Staff Report for Committee of the Whole Meeting

Date of Meeting: May 29, 2024
Report Number: SRIES.24.015

Department: Infrastructure and Engineering Services
Division: Infrastructure Delivery

Subject: SRIES.24.015 2024 Asset Management Plan

Purpose:

The purpose of this report is to obtain approval of the City's 2024 Asset Management Plan and updated Strategic Asset Management Policy to establish compliance with Ontario Regulation 588/17, Asset Management Planning for Municipal Infrastructure (O. Reg. 588/17). The 2024 Asset Management Plan will also inform the Capital Sustainability Steering Committee and support the development of the City's 2025 Capital Budget and Forecast.

Recommendation(s):

a) That Staff Report SRIES.24.015 regarding the 2024 Asset Management Plan be received.

b) That the City's 2024 Asset Management Plan be approved (Attachment A).

c) That the City's updated 2024 Strategic Asset Management Policy be approved (Attachment B).

d) That the 2024 Asset Management Plan and updated 2024 Strategic Asset Management Policy be posted on the City's website and be submitted to the Ontario Ministry of Infrastructure.

Contact Person:

Steve Tsenis, Manager, Corporate Asset Management

Bob Levesque, Director, Infrastructure Delivery

Report Approval:

Submitted by: Paolo Masaro, Commissioner, Infrastructure and Engineering Services

Approved by: Darlene Joslin, City Manager

All reports are electronically reviewed and/or approved by the Division Director, Treasurer (as required), City Solicitor (as required), Commissioner, and City Manager. Details of the report's approval are attached.

Background:

The City is continuously improving its evidence-based asset management planning capabilities to ensure proactive maintenance and strategic investments in assets, thereby supporting reliable services for the community.

The City owns a wide range of infrastructure assets that play a vital role in delivering essential services to the community. Since the early 1980s, Richmond Hill has experienced significant growth. To accommodate that growth, infrastructure such as roads, parks, facilities, and underground networks that carry drinking water, stormwater and wastewater were constructed. Other supporting assets such as fleet and equipment were also acquired to support service delivery. Managing these infrastructure assets requires robust asset management processes, systems and plans that are focused on understanding and planning for timely renewals through informed investment decisions. As part of this, the City has been continually undertaking and enhancing the condition assessments of its assets and proactively investing in them to ensure they provide reliable services for the community.

The 2024 Asset Management Plan includes the results from all of the City's ongoing asset condition and technical assessments, the leveraging of innovative technologies, and utilization of best available information and processes. The 2024 Asset Management Plan is also the result of recent advancements in the City's corporate asset management planning capabilities, including the enhancement of the City's internally developed and maintained Enterprise Asset Management System (EAM). This plan is the third major corporate asset management report in the past three years and represents the culmination of all the City's continuous improvements in asset management.

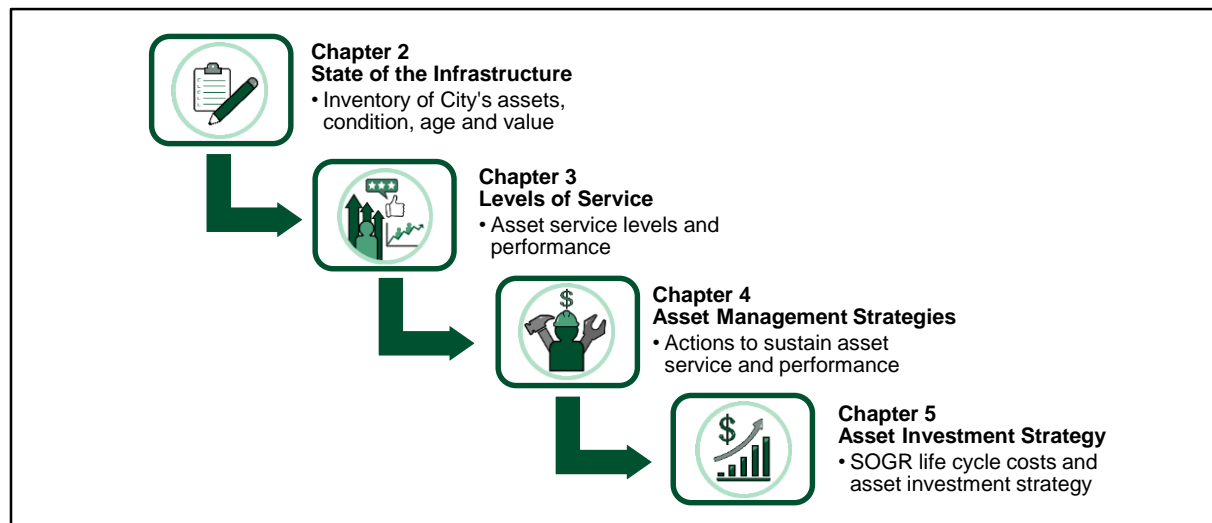Figure 1: The City's Advancement in Corporate Asset Management
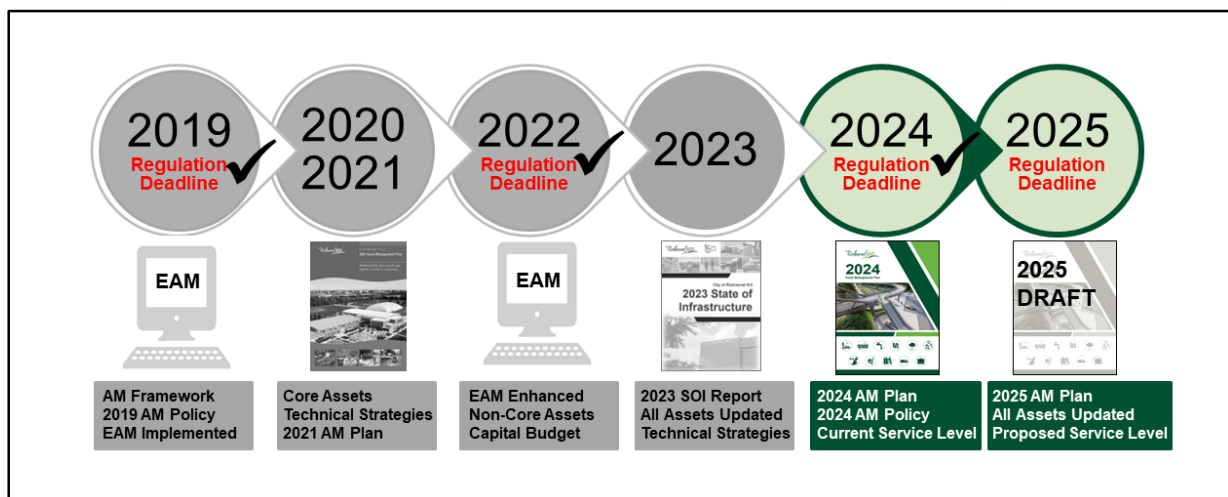
The 2024 Asset Management Plan includes an assessment of the City assets. It achieves compliance with O. Reg. 588/17, informs the City's Capital Budgeting Process and supports the City's strategic priorities and upper-level government funding requests.

