213,282	$ 232,980	$ 19,698	9%
Subtotal Assets Managed by Other Service Areas	$ 10,676,464	$ 11,254,544	$ 578,080	*5%*
2. Assets Managed by Animal Services				
Equipment	$ 300,353	$ 345,646	$ 45,292	15%
Subtotal Assets Managed by Animal Services (Responsibility View)	$ 300,353	$ 345,646	$ 45,292	*15%*
Total Replacement Value: User View (1+2)	$ 10,976,817	$ 11,600,190	$ 623,373	6%

*Responsibility of managing the assets lies with another service area, but assets are used by Animal Services

J.3 (Animal Services) – Levels of Service

Percentage of Animal Services calls attended within 24 hours

All calls are attended to within 24 hours, meaning the current performance is at target performance level. No net additional asset management costs are required at the current level today, although recognizing additional costs will be required to support growth. Furthermore, future costs may also be identified in future iterations of these plans if the service level changes.

Shelter population balance calculation (Total number of animal entering/animals leaving)

The most recent year where this data was available showed an increase of shelter population by animals of approximately 4% within animal services facilities. The target identified by staff was 0%, meaning that all animals taken in also left the facility. A new animal services facility would be expected to decrease this measure to the target by 2032. The costs identified to construct this facility are $69 million which includes $3.5 million for due diligence and design. There will be an additional operating cost for this new facility.

Peak Number of Animals on Waitlist per Calendar Year

In 2022, there was a peak waitlist of 70 animals waiting to be taken in by the Animal Shelter. The target performance set by the service area is to have no waitlist, meaning that there is always excess capacity within the facility to bring in animals that need to be surrendered to the shelter immediately. Several programs have been implemented or proposed to reduce the waitlist, including:

- A Pet Food Pantry Program with the goal of allowing people who can't afford pet food to refrain from surrendering their pet to our care

- A donation Fund with the goal of covering a portion of emergency medical costs for owners who can't afford a pet's surgery on their own and would otherwise surrender the animal into our care, an adoption list which would allow residents to keep their pets at home until an adopter is found.

- The space created from the new animal shelter proposed above will also help reduce the peak waitlist as there would be an increase in the available number of kennels.

Valid Pet License Holders

The current performance is 5,745, with a long-term target of having 6,000 valid pet license holders in Brampton. A proposed change to the pet licensing program increasing the duration of the licenses from a 1-year to a 2-year license is expected to increase this measure. In combination with the pre-existing awareness campaigns in schools and parks, this target performance is expected to be achieved with no additional costs.

J.3 (Animal Services) – Levels of Service

Customer Levels of Service		Technical Levels of Service			Current Levels of Service	Proposed Levels of Service
CLOS Category	Customer Level of Service Measure	Technical LOS Category	Technical Level of Service Measure	Asset Class	Current Performance	Desired Target Performance
Quality	Animal Services meets customer needs and expectations	Renewal / O&M	% of Animal Services calls attended within <u>24 hours</u>.	Overall Animal Services	100%	100%
Capacity & Use	Providing efficient Animal Services to ensure the protection of people, animals and property	Growth	Shelter population balance calculation (Total number of animal entering/animals leaving)	Overall Animal Services	Increase by 4% (Estimated)	0%
		Growth	Peak Number of Animals on Waitlist Per Calendar Year	Overall Animal Services	70 Animals	No Waitlist (Ideally, stray animals are adopted out quickly enough to bring animals that need to be surrendered in right away)
Function	Animal Services ensures the protection of people, animals and property	Upgrade	Valid Pet License Holders	Overall Animal Services	5,745 (Estimate)	6,000

J.4 (Animal Services) – Demand Management

Demand Driver	Current Position	Projection	Services Impacted	Demand Direction	Treatment of Assets to Manage Demand	Cost
Population Growth	Brampton is one of the fastest growing Cities in Canada and the existing animal shelter no longer meets the needs of Brampton.	Brampton's population is projected to grow to 985,000 by year 2051 and the service needs to be supplemented.	The current facility is not sized to accommodate the current customer base and it not designed to manage the growth expected in the City. Animal services will be impacted with growth as the wait list increases and the number of animals entering and leaving the facility will continue to be impacted	↑	The design and construction of a new 25k sq.ft facility would help manage demand. The new facility would be a net new facility - the existing animal shelter would not be decommissioned and will remain under Animal Services Control to provide services	Total cost estimated at $69.0 million.

J.5 (Animal Services) – Risk Management

Risk Identification

		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	Medium	Medium	High	High	Extreme
	P4	Low	Medium	Medium	High	High
	P3	Low	Low	Medium	Medium	High
	P2	Insignificant	Low	Low	Medium	Medium
	P1	Insignificant	Insignificant	Low	Low	Medium

The methodology is discussed in detail in the Risk Management section of the report is applied consistently across all service areas. The table below provides a summary of a guide that can be used to interpret the results of the Facilities risk analysis.

- Insignificant (Green) – Accept risk, no risk treatment required.
- Low (Light Green) – May be acceptable but monitoring of assets may be required.
- Medium (Yellow) – Requires some consideration by management with necessary risk management and monitoring adopted as needed.
- High (Orange) – Requires consideration by management, risk management and monitoring are required.
- Extreme (Red) – Requires extensive management input, risk mitigation to reduce to an acceptable level is essential.

In $Millions		Consequence				
		C1	C2	C3	C4	C5
Likelihood	P5	$0	$0	$0	$0	$0
	P4	$0	$0.002	$0	$0	$0
	P3	$0	$0.3	$0	$0	$0
	P2	$0	$0	$0	$0	$0
	P1	$0	$0	$0	$0	$0

Note: Likelihood, consequence and risk approach are defined in detail in the Risk Management Section

Risk Evaluation

The figure below summarizes the cumulative results of the Risk Analysis undertaken for Animal Services. In total, about $345,600 in assets have been assessed. The majority, about $343,200 (99%) have been assessed as Low risk, and a very small portion, approximately $2,400 (1%), are assessed to be in the Moderate risk category. No assets have been assessed as High or Extreme risk.

Animal Services - Summary of Risk Assessment by Replacement Value
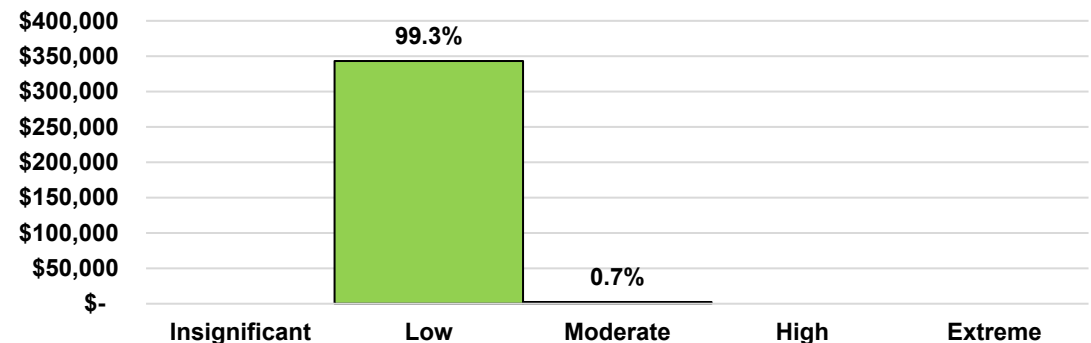
Risk Treatment

Through detailed analysis of the Risk Assessment, the results show:

- The risk map indicates that there are no assets which fall into the High or Extreme risk category. That said, nearly all assets within this service area are assessed as Low risk.

- The likelihood scores of Moderate risk assets indicate that some assets within this category are in Poor condition making up about $2,400 in assets. However, the consequence of failure remains fairly low as these assets are made up of minor equipment.

- At this stage, no further treatment requirements are required to manage the risks, however, close monitoring of the condition of the assets is recommended.