The 2024 Asset Management Plan includes an assessment of City-owned assets' State of Infrastructure, their current Levels of Service and performance, the prioritized capital renewal actions through the Asset Management Strategies, and a suggested Asset Investment Strategy for the state of good repair (SOGR) of existing assets.

Figure 2: Scope of the 2024 Asset Management Plan

**Chapter 2
State of the Infrastructure**
• Inventory of City's assets, condition, age and value

**Chapter 3
Levels of Service**
• Asset service levels and performance

**Chapter 4
Asset Management Strategies**
• Actions to sustain asset service and performance

**Chapter 5
Asset Investment Strategy**
• SOGR life cycle costs and asset investment strategy

The Provincial O. Reg. 588/17 defines specific asset management reporting requirements and deadlines that all Ontario Municipalities must achieve over multiple phases. The City has previously achieved compliance with phase 1 and phase 2 of the regulation, by having an approved 2019 Strategic Asset Management Policy and 2021 Asset Management Plan respectively.

Phase 3 of O. Reg. 588/17 requires that all municipalities must have a Council approved Asset Management Plan by July 1, 2024 that includes an assessment of its assets (state of infrastructure), their current Levels of Service, asset Life Cycle strategies along with a forecast of investment needs (treatment, timing, and costs), consideration of risk including climate change, and growth-related capital forecasts and estimated operating costs.

Given the scope and content of the City's 2024 Asset Management Plan, the City will achieve compliance with the phase 3 (July 1, 2024) deadline in O. Reg. 588/17 upon Council approval of this plan. A consultant was retained that completed a peer review of the City's 2024 Asset Management Plan and confirmed it includes all the requirements that achieves compliance with phase 3 (July 1, 2024) of O. Reg. 588/17.

Also, upper levels of government require municipalities to have approved asset management plans to apply for and obtain grant funding, including the Canada Community Building Fund (formerly Federal Gas Tax) among others. Having this 2024 Asset Management Plan approved by Council will continue to support the City's upper-level grant funding requests and allocations.

The O. Reg. 588/17 also requires that all Ontario Municipalities must review and update their Strategic Asset Management Policy at least once every five years. The City's previously approved Strategic Asset Management Policy was updated to reflect the City's evolving business processes, policies and overarching plans since that time. The updated 2024 Strategic Asset Management Policy provides fundamental guiding principles for the City's corporate asset management planning approach. The updated 2024 Strategic Asset Management Policy is attached to this report, and once approved by Council, will also satisfy this regulatory requirement.

Figure 3: Overview of O. Reg. 588/17 Requirements and Timeline
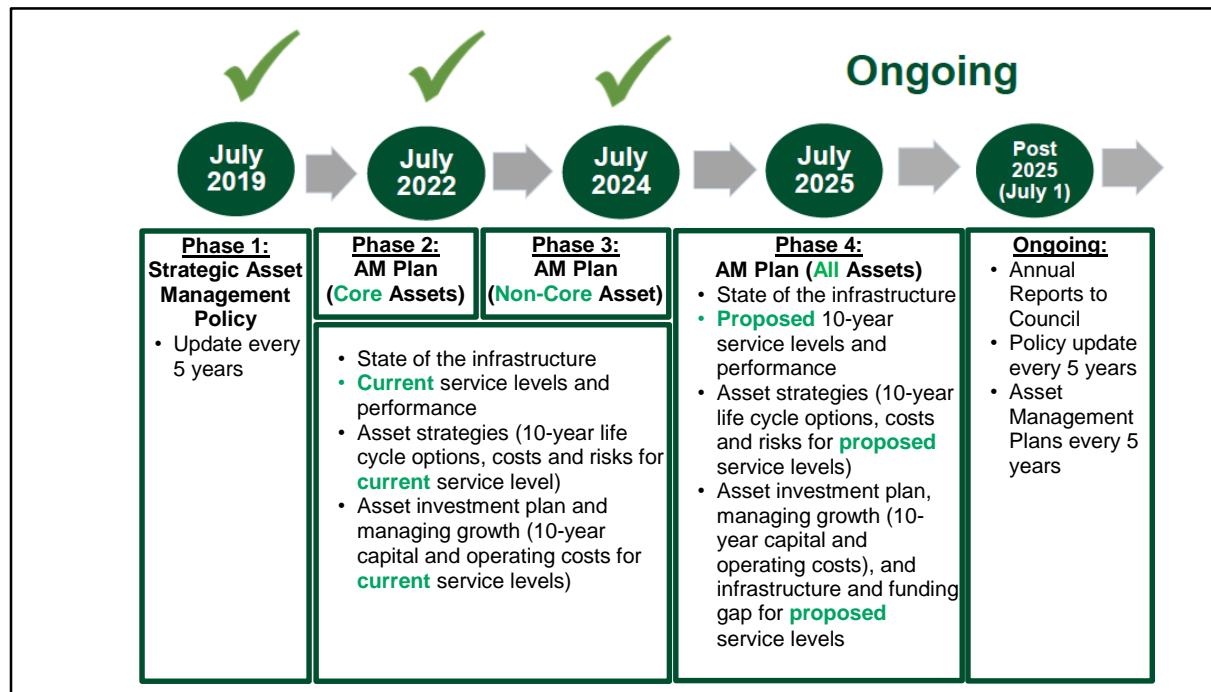
The City's assets have an estimated replacement value of $11.4 billion and are on average in Good to Very Good condition but will require ongoing investments to maintain them to sustain reliable services.

To understand the relationship between the City's assets and the services they provide, the City's assets were categorized under the following eleven community services (i.e. asset management hierarchy). This provides a line of sight and understanding of how investment in assets positively impacts services for the community.

Figure 4: City-owned Assets by Service (Asset Hierarchy)
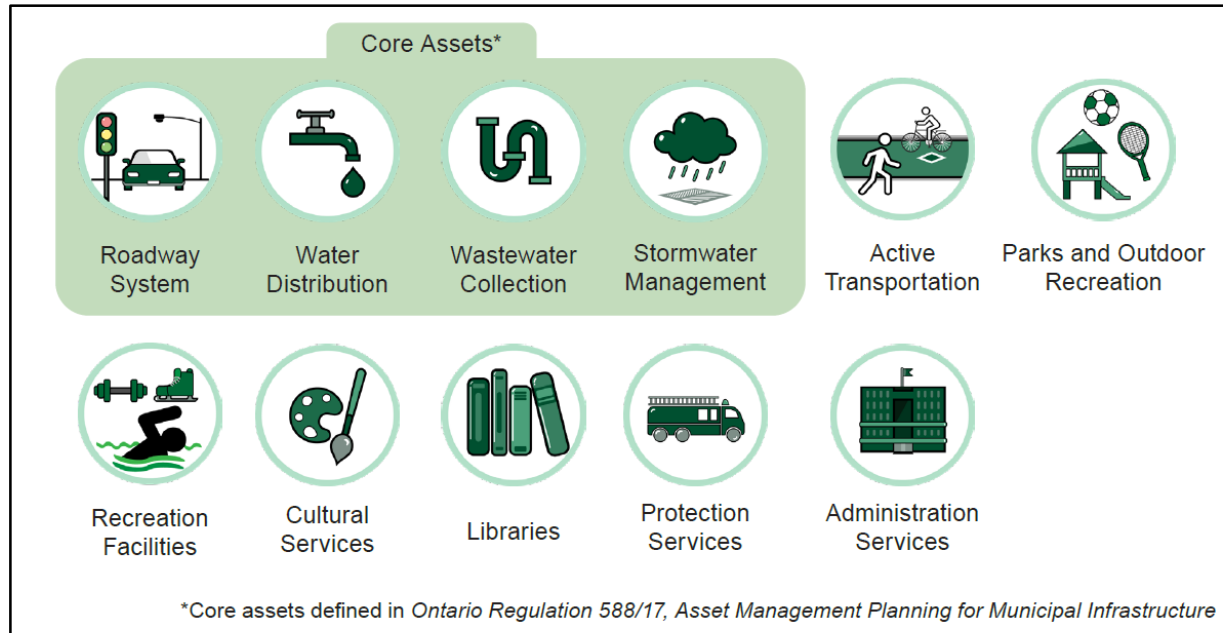
Based on the assessment of the City's infrastructure assets through the 2024 Asset Management Plan, they have an estimated 2024 replacement value of $11.4 billion, which represents a $2.2 billion or 24% increase over 2023 ($9.2 billion). This increase is due to:

- Cost pressures related to price escalations and market challenges ($2.0 billion); and

- Net new assets added to the City's inventory ($0.2 billion).

The overall average condition of the City's infrastructure assets in 2024 remained in Very Good (letter grade A), which is the same overall average condition as in 2023. The City's assets are also generally newer when compared to their estimated service lives. These results are summarized in the following Figure 5 below.