APPENDIX J.6 - ASSET INFORMATION MANAGEMENT STRATEGY

<table>
<tr><td colspan="5">Animal Services
Asset Information Systems Maturity Tracker and Roadmap Update</td></tr>
<tr><td colspan="5">Asset Related Software Solutions or Tools:
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<tr><td rowspan="2">DM
Data Management
(Governance and Collection)</td><td>1.1 Formalize asset data governance including interdependent assets</td><td>In Progress - Minimally Completed</td><td colspan="2">Develop a formal process and inventory list assets managed by Animal Services and collaborate with other groups for information transfer on assets provided or managed by them.</td></tr>
<tr><td>1.2 Mature processes and continue implementing tools for the data collection and data management, including data migration into City systems upon acquisition or capital construction phase.</td><td>In Progress - Minimally Completed</td><td colspan="2">Implementing a standardized inventory management system or software to track the acquisition, lifecycle, and disposition of these assets.</td></tr>
<tr><td rowspan="2">SOI
State of Infrastructure
(Asset ID, Location, Classification, Physical Attribute, Condition)</td><td>1.1 Improve on inventory data and attributes.</td><td>In Progress - Minimally Completed</td><td colspan="2">Defining data attributes and metadata fields within the inventory system to capture relevant information such as asset type, replacement value, location, condition, and acquisition date.</td></tr>
<tr><td>1.2 Identify asset classes that require to be tracked outside of the existing core Infrastructure management solutions.
Evaluate if current ISM solution or other solution can be implemented for equipment and furniture.</td><td>Not Started</td><td colspan="2">Same as above cell and B70 and Evaluate the current standing and possibility of utilizing one of the existing solution available at the City.</td></tr>
</table>

APPENDIX J.6 - ASSET INFORMATION MANAGEMENT STRATEGY

Information Categories (Data Type)	Roadmap Strategy Plans	Sub-category Status	Next Steps
Animal Services **Asset Information Systems Maturity Tracker and Roadmap Update**		
Asset Related Software Solutions or Tools: **Excel, PeopleSoft, Questica**		
LOS **Levels of Service** (Performance, Predictive)	**1.1** Review how existing LOS measures are tracked and improve tracking by identifying attributes required to quantify and work on collecting the data.	In progress - Significantly Completed	Improve the collection and analysis of Customer and Technical Levels of Service (LOS) metric data for assets.
	1.2 Collaborate with Corporate Performance group and Service areas on tracking performance for current LOS. Link selected LOS to the dashboards. Develop dashboard update for City assets first for regulatory compliance.	In Progress - Minimally Completed	Implementing standardized data collection methods and tools to capture relevant LOS metric data and work together with the Corporate Performance Group to link it to the City's dashboard.
	1.3 Associate current cost to provide major LOS and develop the linkage to lifecycle strategy for selected assets, start including refined information on O&M costs collected through CMMS solutions as attributed to specific LOS. Timeline to align with the CAMO roadmap for DAMPs	Completed	Explore the use of a CMMS solution such as FAMIS for tracking O&M costs.
LC **Lifecycle Strategy** (Risk/Criticality, Work Management, Lifecycle)	**1.1** Define lifecycle activities to be tracked in alignment with Corporate Lifecycle activities framework	In Progress - Minimally Completed	Identify business requirements and thereafter establish a system for recording work management activities related to asset lifecycle management
	1.2 Develop and continue to refine systems, tools and processes to enable all asset lifecycle information to be captured and be available for analysis by service areas for lifecycle strategies development and refinement	Not Started	Implement a work order management system or integrating work management functionalities into existing asset management systems.
	1.3 Review how to integrate risk factors into Lifecycle strategies and CMMS activities	Not Started	Review and update the risk assessment completed in the Service Area AMP. Incorporate data from risk assessments, work management activities, and levels of service to inform lifecycle strategy development.
FS **Financing Strategies** (Asset Values, Expenditure Forecasts, Funding Sources, Funding Gap, Funding Sustainability)	**1.1** Develop procedures and frequency to update asset replacement values and integrate them within the asset inventory management systems including unit cost and reference to the source of the information.	In Progress - Minimally Completed	Identify business requirements and thereafter - Collaborate with IT to configure FAMIS so that cost data from various sources, including invoices, procurement records, and financial systems can be integrated.
	1.2 Develop requirements and explore use of current systems for decision support	Not Started	Collaborating with IT/CAMO team to assess the technical feasibility of animal services into a DSS within an appropriate system.
	1.3 Development of lifecycle cost model to capture all lifecycle activities (non-infrastructure solutions, operation/maintenance, renewal, replacement, disposal and expansion) leveraging information contained in CMMS and other systems	In Progress - Minimally Completed	Identify business requirements and thereafter use CMMS solution to track and manage lifecycle activities initiated through work orders and capture the associated costs.

J.7 (Animal Services) – Lifecycle Management
Operations & Maintenance and Capital Activities

Annual O&M Funding Needs by Asset Category
$0.1M Total O&M Cost per Annum
($000)

Equipment, $116.2, 100%
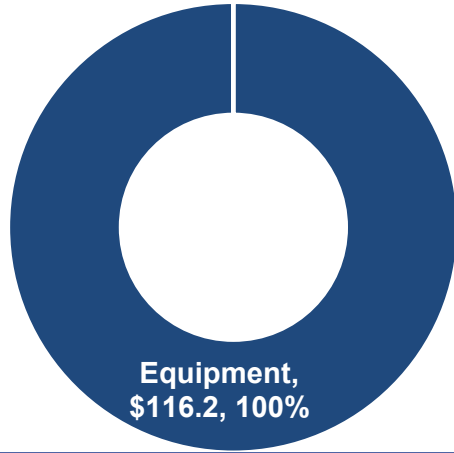
O&M Activities

- Largest contributor to the total annual costs relates to salaries, wages and benefits.

- Additional costs identified for **equipment** and **materials** to keep assets in working order and to avoid service interruptions.

- Service area maintains equipment, regular inspections of facility and equipment and responsibility to carry out minor repairs.

Asset Category	Replacement Value	Estimated Service Life	Capital Activity	Annual Capital Funding Needs
Equipment	$345,600	15	Replacement	$5,500
Total	**$345,600**			**$5,500**

Capital Activities

The table identifies that the total annual average required capital investment to maintain current levels of service is estimated at **$5,500**. These costs are associated with the equipment used to carry out day-to-day operations for Animal Services.

For equipment assets, the ideal capital activity schedule would be to continue to use the assets until they no longer perform their intended function. At that time, the assets will be replaced.

Currently, no non-infrastructure solutions (NIS) have been identified. Lastly, the capital costs to construct a new animal shelter is captured in *Appendix A - Facilities*.

J.7 (Animal Services) – Lifecycle Management
Current & Proposed Levels of Service

Asset Category	Replacement Value	Annual O&M Funding Needs	Annual Capital Funding Needs (Incl. NIS)	Total Annual Funding Needs
Equipment	$345,600	$116,200	$5,500	$121,700
Total	**$345,600**	**$116,200**	**$5,500**	**$121,700**

Current Annual Expenditure by Activity ($000)

Capital - Replacement, $5.5, 5%

O&M, $116.2, 95%
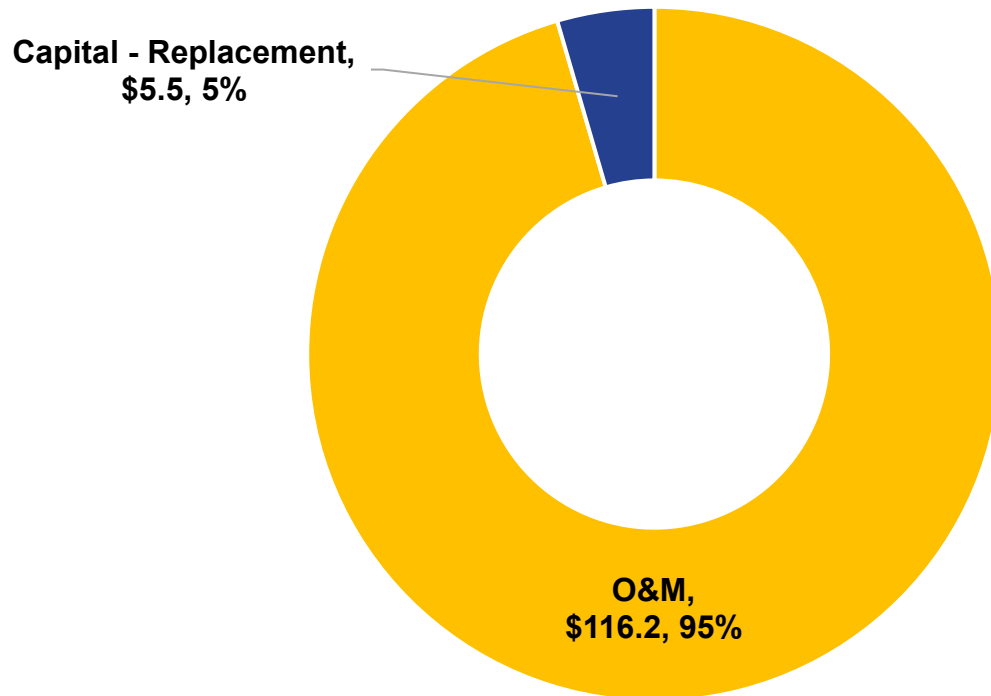
Proposed Levels of Service

As Animal Services only captures equipment (all Animal Services facilities are captured in *Appendix A - Facilities*), there are no proposed levels of service beyond the current levels of service provided.

J.8 (Animal Services) – Monitoring & Improvement Plan

Data Enhancement & Governance

- Develop Asset Hierarchy further to a sub-asset level in order to support data analysis.

- Update replacement costs for the higher value assets, as current replacement values have been determined by inflating historical cost.

Process Optimization

- Standardize the monitoring of "Peak Number of Animals on Waitlist per Calendar Year".

- Develop process to monitor customer preferences to be able to predict required service changes and continue to proactively manage the animal population within the City.

- Develop a priority-based call response to better support injured live animals.

- Re-evaluate the asset interdependencies with other service areas internal to the city and develop Service Level Agreements.

Technology & Tools

- Establish an inventory management system to consistently monitor assets assumption, cost details, asset condition and disposal.