Figure 5: State of the City's Infrastructure
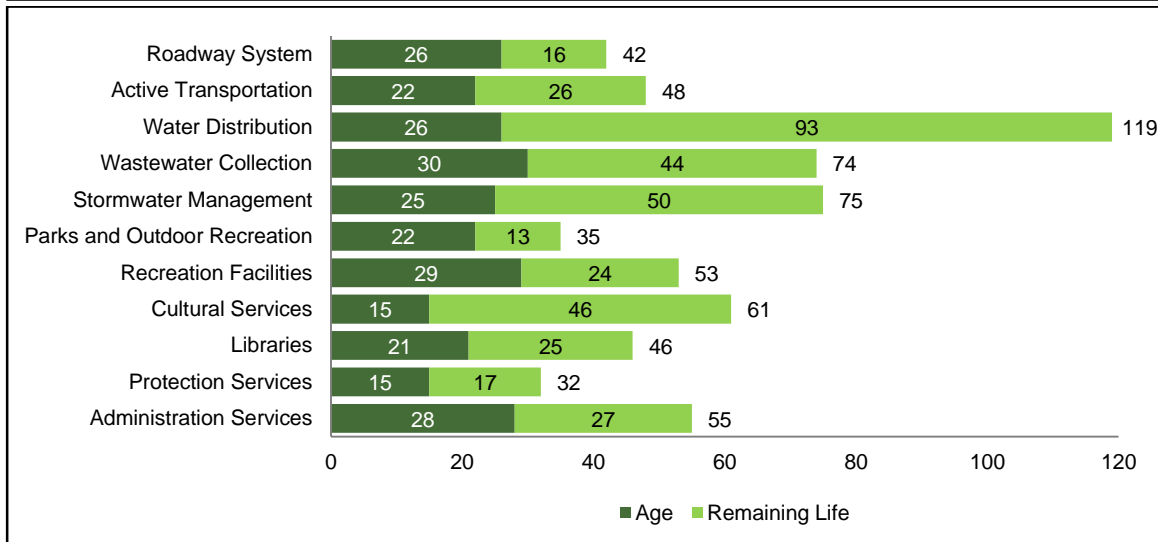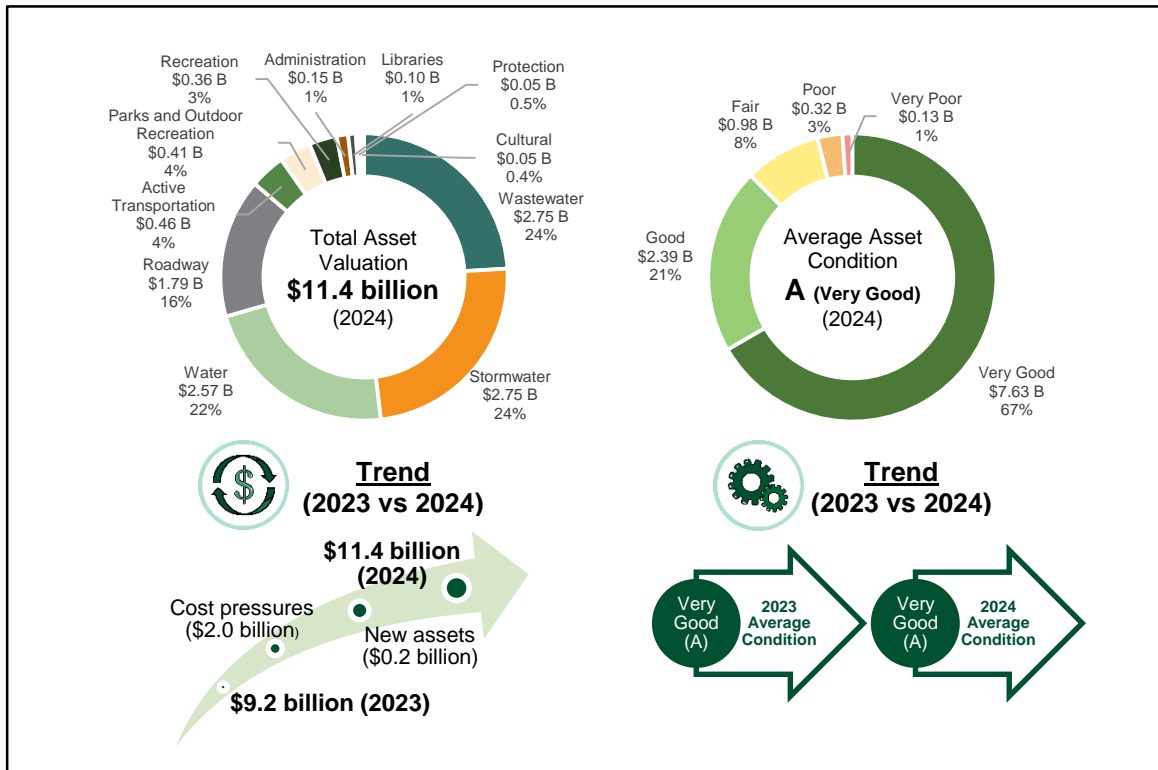
Although the majority of the City's assets are in Good to Very Good condition and are relatively young, ongoing investments will be required to maintain them as they deteriorate over time. Assets in Fair, Poor, and Very Poor will require rehabilitation and or replacement. As new asset inventories grow over time and yearly inflationary pressures continue, future renewal needs will gradually increase. Understanding the City's State of Infrastructure was the first step in the development of asset management plans and investment strategies.

**The City proactively undertakes ongoing asset condition assessments to identify asset renewal needs.**

The City proactively and continually assesses the condition of its assets using various technical condition assessments that are specific to each asset's function and characteristics. Generally, condition assessments involve monitoring and inspecting the assets to determine the degree of deterioration and/or deficiencies, the functioning of the asset relative to its design, any potential impacts to service, and age relative to its estimated service life. Examples would include inspecting roads with technology that collects field data to analyze and rate pavement condition based on a variety of technical criteria, closed circuit television inspections of sanitary and storm sewer pipes to identify structural defects and building condition assessments for the City's facilities. Based on these condition assessment results, assets receive a condition grade and the appropriate maintenance, repair, rehabilitation and/or replacement needs and timing are identified. This ensures there is a proactive plan for renewal of assets so they can continue to provide services to the community.