General Appendix

APPENDIX K.1 - ASSET MANAGEMENT MATURITY FRAMEWORK

Section	MATURITY LEVEL				
	Aware **0-20**	**Basic** **21-40**	**Core** **41-60**	**Intermediate** **61-80**	**Advanced** **81-100**
Understanding and Defining Requirements					
Analysing the Strategic Direction	The organization demonstrates an awareness of its external and internal strategic environment (evident in responses to interview questions).	A high-level, informal strategic analysis has been carried out to determine major trends (strategic issues) influencing the delivery of AM, and the results documented. Strategic organizational planning may be in place but not integrated with asset management.	Governance and leadership expectations of the AM System are expressed through an approved and AM Policy and AM Objectives. The AM policy and objectives cover all aspects of the asset lifecycle. The AM policy and objectives are being actively applied. The AM Objectives are aligned to organizational objectives.	As for Core, plus: The AM Policy and Objectives have been developed with demonstrable consideration of the implications of: · Analysis of the strategic context (internal, external, customer environment) analysed. · Analysis of the asset portfolio to determine fitness-for-purpose (current and future).	As for Intermediate, plus: Achievements against AM Objectives and delivery of the AM Policy are regularly monitored and reported. Regular environmental scans are in place to identify strategic changes implicating the AM System and required changes are managed through SAMP and AMP review processes.
LOS Framework	The organization recognises the benefits of defining levels of service, but they are not yet documented or quantified (evident in responses to interview questions).	Customer Groups defined and requirements informally understood. Some key performance measures have been defined for the activity.	Customer groups needs or expectations are analysed and documented. Level of service statements cover a range of service attributes are: · aligned with the organizational service planning and performance management processes · periodically measured and reviewed Level of service and cost relationship understood · aligned and integrated with performance measures. Level of service and cost relationship understood and described in the AMP.	As for Core, plus: Service level options (with associated risks and costs) have been presented to executive and governance teams to support level of service decisions. Levels of service are integral to decision making and business planning, with evidence that AM strategies and decision frameworks are aligned to the levels of service framework. Asset (technical) performance measures are aligned to service (customer) performance measures.	As for Intermediate, plus: A customer and stakeholder communications plan is in place outlining processes for engaging with customers and stakeholders, with evidence the plan is implemented. Key customers and stakeholders are presented with, and consulted on, significant service levels and options, with key outcomes documented in the AMP.
Demand Forecasting & Management	Future demand requirements generally understood but are not well documented (evident in responses to interview questions).	Demand forecast trends based on knowledgeable staff. Demand drivers are understood and described. Demand management strategies are being developed. Some basic demand information is being collected and monitored.	Demand forecasts are based on relevant primary demand factors (e.g. population growth) and extrapolation of historic demand trends. Demand forecasts are presented in the AMP with supporting assumptions. Risk associated with demand change are broadly understood and documented in the AMP. Strategies to manage demand (demand management strategies, asset-responses) are documented in the AMP. Demand management is considered in investment evaluations.	Demand forecasts are based on analysis of historic demand trends and all material demand factors. A range of demand scenarios is developed (e.g. high/medium/low) and presented in the AMP with supporting assumptions. Strategies to manage demand (demand management strategies, asset-responses) are documented in the AMP with supporting evidence that costs and benefits have been evaluated in determining the best strategy. Demand management is considered in all strategy and capital project decisions.	As for Intermediate, plus: Risk assessment carried out for different demand scenarios with mitigation actions identified and evaluated in determining the appropriate demand forecast scenario for AM planning. Sensitivity testing is carried out to determine confidence levels in demand forecasting scenarios. Demand risks are included in organizational risk registers.

APPENDIX K.1 - ASSET MANAGEMENT MATURITY FRAMEWORK

Section	MATURITY LEVEL				
	Aware 0-20	Basic 21-40	Core 41-60	Intermediate 61-80	Advanced 81-100
Understanding and Defining Requirements					
Asset Condition & Performance	The need for condition and performance information is understood but is not quantified or documented.	Condition and performance information is based on knowledgeable staff and is described in the AM Plan. Some asset condition and performance data is collected but is not well-linked to defined levels of service and performance measures.	Adequate data and information is collected to report current performance against levels of service. A condition and performance monitoring process is documented and followed for critical assets. Condition and performance information is suitable to be used to plan and prioritise short term maintenance and renewals. Performance results are reviewed to identify areas failing to achieve targets.	A condition and performance monitoring strategy and programme is developed for all assets, with consideration of factors such as asset criticality, inherent risk, lifecycle and demand. Condition and performance information is routinely captured and updated in line with the programme. Future condition and performance information is modelled to assess whether levels of service can be met in the long term. Performance results are regularly evaluated to determine appropriate responses.	The condition and performance assessment strategy is implemented and audited with a 5+year data history.
The Strategic AMP	The organization is aware of the concept of, and benefits of, a SAMP and AM System (evident in responses to interview questions).	The AM System is broadly understood in terms of the assets and functions covered. A process for the establishing the AM System has commenced (though these aspects may not be documented in a 'SAMP').	The scope of the AM System is defined. The links between organizational and AM objectives are defined. The process for establishing and maintaining the AM System is developed (e.g. the AM Improvement Plan). Strategic issues have been identified and options developed. The above aspects are documented in the SAMP or equivalent document. SAMP input from relevant teams and stakeholders (internal and external) occurs.	As for Core, plus: The relationships and processes between the AM System and other parts of the organization are defined in the SAMP or equivalent document. Strategic issues and options have been analysed and prioritised and a long-term strategy has been developed. There is evidence that the SAMP is widely communicated and is actively used to support decision making . A regular SAMP review and approvals process is in place.	A SAMP is in place, with content as per ISO 55002. Formal review, audit and approvals processes are documented with evidence of implementation.
Developing Asset Management Lifecycle Strategies					
Managing Risk & Resilience	Risk management is identified as a future improvement (evident in responses to interview questions).	High level organizational risks are identified and reported to management. Critical services and assets are understood and considered by staff involved in maintenance / renewal decisions (evident in responses to interview questions).	An organizational risk management policy, framework and process is in place. An asset criticality framework has been developed and critical assets are recorded in the AIMS. Activity risks are identified in the risk register and regularly updated and monitored. Management strategies for highest risks and most critical assets are developed and documented (in the AMP, risk management plan or similar). The approach to managing asset network resilience is described in the AMP or other supporting document.	As for core, plus: A resilience strategy has been developed (may be part of the SAMP or AMP) and is being implemented. Systematic risk analysis and resilience considerations are incorporated into major decisions. The risk register is regularly updated, actions monitored and reported to management. Risk is managed, prioritised and escalated consistently across the organization.	Asset risks are assessed for multiple failure modes. An ongoing programme of asset network and organizational resilience assessments are completed with improvements identified and actively progressed. Risk and resilience levels are quantified for the organization and risk mitigation options to close identified gaps are evaluated. Risk and resilience are integrated into all aspects of decision making.

APPENDIX K.1 - ASSET MANAGEMENT MATURITY FRAMEWORK

Section	MATURITY LEVEL				
	Aware 0-20	Basic 21-40	Core 41-60	Intermediate 61-80	Advanced 81-100
Developing Asset Management Lifecycle Strategies					
Operational Planning	Operational processes based on historical practices but there is awareness of opportunities to improve and optimise operational activities.	Operating plans are available for critical operational areas. Operational scheduling is largely based on historic practices with adjustments to planned and unplanned maintenance frequencies based on experienced staff and contractor knowledge. Operations organizational structure in place and roles assigned.	Operating plans are available for all operational areas. Incident and emergency management plans are in place. Operational support requirements have been reviewed against good practice and are in place, including consideration of critical spares requirements. Trends in planned and unplanned maintenance and renewal activities are analysed and trade-offs considered in determining optimal maintenance and renewal frequencies.	As for core, plus: Operational objectives and intervention levels defined (aligned to AM Objectives) and results analysed to drive improvements. A formal and regularly reviewed operational planning process is in place. Incident and emergency management plans are regularly tested. Optimal planned and unplanned maintenance and renewals programmes are established with analysis of operating cost, asset condition/performance, risk and asset criticality.	Decision frameworks (e.g. multi-criteria analysis, benefit-cost analysis) are used to prioritise and optimise expenditure across planned and unplanned maintenance and renewals programmes. Continual review and improvement can be demonstrated for all operational processes. Reviews are undertaken after significant events and recommendations are implemented.
Capital Works Planning	Capital investment projects are identified during annual budget process. There is awareness of the need for longer-term capital budgeting (evidenced in interviews).	There is a schedule of proposed capital projects and renewal programmes based on historical costs and staff judgement of future requirements. Renewals strategies are verbalised in interviews but are not well documented. CAPEX projects and programmes justified in AMP (high level) and supporting CAPEX database (detail).	Projects have been collated from a wide range of sources (e.g. through reviews of asset performance, growth, risk management and renewal analysis) and are collated into a project register. Projects are tracked (in a project register or similar) through capital planning stages. Short term capital projects are fully scoped (including options analysis) and cost-estimated. Renewals programme is based on age and limited condition data. The CAPEX programme is prioritised, based on agreed decision criteria, to rank the relative importance of capital projects and programmes.	As for core, plus: A capital delivery / options evaluation framework is in place and used consistently across the organization. Formal options analysis and business case development has been completed for major projects in the next three years. Long term major capital projects are conceptually identified and broad cost estimates are available. A formal prioritisation framework is routinely applied to all capital projects and programmes (utilising a multi-criteria or benefit-cost approach).	As for intermediate, plus: Formal options analysis and business case development has been completed for significant major projects beyond 3 years. Long-term capital investment programmes are derived from advanced decision techniques such as predictive renewal and network modelling which evaluate level of service and cost scenarios.
Asset Financial Planning & Management	Financial planning of asset related expenditure is largely an annual budget process, but there is intention to develop longer term forecasts (evident in interviews).	Financial planning of asset related expenditure is largely an annual budget process, but there is intention to develop longer term forecasts (evident in interviews).	Depreciated replacement cost valuations aligned to asset information used in renewal forecasts. Asset expenditure categories are suitable to enable AM costing / forecasting analysis. Asset-related financial forecasts are aligned to operational and capital planning and forecasting processes. Consequential OPEX for all new assets is included in OPEX forecasts. Asset and corporate long-term financial planning processes are aligned. Funding strategies are developed and documented.	As for core, plus: Long term asset funding options are regularly reviewed and evaluated with consideration of distribution of benefits (user pays), practicality, financial prudence and intergenerational equity. Major expenditure proposals incorporate whole of life costing.	As for Intermediate, plus:As for intermediate, plus: Advanced financial modelling includes sensitivity testing of assumptions, demonstrable whole of life costing and cost analysis for level of service options. A decision framework enables budgets, projects and programmes to be optimised across all activity areas. Formal risk-based sensitivity analysis of financial forecast scenarios is carried out. Asset and financial data and reporting are fully integrated or regularly reconciled.

APPENDIX K.1 - ASSET MANAGEMENT MATURITY FRAMEWORK

Section	MATURITY LEVEL				
	Aware 0-20	Basic 21-40	Core 41-60	Intermediate 61-80	Advanced 81-100
Developing Asset Management Lifecycle Strategies					
AM Plans (for the Asset Portfolio & Assets)	Stated intention to develop AMPs (evident in responses to interview questions).	A portfolio AMP contains basic information on assets, service levels, planned works and financial forecasts and future improvements. The AMP may not cover all asset types or services, may only have a short term focus, may be developed in isolation from organizational planning, or may not be otherwise sufficiently mature for the organization.	Portfolio AMPs contain core content including asset information, levels of service, demand and lifecycle strategies linking to financial forecasts with key assumptions stated. AMPs are aligned with corporate long-term strategic and financial plans and objectives and are signed off by managers. AMP input from relevant teams and stakeholders. Internal and external reviews occur. AMPs are updated in accordance with the AM Policy / SAMP.	As for core, plus: The Portfolio AMP is supported by Asset Class AMPs, where appropriate. AMPs include confidence levels, detailed significant assumptions and associated risks. AMPs are fully integrated with corporate long-term financial planning process and iterations are formally managed. AMPs are periodically updated, discussed and approved by governance and leaders.	As for intermediate, plus: AMPs are managed as a 'live' document and updated when significant changes signalled. Formal review, audit and approvals processes are documented with evidence of implementation.
Asset Management Enablers					
AM People & Leaders	The organization recognises the benefits of an asset management function within the organization, but has yet to implement a structure to support it (evident in responses to interview questions).	AM functions are carried out by small groups, but AM is not embedded or coordinated across the organization.	Regular ongoing AM coordination processes established (e.g. a cross-divisional committee) which support an integrated and consistent approach across the organization. Position descriptions incorporate the main AM roles and training is made available suitable to those roles. Visible ownership and support of AM by governance and leadership and awareness of AM purpose across most of the organization (evident through interviews).	As for core, plus: Leadership is involved in AM coordination (e.g. membership on a regular AM Steering Group or separate AM Governance coordination group). An internal AM communications and training plan is in place and being implemented. Roles reflect AM System competency requirements (defined in SAMP or equivalent document) and are defined in all relevant position descriptions. Demonstrable alignment between AM objectives, team and individual responsibilities.	As for core, plus: Leadership is involved in AM coordination (e.g. membership on a regular AM Steering Group or separate AM Governance coordination group). An internal AM communications and training plan is in place and being implemented. Roles reflect AM System competency requirements (defined in SAMP or equivalent document) and are defined in all relevant position descriptions. Demonstrable alignment between AM objectives, team and individual responsibilities.
Asset Data & Information	Asset information is not available. Awareness of need for asset information (evident in responses to interview questions).	Basic physical asset information recorded (e.g. location, size, type), but may be based on broad assumptions or not complete.	Sufficient information to complete depreciated replacement cost valuation (physical attributes, replacement cost and asset age/life) and to manage operational requirements for assets. Asset hierarchy, identification and attribute standards documented and implemented. Metadata held as appropriate. A formal information needs analysis has been undertaken and an Information Strategy and data improvement plan developed. Knowledge of asset criticality and risk supports the regularity of data collection and updating.	As for core, plus: A reliable register of physical, financial and risk attributes recorded. The Information strategy and data improvement programme are being actively monitored and reported. The use of asset information in asset management planning and decision making is reviewed for effectiveness. Documented, systematic and audited data collection process in place based on a formal information needs analysis.	As for intermediate, plus: All asset data is accurate, consistent and reliable and is used to inform both short term and long-term decision making. Information on work history type and cost recorded at an appropriate asset or component level to enable analysis. Systematic and fully optimised data collection programme with supporting metadata.

APPENDIX K.1 - ASSET MANAGEMENT MATURITY FRAMEWORK

Section	MATURITY LEVEL				
	Aware **0-20**	**Basic** **21-40**	**Core** **41-60**	**Intermediate** **61-80**	**Advanced** **81-100**
Asset Management Enablers					
AIMS	Intention to develop an electronic asset register / AIMS (evident in responses to interview questions). A financial fixed asset register may be in place but only captures accounting data.	Asset register capable of recording all core asset attributes – capacity, type, size, material, etc. Asset information reports can be manually generated for AM Plan input. Simple asset database in use (such as spreadsheet or Access database).	Industry-recognised AIMS or asset register system enables hierarchical asset capture and reporting to component level. AIMS enables live tracking of customer requests linked to maintenance tasks. AIMS provides basic AM reporting capability - condition / performance, renewal forecasts, valuations. The AIMS meets most user requirements (functionality, reporting, usability).	Financial, asset and customer service systems are integrated or able to be fully reconciled (to provide a 'single source of truth' for all data). An information systems strategy for asset related systems is implemented and regularly reviewed. AIMS has spatial mapping capability or interface. AIMS captures remote, 'live' data from operators. More automated analysis and reporting on a wider range of information. AIMS provides renewal modelling capabilities using factors such as age, condition, criticality and performance.	All advanced AM functions are available, including asset risk assessment, predictive maintenance and renewal modelling for different level of service scenarios. Availability of 3D models to enable visual integration with data (e.g.: BIM/Digital Twin)
AM Process Management	Awareness of need to formalise systems and processes (evident in responses to interview questions).	Simple AM process documentation in place for service-critical AM activities, covers operation, maintenance and renewal activities.	Critical AM processes are identified, documented, monitored and subject to review. There is evidence that these critical AM processes are followed in practice. AM process interfaces with other teams and organisations, are defined and managed.	As for core, plus: All AM processes have been identified and prioritised. AM Process documentation implemented in accordance with the AM System to appropriate level of detail, depending on process criticality (including business process mapping or similar). All internal management systems and cross-departmental processes are aligned and managed.	As for intermediate, plus: AM processes are regularly reviewed and audited and improvements implemented. ISO certification of processes to multiple standards for large asset intensive organisations. AM System has been assessed and meets the requirements of ISO 55001. Strong integration of all management systems and cross-departmental processes within the organisation.
Outsourcing & Procurement	Procurement and service delivery practices are informal. Organisation is aware of different service delivery options (evident in responses to interview questions).	Service delivery and procurement practices clearly documented (internal and external), generally following historic approaches.	Procurement strategy/policy in place. Internal service level agreements (SLA) with the primary internal service providers, and contracts for the primary external service providers, are in place. Contract and SLA performance specifications are aligned to levels of service. Procurement and contract performance management processes are in place and regularly reviewed.	As for core, plus: Risks, benefits and costs of various outsourcing and lease/buy options considered in determining the service delivery approach. Suitably qualified roles manage procurement and contract management processes. Procurement and contract management processes are regularly audited and improvements identified.	All potential service delivery mechanisms reviewed and formal analysis carried out to identify best delivery mechanism.