The City employs a number of evidence-based life cycle treatments on a continuous basis to maintain assets and maximize their value.

There are numerous different scheduled inspections, maintenance actions, and repair activities that continually occur to ensure that Richmond Hill's assets perform reliably. These actions help maintain the City's assets, so they do not fail prematurely and continue to perform well throughout their service life. Once these assets have deteriorated and reached the end of their life, the City then undertakes major capital rehabilitations, reconstructions and or replacements of them, which are approved and funded through the City's Capital Budget. These are identified from the ongoing technical condition assessments undertaken across the City. Based on these various treatments, capital life cycle strategies were also developed and incorporated into the City's EAM that describe the deterioration of assets over their life and the required capital treatments and costs to address them. These strategies reflect the City's current practices as well as recommended treatments informed by the technical condition assessments, expert engineering principles and industry best practices. The 2024 Asset Management Plan includes complete descriptions of the life cycle activities and capital treatments undertaken by the City for all of its assets.

Figure 6: Life Cycle Strategies
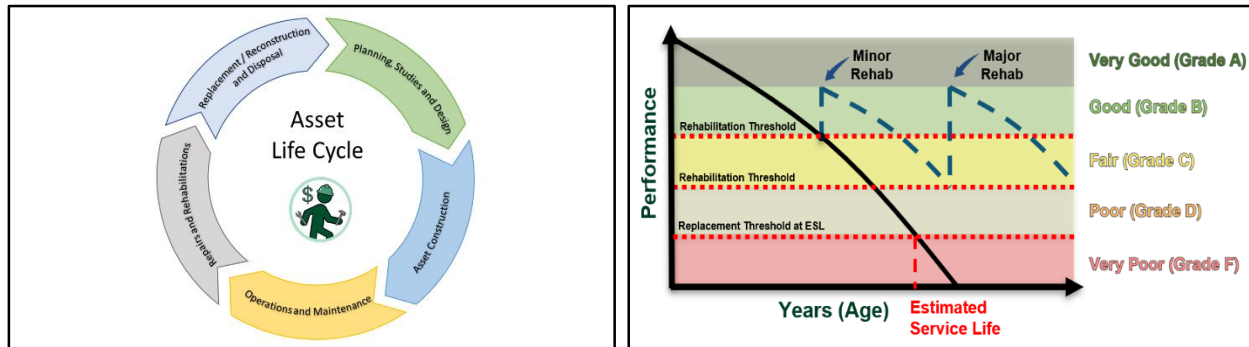
The prioritization of the suggested capital renewal needs in the 2024 Asset Management Plan is facilitated by the Corporate Asset Management Risk Framework within the Enterprise Asset Management (EAM) system. This supports guiding investments to where they are needed the most.

A Corporate Asset Management Risk Framework was developed and implemented into the City's EAM. The Framework assesses and quantifies the potential likelihood of asset failures and asset criticality to estimate the risk exposure of the City's assets using specific qualitative and quantitative metrics. Through this Framework, the EAM computes a total risk score for the City's assets and identifies them as either Very Low, Low, Medium, High or Very High potential risk.

Figure 7: The EAM Corporate Asset Management Risk Framework
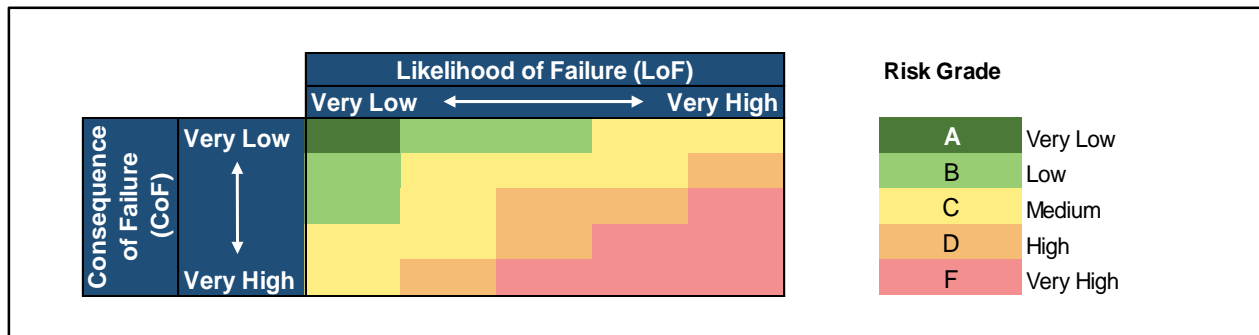
This framework allows for the consistent evaluation and comparison of all City assets to support the prioritization of the suggested asset life cycle investment needs to where they are needed the most given limited funding. Overall, the Corporate Asset Management risk profile for the City's assets is on average Very Low (Grade A), which is further detailed in the 2024 Asset Management Plan.