APPENDIX K.1 - ASSET MANAGEMENT MATURITY FRAMEWORK

Section	MATURITY LEVEL				
	Aware 0-20	Basic 21-40	Core 41-60	Intermediate 61-80	Advanced 81-100
Asset Management Enablers					
Continual Improvement	Recognition of the need for AM improvement process, evident in responses to review questions.	Improvement actions identified and allocated to appropriate staff and progress monitored.	Current and future AM maturity assessed (gap analysis) and used to identify improvement actions. Appropriate maturity has been defined for each AM function. Identified improvement actions collated from the maturity assessment and other relevant studies and have been prioritised with input from relevant staff and management. Improvement plans identify timeframes, deliverables, resources and responsibilities and are monitored by the AM team. Improvement plans are monitored.	As for core, plus: Formal periodic monitoring of the AM improvement plan is in place with reporting to appropriate levels of the organisation, at frequencies specified in the SAMP or AMP. Major improvement actions are managed within the organisation's project management framework. Evidence of effective change management practices support AM Improvement Plan implementation. A formal audit and review framework is established.	A regular cycle of audit and maturity assessment is undertaken with actions fed back into improvement planning. KPIs for monitoring the effectiveness of AM improvement plan outcomes are reported.

City of Brampton – Corporate Asset Hierarchy

1 Corporate	City of Brampton	Brampton Library Board
2 Department	Transit Services / Public Works & Engineering Services / Fire & Emergency Services / Corporate Support Services / Community Services / Legislative Services / Planning, Building and Economic Development Services	
3 Services Areas	Transit / Stormwater Services / Transportation Services / City Support Fleet / Facilities / Fire Services / Information Technology / Cultural Services / Recreation Services / Park Services / Animal Services	Library Services

Culture and Events   Performing Arts

Facilities

Level		
Level 2 Service Program		Public Works and Engineering
Level 3 Services		Facilities

Level 4 Types of Services:

Corporate Services (City Hall & Administrative facilities)	Transit Services	Works Operations (Transportation, SW, City Support Fleet)	Parks	Fire & Emergency Services	Recreation Services	Cultural Services	Animal Services	Brampton Library

Level 5 Geographical Area

Level 6 Asset Class:

Building Components	Furniture & Small Equipment

Level 7 Discipline / Sub-Asset Class:

A-Structure	B-Shell	C-Interiors	D-Services	G-Site		Furniture	Small Equipment

Level 8 Equipment:

A-Structure	B-Shell	C-Interiors	D-Services	G-Site
A10-Foundation Walls	B10- Wall Systems	C10-Interior Construction	D10-conveying	G10-Site Improvements
A20-Footings	B20-Roof	C20-Doors	D20-Plumbing	G20-Site Drainage
A30-Floor Structures	B30-Windows	C30-Stairs	D30-HVAC & Refridgeration	G30-Mechanical utilities
A40- Roof Structures	B40-Doors	C40-Wall Finishes	D40-Fire Protection	G40- Electrical Utilities
A50- Wall Structures		C50-Floor Finishes	D50- Electrical	G50-Plumbing Utilities
A60- Unenclosed sturctures		C60-Ceiling Finishes	D60-Communication & Security	G60-Site Finishes
		C70-Life Safety	D70-Special Services	G70-Parking Utilities
		C80-Special Interiors		

Level 9 Component

Level 10 Subcomponent

Transit Services

Level 2 Service Program

FLOWER CITY
BRAMPTON.CA

Transit Services

Level 3 Services

Transit

Level 4 Types of Services

- Transit IT Infrastructure
- Licensed Vehicles
- (On Road) Transit Facilities
- Specialty Equipment
- Transit Facilities

Responsibility of Other service areas: Refer to Facility asset hierarchy

Level 5 Geographical Area

Level 6 Asset Class

- Video Wall
- SMART Bus Systems
- TruCredential Application
- Heavy Duty
- Medium Duty
- Light Duty
- Shelters
- Stops
- Conveyance Systems
- Fueling
- Stock Room
- Signage
- Communication Control Systems
- Fare Systems
- PRESTO Systems
- Maintenance/ Admin Small Equipment
- Electric Charging Stations

Level 7 Discipline/ Sub-Asset classes

- Server
- Storage/ Backup
- Trailers
- Buses
- Maintenance Trucks
- Supervisors Vehicles
- Small Pickups/ SUVs
- Conventional
- Zum
- Bike
- Sandalwood Loop
- Hoists
- Lifts
- Underground Storage
- Fueling Pumps
- Bus Stop Signs
- Terminal Signs
- Roadway/ Traffic Signs
- AVL System (Automated Vehicle Locator)
- Data Radio, Voice Radio etc.
- Cameras (Security Infrared)
- GPS Equipment
- Modem
- Transit Signal Priority-TSP
- PA Systems
- AVM System (Automated Vehicle Monitoring)
- Transit Yard Management
- Fare Box
- FareBox Probing Equipment
- Other Presto Equipment
- Presto Fare Collection Equipment
- Presto Audit Computer
- Sweepers
- Golf Carts

Level 8 Equipment

- Conventional (Diesel)
- BRT (Hybrid)
- Electric Bus
- 40' Conventional
- 40' BRT
- 60' Articulated BRT

Level 9 Component

Level 10 Subcomponent

Information Technology

Level 2 Service Program	FLOWER CITY BRAMPTON.CA	**Corporate Support Services**
Level 3 Services		**Information Technology**
Level 4 Types of Services	End User IT · IT Infrastructure	Software
Level 5 Geographical Area		
Level 6 Asset Class	PCs; Tablets & Laptops; Monitors; Plotters; Printers; Mobile Phones; Audio Visual Equipment · Servers; Storage & Backup; Wireless; Network Infrastructure; Communication Systems	Corporate Wide Software
Level 7 Discipline / Sub-Asset Class	Leased; Owned · Emergency (Part of Regional System); Non-Emergency (City owned); Radios · Switches; Inside Cabling; Outside Cabling · Storage; Backup	All Types
Level 8 Equipment		
Level 9 Component		
Level 10 Subcomponent		

City Support Fleet

Level	
Level 2 — Services Program	Public Works & Engineering
Level 3 — Services	City Support Fleet
Level 4 — Types of Services	Licensed Vehicles · Off Road Vehicles · Equipment
Level 5 — Geographical Area	
Level 6 — Asset Class	Heavy Truck · Trailers · Light Truck · Passenger · Heavy Duty · Light Duty · Small Engine

Level 7 — Discipline/Sub-Asset Classes

Heavy Truck:
- S AXLE, DUAL AXLE DUMP, FLAT BED
- TANDEM AXLE DUMPS, FLUSHER, FLAT BED
- SAXLE, D WHEELDUMP, FLAT BED, TANKER
- SPECVEHICLE, BUCK, CRANE, BODYINTERCH

Trailers:
- TRAILERS

Light Truck:
- 4X4
- PICKUPS
- VANS
- SUV

Passenger:
- CAR, STATION WAGONS

Heavy Duty:
- FRONT END LOADERS RUBBER TIRE AND CRAWLER
- LOADER BACKHOE COMBINATIONS AND EXCAVATORS

Light Duty:
- ASPHROLLERS, GRINDERS, HOTBX, CON/ASPHSAW, TAMPER
- ICE RESURFACERS
- RD MAINTEQP, SIGNBRDS, STMRS, LEAFLOADRS, COMPRES
- SIDEWALK PLOWS AND SKID STEER LOADERS
- TRACTORS FARM
- TURF EQUIPMENT MOWERS, TRIMMERS, GATORS
- Specialty Equipment (Not Classified)

Small Engine:
- AERATORS
- AUGERS
- FERTILIZER SPREADERS
- GENERATORS
- LEAF/GRASS BLOWERS
- MOWERS
- ROTOTILLERS
- MIS. CONCRETE / ASPHALT EQ.
- SNOW BLOWERS
- SWEEPERS
- TAMPERS
- TOP-DRESSERS
- TURF AND ICE EDGERS
- MIS. TURF EQ.
- MIS. EQ. NOT CLASSIFIED
- Specialty Equipment (Not Classified)

Level 8 — Equipment

Level 9 — Component

Level 10 — Subcomponent

Fire Services

Level 2 – Service Program

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Fire & Emergency Services

LEGEND

☐ Responsibility of Other service areas.

Level 3 – Services

Fire Services

Level 4 – Types of Services

- Licensed Vehicles
- Equipment (Non-vehicle)
- Fire IT
- Fire Halls & facilities

Responsibility of Other service areas:
Refer to, IT and Facility asset hierarchy

Level 5 – Geographical Area

Level 6 – Asset Class

- Front Line Licensed Vehicles and Apparatus
- Support Vehicles and Equipment
- Bunker gear
- SCBA
- Personal Firefighter Equipment
- Specialty equipment

Level 7 – Discipline / Sub-Asset Class

- Aerials
- Pumpers
- Squads
- Support Apparatus
- Cars
- Vans
- Pickup Trucks/ SUVs
- Helmets
- Particular Hoods
- Gloves
- Personal Radio / Communication Equipment
- Air Compressors
- Cranes
- Hoists
- Forklifts

Level 8 – Equipment

Level 9 – Component

Level 10 – Subcomponent

Parks Services

Level 2 Services Area

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Community Services

LEGEND
[ ] Responsibility of Other service areas.

Level 3 Services

Parks Services — — — Recreation

Level 4 Types of Services

Parks | Forestry & Horticulture | School Sites - joined City/School (2 sites) | Cemeteries | Maintenance Shed Tools | Parks Small Engine Equipment | Parks Facilities | Parks Fleet | Recreation Parks

Level 5 Geographical Area

Responsibility of Other service areas:
Refer to City Support Fleet and Facilities asset hierarchies

Recreation parks mostly responsibility of Recreation service area: Refer to Recreation asset hierarchy

Level 6 Type of Assets

Natural Heritage Lands | City and Community Parks | Neighbourhood Parks | Park around SW Ponds | Parking Lots | Right Of Ways | Street and Park Trees | Flower bed

Chinguacousy Park | Peel Village Golf Course | El Dorado Park

Level 7 Discipline / Sub-Asset Class

Baseball Diamond | Basketball Court | Track & Field

Cricket | Rectangular Field | Skateboard Park

Dog Park | Bocce Court | Batting Cages

Fitness Equipment | Sports Lighting | Shade Shelters

Playground | Splash Pad | Multi-Purpose Court

Recreational Trails – Pathways, Walkways to the park | Tennis Court | Furniture

Walls

General Turf

Local & Collector

Arterial

Level 8 Equipment

Score Boards | Fences

Furniture types here | Sport Lighting

Irrigation   *Park Lighting except Sport Lighting is under Transportation

Irrigation (for Flower bed)

Level 9 Component

Level 10 Subcomponent

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Recreation Services

Level	
Level 2 Services Areas	
Level 3 Services	
Level 4 Types of Services	
Level 5 Geographical Area	
Level 6 Type of Asset	
Level 7 Discipline / Sub-Asset Class	
Level 8 Equipment	
Level 9 Component	
Level 10 Subcomponent	

Level 2: Community Services

LEGEND: Responsibility of Other service areas.

Level 3: Recreation Services

Level 4:
- Recreation Facilities
- Recreation Software (Responsibility of Information Technology service area: Refer to IT asset hierarchy)
- Recreation Fleet (Responsibility of City Support Fleet service area: Refer to City Support Fleet asset hierarchy)
- Recreation Program Services
- Recreation Parks (Outdoor Services)

Facilities building components is responsibility of Facilities Service Area. Refer to Facilities Hierarchy – Building Components

Level 5 (Geographical Area):
- Gore Meadows
- Earnscliff
- Brampton Soccer Center
- Ken Giles
- Century Gardens
- Flower City SC
- Greenbriar
- Huttonville CC
- Knightsbridge SC
- Chingacousy Park
- Howden
- Balmoral
- Cassie Campbell
- Chris Gibson
- Jim Archdekin
- Ebenzer
- Ellen Mitchell
- Loafer's Lake
- Memorial Arena
- Norton Place Park
- Snelgrove
- Terry Miller
- Central Public School
- Doherty/Fitzpatrick House
- Mount Pleasant
- Professor Lake
- South Fletchers CC
- Victoria Park
- Ebenzer Schoolhouse
- Peel Village Golf Course
- El Dorado Park
- Chinguacousy Park

Level 6 (Type of Asset):
- Non-Program facility equipment and Furniture
- Recreation Program Equipment
- Outdoor Recreation Services Equipment

Level 7 (Discipline / Sub-Asset Class):

Non-Program facility:
- Auditorium Eq.&Furniture
- Hobby Shop Eq.&Furniture
- Snack bars & Lounge Eq.&Furniture
- Salon Eq.&Furniture
- Restaurant Space Eq.&Furniture
- Fieldhouse / Pavilion Eq.&Furniture
- Café Eq.&Furniture
- Community Rooms Eq.&Furniture

Recreation Program:
- Pools
- Seniors center
- Dock
- Arenas
- Sauna/Hot tubs
- Lacrosse Box
- Gym
- Water Feature
- Skating Rink
- Dance Studio
- Indoor Courts
- Recreation Signage
- Boats

Peel Village Golf Course:
- Greens
- Clubhouse
- Storage
- Irrigation

El Dorado Park:
- Outdoor Pool
- Rectangular Field
- Shade Shelters
- Parking Lot
- Change Rooms
- Storage Garage
- Pavillions

Chinguacousy Park:
- Skate Park
- Track & Field
- Ski Chalet
- Volleyball Court
- Playground
- Curling Club
- Tennis Court
- Recreational Trail
- Greenhouse
- Irrigation
- Animal Paddocks
- Tea House
- Rectangular Field
- Sports Lighting
- Barn
- Mini-Golf
- Parking Lot
- Concession Stand
- Shade Shelters
- Dock
- Pavillions
- Splash Pad
- Skating Rink
- Ski Hill
- Paved Building Entrances

Level 8 (Equipment):
- Pool Equipment
- Arena Equipment
- Gym Equipments
- Squash
- Racquet ball
- Paddle & Rescue Boats
- Lawn Bowling

Cultural Services

Level 2 — Service Program

- Corporate Support Services
- Community Services
- Performing Arts

LEGEND — Responsibility of Other service areas.

Level 3 — Service Area

- Culture and Events
- Cultural Services

Level 4 — Types of Services

- Fleet assets used by Cultural Services are responsibility of City Support Fleet Service Area. Refer to City Support Fleet Hierarchy.
- Cultural Services Fleet
- Cultural Services IT
- IT assets used by Cultural Services are responsibility of IT Service Area. Refer to IT Hierarchy.
- Performing Arts Facilities
- Facilities building components is a responsibility of Facilities Service Area. For Facilities hierarchy Level 6 and down not covered here refer to Facilities Hierarchy – Building Components

Level 5 — Geographical Area

- Cyril Clark Theatre
- Lester B Pearson Theatre
- Garden Square
- Rose Theatre

Level 6 — Asset Class

- Public Art
- Specialty Equipment
- Furniture
- Specialty Equipment
- Furniture
- Furniture
- Specialty Equipment
- G - Site
- Furniture
- Specialty Equipment
- For the typical UniFormat building components hierarchy not covered here refer to Corporate Facilities Hierarchy – Building Components
- C - Interiors
- D - Services
- G - Site

Level 7 — Discipline / Sub-Asset Class

- Sculpture
- Murals
- Monuments
- Conveyance Systems
- Communication Control Systems
- Theatre Equipment
- Musical Instruments
- Conveyance Systems
- Communication Control Systems
- Theatre Equipment
- Musical Instruments
- TV
- Computers
- Box Office Equipment
- Outdoor Furniture
- Signage
- Water Features
- G10-Site Improvements
- G20-Site Drainage
- G30-Mechanical utilities
- G40- Electrical Utilities
- G50-Plumbing Utilities
- G60-Site Finishes
- G70-Parking Utilities
- OTHER
- Group A, Group B, Group D, Group E
- Outdoor Furniture
- Indoor Furniture
- Conveyance Systems
- Communication Control Systems
- Signage
- IT Equipment
- Theatre Equipment
- Musical Instruments
- C10-Interior Construction
- C40-Wall Finishes
- C50-Floor Finishes
- C60-Ceiling Finishes
- C70-Life Safety
- C80-Special Interiors
- D10-Conveying
- D20-Plumbing
- D30-HVAC & Refrigeration
- D40-Fire Protection
- D50- Electrical
- D60- Communication & Security
- D70-Special Services
- G10-Site Improvements
- G20-Site Drainage
- G30-Mechanical utilities
- G40- Electrical Utilities
- G50-Plumbing Utilities
- G60-Site Finishes
- G70-Parking Utilities
- OTHER
- Group A, Group B, Group C, Group D, Group E

Level 8 — Equipment

- Front of House Audio Booth
- Control Booth
- Audio Console
- Audio Equipment (stage racks)
- ESS – Dressing Room Equipment
- Front of House Audio Booth
- Control Booth
- Audio Console
- Audio Equipment (stage racks)
- ESS – Dressing Room Equipment
- Umbrellas
- Tables
- Chairs
- Benches
- Muskoka Chairs
- Garbage Bins
- LED Screen
- Water Wall
- Fountain
- Group A — Light Standers
- Group B — Irrigation Systems
- Group D — Gate
- Umbrellas
- Couches
- Tables
- Chairs
- Tables
- Chairs
- Benches
- Garbage Bins
- Couches
- Fixed Seating Theatre
- Consoles
- Scissor Lift
- Wireless Recievers
- Corporate TV's
- Makkee Sign
- Bill Boards
- Computers
- TV's
- Front of House Audio Booth
- Control Booth
- Audio Console
- Audio Equipment (stage racks)
- ESS – Dressing Room Equipment
- Mobile Rack
- Patch Bay Rack
- Laundry Equipment
- Bar Equipment
- Grand Piano – Piano No.1
- Piano No.2 (on Stage)
- Baby Grand Piano No.3 (Studio)
- Drum
- Specialty Panels
- Hardwood Floor (Sponsor Launch)
- Rigging Equipment
- DIVA shell
- Humidifiers
- Glycol Heat Supply
- Refrigerator (kitchen)
- Boilers
- Floor Cleaning Machine (Zamboy)
- Speciality tools (mechanical room)
- Electrical Panels
- Lighting Panels
- Generators
- Fire Places
- Orchestra Pit Lift
- Service Elevators
- Passenger Elevators
- Accessibility Lift
- Group A — Street Lighting
- Group B — Irrigation Systems
- Group C — Decorative Fencing
- Group D — Access Ramp
- Group E — Garbage Bins, Fencing, Flower Beds, Trees, Parking Lots