Figure 8: The EAM Corporate Asset Management Risk Profile of the City's Assets
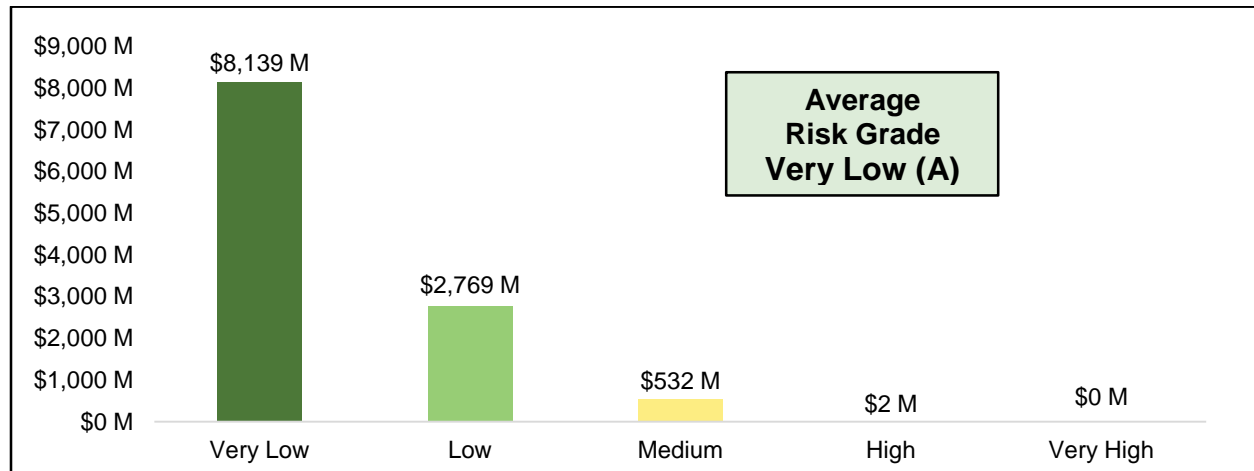
A Corporate Asset Management Level of Service (LOS) Framework was developed to evaluate the condition-based performance of the City's assets. This Framework shows that the City's assets are currently performing as intended in support of reliable community services.

Levels of Service (LOS) are key business drivers that play an important role in asset management planning. Understanding how assets are performing and the impact on the services they are supporting can inform important investment decisions. In response to O. Reg. 588/17 and evolving City services, a Corporate Asset Management LOS Framework was developed. The framework captures the mandated LOS measures required in O. Reg. 588/17, the City's operational business needs and the vision for Richmond Hill derived from master plans and studies. It includes overarching strategic LOS, community-based LOS, technical-based LOS and current measures and performance. It attempts to provide that line of sight from the LOS that the City intends to deliver through to the day-to-day activities carried out by staff to manage assets to realize strategic priorities and master plan visions.

Figure 9: The Corporate Asset Management Level of Service Framework
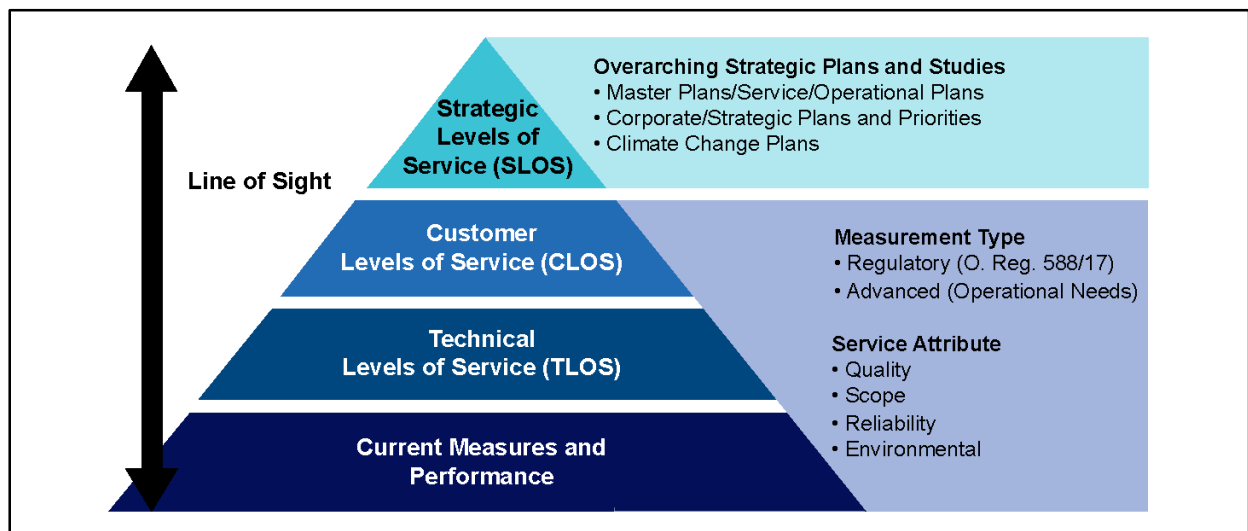
The 2024 Asset Management Plan includes complete listings and descriptions of the City's key asset management-related LOS measures along with their current performance. The current performance results demonstrates that the City's assets are generally on average performing as intended and are supporting reliable services to the community.

Financial/Staffing/Other Implications:

The 2024 Asset Management Plan proposes a gradual increase in annual investments over time for asset maintenance, starting from 2025 to 2051. This approach aims to address infrastructure backlogs and ensure assets are maintained at current performance levels over the future while promoting financial sustainability.