Level 9 — Component

- TV
- Digital Banners
- Support Structure
- Granite Panels/ Finishes
- Name Plate
- Pumps
- Piping
- Electrical Equipment (integral)
- Marble Decorative Wall
- Ladies Restroom Console
- Gentlemen Restroom Console
- Mezzanine Couches
- Lobby Couches
- Oval Table (Studio)
- Round Tables
- Side Boards
- Chairs
- Curio Cabinet
- TV at the Bar side wall
- Bar Refrigerators
- Walk-in Fridges
- Mobile Bar Carts
- Bar Chairs
- Washer
- Dryer
- Sewing Machine
- Linens
- Vomitory Acoustic Panels
- Dividing Panels (Sponsor Launch)
- Acoustic Panels (Studio 2)
- Boiler Circulation Pump

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Library Services

Level 1 Corporate	FLOWER CITY BRAMPTON.CA	**Brampton Library Board**

LEGEND

Responsibility of Other service areas.

Level 2 — Service Program

Level 3 — Service Area: **Library**

Level 4 — Types of Services:
- Facilities
- For Fleet hierarchy refer to City Support Fleet Hierarchy — Fleet
- Furniture and Equipment
- Media Collections
- Library Software

Level 5 — Geographical Service Area:

Owned
- Four Corners Branch
- Cyril Clark Branch

Leased
- South Fletchers Branch
- Mount Pleasant Village Branch
- Springdales Branch
- South West Branch
- Gore Meadows Branch

Temporary
- Glidden (Admin Staff)
- Brampton Ski Chalet

Level 6 — Asset Class:

For Hierarchy Level 6 Facilities building components refer to Facilities Hierarchy – Building Components

- Furniture
- Shelving
- Computer Hardware
- RFID Hardware
- Library specific Computer Software
- Print Materials
- Audio & Visual Materials
- Genealogy
- Local History

Level 7 — Discipline / Sub-Asset Class

Level 8 — Equipment

Level 9 — Component

Level 10 — Subcomponent

Animal Services

Level 2 Service Program	Level 3 Services	Level 4 Types of Services	Level 5 Geographical Area	Level 6 Asset Class	Level 7 Discipline / Sub-Asset Class

Level 2 Service Program

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Legislative Services

LEGEND

Responsibility of Other service areas.

Level 3 Services

Animal Services

Level 4 Types of Services

Responsibility of IT service area: Refer to IT asset hierarchy

Animal Services IT

Responsibility of City Support Fleet service area: Refer to City Support Fleet asset hierarchy

Animal Services Fleet

Animal Facility

Equipment

Level 6 Asset Class

Responsibility of Facilities service area: Refer to Facilities asset hierarchy-Building components

Building Components

Primary Enclosure (Dog Area)

Program Equipment

Medical Equipment

Furniture

Level 7 Discipline / Sub-Asset Class

Animal Handling Equipment

Cages/Crates

Janitorial Equipment

Appliances

Pooled Furniture

Level 8 Equipment

Level 9 Component

Level 10 Subcomponent

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Appendix K.3

Financing Strategy: Revenue Analysis Assumptions

Revenue Source	Analysis Assumptions
Infrastructure Levy (2%)	- The forecast assumes the existing dedicated Infrastructure Levy is maintained over the planning period. This means the dedicated 2% levy is calculated each year on the previous year's taxation revenue. - The increase in contribution will be relative to how much the 2% levy adds to the base (Example: 2025 estimated increase over 2024 base is approximately $11.6 million). 2023 Total Contribution = **$82.7 Million**. 2024 Total Contribution = **$83.3 Million**. - Assumption beyond 2024 = the reserve contribution of $83.3 Million in 2024 will increase each year the 2% dedicated levy continues to be in force throughout the period.
Transit Levy (1%)	- The forecast assumes the existing dedicated Infrastructure Levy is maintained over the planning period. This means the dedicated 1% levy is calculated each year on the previous years' taxation revenue. - The increase in contribution will be relative to how much the 1% levy adds to the base (Example: 2025 estimated increase over 2024 base is approximately $5.8 million) - It is not assumed that the entire transit Levy is allocated to R&R activities. Approximately 50% of the annual levy is directed to fund the BTE share of net new growth-related busses). 2023 Total Contribution = **$14.6 Million**. 2024 Total Contribution = **$14.9 Million**. - Assumption beyond 2024 = the base of $14.9 Million will increase each year the 1% dedicated levy continues to be in force throughout the period.
Growth in Tax Levy Base	- The forecast assumes a net growth in tax levy revenues (net of special purpose levies) at 1.8% each year to account for general growth in the base from new residential and non-residential development. - Revenues are in constant $2023 and does not make consideration for a change in reassessment or inflation. - Recognizing this growth is higher than recent years, it is predicated on the *Brampton Plan* which would indicates a more significant growth rate than recently observed. If the growth doesn't occur, there is likely a deferral of key capital projects to maintain affordability which would ultimately impact the City expenses.

Revenue Source	Analysis Assumptions
Stormwater User Fees	• Average annual revenues from the dedicated user fees are assumed at **$24.4 million** per annum based on currently budgeted SW fee collection and allowance for annual revenue growth of 2.2% due to new billing units associated with growth. • This amount is set equal to average annual costs and therefore considered to be revenue neutral.
Federal Gas Tax	• 2023 = Equal to **$34.5 Million** and 2024 is estimated at **$36.1 Million** which is generally consistent with 5-year average (omitting the one-year top-up and COVID relief funding). • Assumption beyond 2024 = assumed to increase relative to population growth as gas tax monies usually are distributed based on population every few years. • Entire amount is assumed to be allocated to R&R activities in this Service Area AMP (consistent with current practice).
Provincial Gas Tax	• Assumed to offset transit-operating costs. • These funds are not assumed for capital repair and replacement activities in the forecast period
Permanent Transit Funding Stream	• Estimted at approximately $89.7 million over the next 10-years which will be allocated to capital asset repair and replacement activities for Transit. • Additional funding received is assumed to be directed to growth projects. • Other one-time funding for other transit electrification projects or higher-order transit projects is assumed to be used to fund the first round capital
DCs	• Development Charges are used to fund first round growth-related infrastructure and any existing funds in these obligatory accounts are not considered for asset management purposes.
Existing Reserves	• Approximately **$63.9 Million** in existing reserve funds are considered and applied towards funding asset repair and replacement activities. Only certain capital related reserves are considered in this study and other dedicated and special purpose reserves are not considered to be "available" for capital asset Repair and Replacement. • This total is allocated over 3-years • Reserve fund balances applied in this Service Area AMP are as of year-end 2022 (as outlined in the 2024 budget).
Existing Taxation & User Fee Revenues	• Approximately **$231.7 Million** per annum in existing capital related operating and maintenance costs, which are currently funded through existing taxation and user fee revenues is assumed to remain constant over the period to maintain the current Levels of Service. • This cost relates to capital related operating and maintenance costs to maintain City infrastructure in a state of good repair and does not account for general operating costs to deliver the service itself (i.e. staff for programming). • It is assumed that any new asset acquisitions required to meet the proposed levels of services would result in increased operating and maintenance costs that would need to be absorbed by the City and captured in the full life cycle model.

Financing Strategy: Assumptions Used to Determine Repair and Replacement Activities
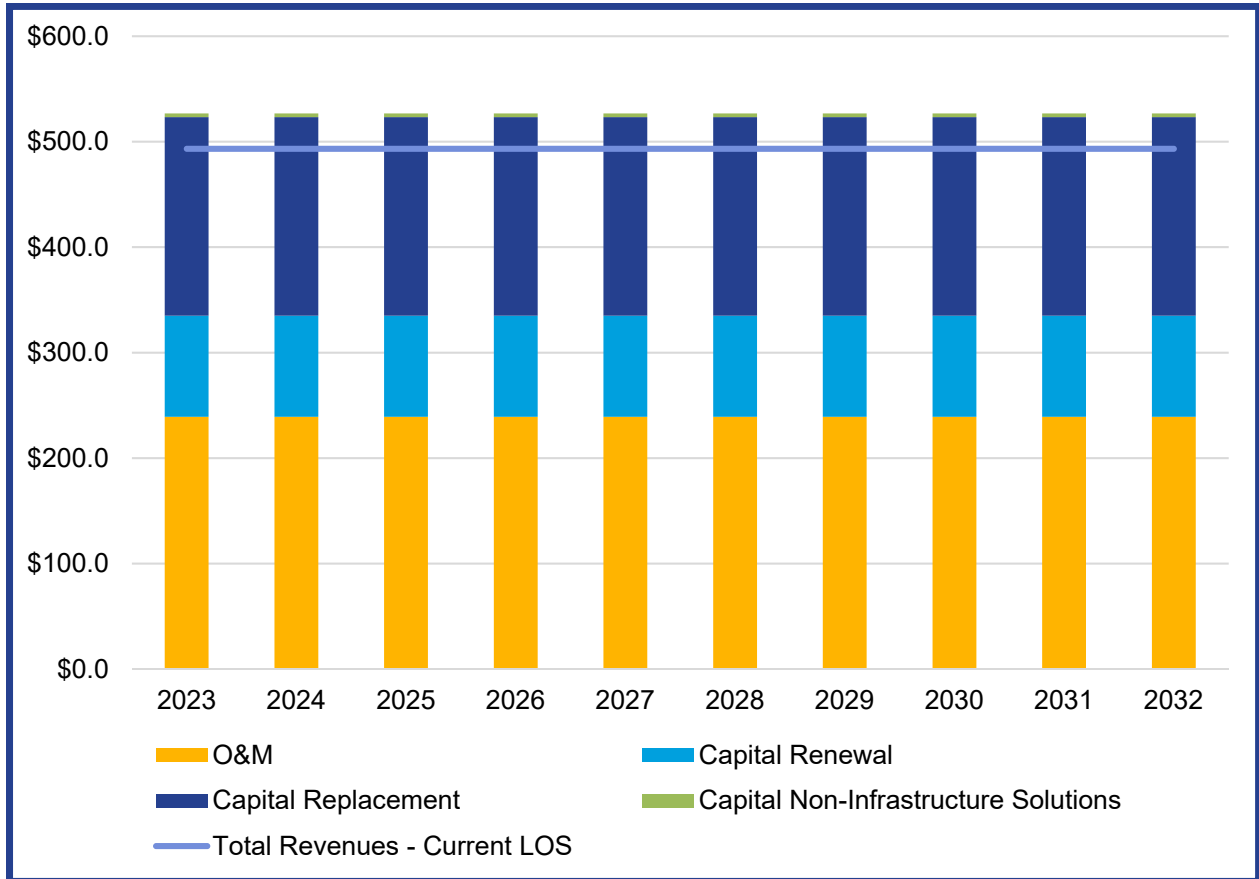
Service	Methodology
Transportation	**Roads:** Annual provision accounts for the asset renewal needs to maintain assets above PCI thresholds by road type. In addition, the annual provision also accounts for road replacement activities based on best practices from other communities (average 90-year replacement). **Bridges**: Annual provision accounts for both Bridge/Culvert Reconstruction costs and regular asset rehabilitation expenditures over the planning period. **Street Lighting:** Annual provision accounts for the rehabilitation and replacement of both Poles and Brackets over the planning period. **Sidewalks, Traffic Signals:** Annual provision accounts for the rehabilitation and replacement of assets over the planning period. **All Other Assets:** Annual provision accounts for the replacement of assets over the planning period based on reconstruction cost.
Stormwater	**Stormwater Management Ponds:** Average annual provision based on the total replacement value of ponds spread equally over the estimated useful life. **All Other Assets:** Annual provision accounts for the replacement of assets at the end of their estimated useful life over the planning period based on the age of the asset.
Facilities	The calculated annual provision is based on asset renewal needs based on BCA and BDC information (2022-2030). Annualized for 10 years. The total investment over the 25-year period is illustrated on an annual basis. Complete asset replacement is not considered in the calculation model.
Transit	**Heavy Duty Vehicles (Buses):** Age-Based Replacement accounts for both regular Bus Refurbishment costs *and* regular asset replacement (at 18 years) over the planning period. The refurbishments include engine replacements, transmission changes, general refurbishments, etc. **Support Fleet, Transit IT Infrastructure:** Run-to-failure approach. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category. **Transit Facilities (On-Road) and Specialty Equipment:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset.
IT	**Computers, Mobile Phones, Audio/Visual Equipment, Servers, Storage and Back-Up, Wireless Assets, and Network Infrastrcuture:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. **Computer Monitors, Cable Plants, and Software:** Run-to-failure approach. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category. **Communication Systems:** Provision for telephone systems use an age-based replacement approach. The annual replacement provision for the remaining assets is a run-to-failure approach, where the average annual budget allocation is used.

Service	Methodology
City Support Fleet	**Licensed Fleet:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. For these assets, the esitmed useful life has been adjusted based on the mileage of each vehicle. **Off-Road Vehicles, Fleet Equipment, and Service Centre Equipment:** Run-to-failure approach. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category.
Fire	**SCBA, Bunker Gear, and Front Line Licensed Vehicles & Apparatus:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. **Support Vehicles & Equipment and Specialty Equipment:** Condition-based Replacement. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category. **Spare Vehicles:** No annual provision requirement has been identified for this asset category. In most cases, spare vehicles are simply front line vehicles & apparatus that were replaced due to their age, but remain in operable condition if required.
Parks	**Parking Lots, Parks, Park Furnishings, Skate Parks, Outdoor Box Arenas, Tracks, Dog Parks, and Flower Beds:** Run-to-failure approach. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category. **Fitness Equipment, Playgrounds, Players Benches, Bleachers, Splash Pads & Outdoor Pools:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. **Pathways:** Age-based Replacement. Since some replacement is addressed through the parks operating budget already, 50% of total calculated annual provision for the replacement of assets over the planning period. **Shade Structures:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. Extended the life of non-wood shelters to 40 years. **Sportsfields:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. For the sake of increasing accuracy, adjustements were made to the SOLI replacement values of the sportsfield's components including the lighting, backstops, fencing. **Tennis Courts:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. The replacement value of tennis courts was modified to $120,000 each. **Multi-Purpose Courts:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. The replacement value of lighting was modified to $50,000 per court, intended to reflect the cost of relamping. **Trees:** Modified budget-based replacement. Annual need calculated using assumed budget of $1,575 per tree at 4,000 trees per annum.

Service	Methodology
Recreation	**Spray Pads & Pools, Fitness Equipment, and Skateboard Parks:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age, replacement value, and expected useful life of each asset. **Tennis Courts:** Assets can be renewed through lifecycle intervention. Annual renewal needs determined to be 60% of the age-based replacement need. **Major Equipment:** Replacement need for all ski lifts, snowmaking systems, seasonal tennis bubble, tennis vestibule, permanent tennis bubble, and the Ken Giles Obstacle Court are determined based on the age-based replacement need. Replacment need for all other assets in this category are based on the run-to-failure approach, using the average annual budget allocation. **Artificial Rinks & Tracks:** Replacement need for Chingacousy Park Refrigerated Rink and all running tracks are determined based on the age-based replacement need. Replacment need for all other assets in this category are based on the run-to-failure approach, using the average annual budget allocation. **General Equipment and Furniture:** Run-to-failure approach. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category.
Cultural Services	**Public Art:** Assumes art will not be replaced and therefore no replacement need is identified. Average annual spend on this asset category is assumed to be entirely related to the renewal of assets. **Outdoor Equipment, Specialty Equipment, and Furniture:** Run-to-failure approach. Annual requirements for the replacement and renewal needs of assets is determined based on the average annual budget allocation towards replacements of each asset category.
Library	**Furniture & Equipment and Media Collections:** Run-to-failure approach. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category. **Library Software:** Age-based Replacement. Annual provision for the replacement of assets over the planning period is based on the age and replacement value of each piece of software.
Animal Services	**Equipment:** Run-to-failure approach. All assets classified as equipment for this service area. Annual requirements for the replacement of assets is determined based on the average annual budget allocation towards replacements of each asset category.

Financing Strategy: Funding and Cost Projections

Projection of Annual Costs and Revenues to Meet Current Level of Service

Legend:
- O&M
- Capital Renewal
- Capital Replacement
- Capital Non-Infrastructure Solutions
- Total Revenues - Current LOS

Projection of Annual Costs and Revenues to Meet Current Level of Service ($Millions)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
O&M	$239.1	$239.1	$239.1	$239.1	$239.1	$239.1	$239.1	$239.1	$239.1	$239.1	**$2,391.5**
Capital – Renewal	$95.8	$95.8	$95.8	$95.8	$95.8	$95.8	$95.8	$95.8	$95.8	$95.8	**$958.0**
Capital – Replacement	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	**$1,882.3**
Capital – Non-Infrastructure Solutions	$3.5	$3.5	$3.5	$3.5	$3.5	$3.5	$3.5	$3.5	$3.5	$3.5	**$34.6**
Total Expenditures – Current LOS	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$526.6**	**$5,266.3**

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Average Annual Revenues - No Growth	$453.8	$453.8	$453.8	$453.8	$453.8	$453.8	$453.8	$453.8	$453.8	$453.8	**$4,537.6**
Average Annual Revenues - Growth	$39.5	$39.5	$39.5	$39.5	$39.5	$39.5	$39.5	$39.5	$39.5	$39.5	**$395.0**
Total Revenues - Current LOS	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$493.3**	**$4,932.6**

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Infrastructure Gap	$33.4	$33.4	$33.4	$33.4	$33.4	$33.4	$33.4	$33.4	$33.4	$33.4	**$333.8**

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