While there are no immediate financial impacts from this 2024 Asset Management Plan, it does provide an asset stewardship plan for maintaining City assets at current acceptable levels. By utilizing the state of the City's infrastructure (e.g. condition), life cycle strategies (e.g. treatments), levels of service (e.g. performance) and risk framework (e.g. prioritization), the 2024 Asset Management Plan includes a suggested state of good repair (SOGR) asset investment plan. The scope of the investment plan included:

- Focusing solely on existing SOGR infrastructure "like for like" needs (growth-related asset investments are informed from the City's various master plans and studies);

- Conducting the analysis from 2024 to 2051 (i.e. over a 28-year time horizon), so all existing assets would be compared over the same planning forecast as the City's master plans and studies. This allows for a consistent analysis for facilitating a long-term strategy for the City's assets;

- Identifying the infrastructure backlog of asset needs, which represents the past overdue and current year (2024) rehabilitation and replacement life cycle asset needs;

- A phased-in annual asset investment plan that would maintain their current condition-based Levels of Service by 2051 as they are today;

- Consideration of the City's recently approved 2024 Capital Budget and Forecast, including the SOGR approved capital projects and their scope, timing and costs. This was used to approximate an appropriate starting level (i.e. 2024) of asset investment expenditures from which the rest of the projected asset investments would build from; and

- Estimating the potential infrastructure gap, which is the difference between the EAM's suggested annual phased-in infrastructure investment needs as compared to the approximate 2024 asset investment starting level determined from the City's approved 2024 Capital Budget.

Based on the results of the analysis, the 2024 Asset Management Plan identified that:

- There is currently a $284 million infrastructure backlog of immediate asset renewal needs;

- There is approximately an annual average of $80 to $87 million of ongoing SOGR asset needs from 2024 to 2033 and $145 to $173 million from 2034 to 2051;

- Given the significant financial challenges that addressing this need immediately would pose, phasing in the SOGR investment expenditure levels over time (2024 to 2051) is suggested. The initial SOGR expenditure is suggested to increase from $57 million in 2024 by an estimated annual average of about $4.6 to $6.1 million (in today's dollars). Of this, it is estimated that $0.4 to $0.6 million would be rate-supported for water and wastewater and $0.5 to $0.8 million for stormwater management. The remainder ($3.7 to $4.7 million) is for non-rate supported (i.e. property tax). There is an additional annual provision of $3 million for stormwater pond rehabilitations, and $0.3 million for street and park tree replacements due to storms and invasive species; and

- This suggested approach is estimated to address the infrastructure backlog and maintain asset condition-based Level of Service by 2051.

Figure 10: Suggested SOGR Asset Investment Strategy – All Services ($ millions)
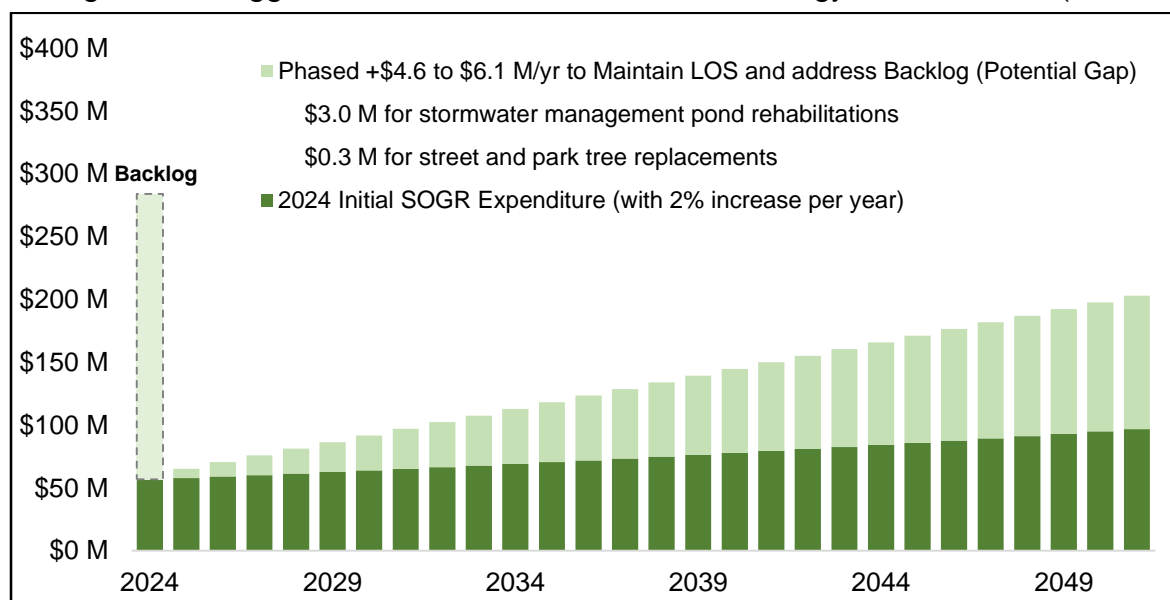
This suggested strategy provides for the base minimum "like for like" to address renewal needs for the City's existing assets. If new growth assets and/or enhancements to the City's existing assets are required (e.g. achieving net zero emissions for City Facilities by 2050), these would be additional investments needed over and above this base minimum "like for like" approach. Also, if it is desired for the infrastructure backlog to be addressed sooner or stretched out further, and/or for LOS to be changed, there would be additional or less infrastructure investment expenditures needed.

Proposed levels of service will be developed and included in the 2025 Asset Management Plan to help guide the required investments to achieve the future desired performance of assets.

To comply with the next phase 4 of O. Reg. 588/17 (July 1, 2025), proposed LOS will be developed and included in the future 2025 Asset Management Plan. Through this upcoming exercise, further insights into how much asset investments will be needed to achieve the City's desired LOS will be better understood. As such, proposed LOS are not included in this 2024 Asset Management Plan but will be further developed and reported in the City's upcoming 2025 Asset Management Plan.

The suggested State of Good Repair (SOGR) Asset Investment Strategy in the 2024 Asset Management Plan will be provided to the City's Capital Sustainability Steering Committee (CSSC) for consideration in developing the 2025 Capital Budget and Forecast.

The suggested phased-in Asset Investment Strategy for the City's existing SOGR assets in this 2024 Asset Management Plan will be presented to the Capital Sustainability Steering Committee (CSSC) for consideration in the development of the upcoming 2025 Capital Budget and Forecast. Key considerations will include balancing the infrastructure backlog needs, evolving asset conditions over time, identifying the appropriate service levels, managing cost pressures, factoring available sources of financing, minimizing risks and furthering the desired vision for Richmond Hill.

The 2024 Asset Management Plan did not provide a financing approach nor commented on the use of any alternative funding sources such as debt and/or other revenue sources. The development of a financing strategy or other mitigating approaches is outside the scope of the 2024 Asset Management Plan and will be considered by the CSSC and Council during the 2025 Capital Budget and Forecast development and deliberations.

Figure 11: Supporting the City's Capital Budget and Forecast
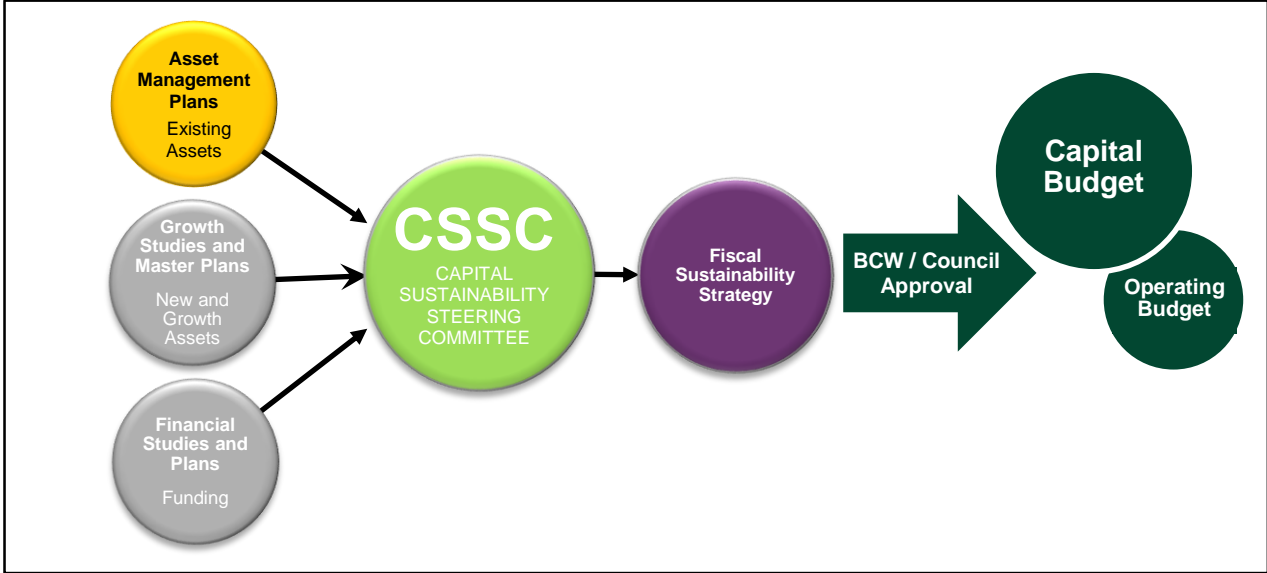
Relationship to Strategic Plan:

The 2024 Asset Management Plan aligns directly with Pillar 3, and the priority action of making capital investments within the context of financial sustainability and based on best practices in asset management planning. It provides the set of practical tools and the roadmap for how the recommended investment renewals into the City's existing infrastructure are supporting the provision of services.

Climate Change Considerations:

Climate change is expected to continue to impact the condition of City assets, the deterioration of those assets over time, and their useful lives and life cycles. The City's asset management planning approach and Strategic Asset Management Policy considers climate change when supporting asset capital programming needs and reporting. By reporting the state of the City's assets, the condition of those assets are known and the appropriate supporting capital renewal investments can be developed that will improve asset resiliency to climate impacts.

Conclusion:

The City's 2024 Asset Management Plan and updated 2024 Strategic Asset Management Policy are being presented for Council's approval to achieve compliance with phase 3 (July 1, 2024) of O. Reg. 588/17, Asset Management Planning for Municipal Infrastructure. The analysis contained in this report will also help inform the ongoing work of the Capital Sustainability Steering Committee and support the development of the City's upcoming 2025 Capital Budget and Forecast.

Moving forward, City staff have a work plan to continue to advance asset management planning processes, data and capabilities in line with best practices and produce a 2025

Asset Management Plan to achieve the next O. Reg. 588/17 requirements due by July 1, 2025.

Attachments:

The following attached documents may include scanned images of appendixes, maps and photographs. All attachments have been reviewed and made accessible. If you require an alternative format please call the contact person listed in this document.

- SRIES.24.015 - Attachment A - 2024 Asset Management Plan
- SRIES.24.015 - Attachment B - 2024 Strategic Asset Management Policy

Report Approval Details

Document Title:	SRIES.24.015 2024 Asset Management Plan.docx
Attachments:	- SRIES.24.015- Attachment A- 2024 Asset Management Plan.pdf - SRIES.24.015- Attachment B- 2024 Strategic Asset Management Policy.pdf
Final Approval Date:	May 10, 2024

This report and all of its attachments were approved and signed as outlined below:

Bob Levesque - May 9, 2024 - 2:04 PM

Gigi Li - May 9, 2024 - 3:37 PM

Paolo Masaro - May 10, 2024 - 8:57 AM

Darlene Joslin - May 10, 2024 - 3:45 PM