BRAMPTON

Report
Staff Report
The Corporation of the City of Brampton
6/18/2025

Date: 2025-05-30

Subject: **Stormwater Asset Management Plan**

Contact: Kevin Thavarajah, Manager, Stormwater Programs, Environment & Development Engineering, Planning, Building & Growth Management

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Report number: Planning, Bld & Growth Mgt-2025-472

RECOMMENDATIONS:

1. That the report from Kevin Thavarajah, Manager, Stormwater Programs, Environment & Development Engineering, Planning, Building & Growth Management to the Committee of Council Meeting of June 18, 2025, re: **Stormwater Asset Management Plan** be received; and;

2. That Council approve the Brampton Stormwater Asset Management Plan attached; and;

3. That the Brampton Stormwater Asset Management Plan be posted on the City's website to comply with Ontario Regulation 588/17.

OVERVIEW:

- **The Province of Ontario's Regulation 588/17: Asset Management Planning for Municipal Infrastructure requires all municipalities to develop comprehensive Asset Management Plans for all municipal infrastructure assets by July 1st 2025.**

- **In 2022, Council approved the "Stormwater Asset Management Plan", that document asset management practices and existing levels of service to meet the first legislated requirement under Ontario Regulation 588/17.**

- **The 2025 update to the Stormwater Asset Management Plan (2025 Stormwater AMP) addresses the next legislated milestone of July 1st 2025**

which requires asset management plans to be expanded to include proposed levels of service and to show how these expenditures will be funded. The 2025 Stormwater AMP is also aligned with the City's Strategic Asset Management Policy. Compliance with this legislation preserves the City's eligibility for future funding support from higher orders of government.

- **The proposed service level over the next 10 years addresses all stormwater asset classes and applies best practices and industry standards to their management, maintenance, renewal and replacement as well as including climate change considerations as stipulated by the Regulation. Delivering this level of service is estimated to cost $24.8 million/year (assuming resources and capacity to deliver are commensurate) and will be fully funded each year by stormwater charges.**

- **The Stormwater Asset Management Plan estimates the current replacement value of engineered and natural stormwater assets at $3.12 billion, with 96.5% of assets in "Fair" or better condition. Assets in less than fair condition will be addressed through ongoing maintenance and capital improvement programs.**

- **Due to the hidden nature of much of the stormwater infrastructure, the City will continue ongoing programs to collect asset and physical condition data (inspections and assessment of visible infrastructure, CCTV for buried pipes, and bathymetric surveys for stormwater ponds) to refine our cost and condition ratings.**

- **The next update of the Stormwater Asset Management Plan is in 2030. Staff will report annually on stormwater asset management progress as part of the annual State of Local Infrastructure update provided to Council.**

- **There are no financial implications resulting from the recommendation in this report.**

BACKGROUND:

Brampton is the fourth largest City in Ontario, one of the fastest growing, and currently home to over 700,000 people. Quality infrastructure services are key to enabling and supporting this growth. Stormwater management is a core municipal service and is delivered by means of an extensive network of engineered infrastructure and natural assets that serves to enhance public safety by protecting people and property from

flooding, maintain business and community continuity, and protect the environment. The stormwater drainage system consists of:

- Stormwater Conveyance Systems
- Stormwater Management Facilities
- Natural Stormwater Assets

The stormwater asset base is the second largest in the City, behind Transportation in terms of replacement cost and is currently valued at $3.12 Billion. The stormwater system continues to expand each year via new infrastructure financed and created by developers through their land development activities and subsequently transferred to the City's ownership. Asset management activities for infrastructure owned and operated by the City are funded from stormwater charges.

On January 1, 2018, the Province of Ontario Regulation introduced Regulation 588/17, "Asset Management Planning for Municipal Infrastructure." This Regulation lays out standard requirements and deadlines for municipal asset management planning. With regard to stormwater management assets, the Regulation stipulates that an asset management plan that speaks to existing levels of service shall be completed by July 1st, 2022 and is to be updated to speak to proposed levels of service by July 1st, 2025.

The Stormwater Asset Management Plan approved by Council in 2022 met the regulatory requirements of the July 2022 legislated milestone, and provided a comprehensive framework for identifying, developing and delivering the planning, operational and maintenance programs to meet the required levels of service for the residents, businesses and communities of Brampton in a financially sustainable manner.

CURRENT SITUATION:

The City engaged the services of SLBC Inc., one of the leaders in asset management in Ontario, to prepare the Stormwater Asset Management Plan to formally address the requirements of the July 1, 2025 deadline of Ontario Regulation 588/17 while ensuring alignment with the City's Strategic Asset Management Policy. Development of the Asset Management Plan was supported by the Corporate Asset Management Office and the study team worked with staff from other City divisions involved in the delivery of stormwater services.

The 2025 Stormwater Asset Management Plan provides a comprehensive framework for prioritizing and optimizing asset management efforts, enabling effective management of the City's $3.12 billion stormwater infrastructure to achieve established goals and objectives.

The Stormwater Asset Management Plan addresses the key requirements under Ontario Regulation 588/17 by providing guidance on the optimal allocation of resources to meet

defined goals, objectives, and levels of service. It is focused on achieving several key outcomes:

- Ensuring long-term sustainability
- Lowest cost of ownership
- Minimizing risk
- Enhancing service delivery
- Supporting informed decision making

The Stormwater Asset Management Plan is included as Attachment 1 and the following sections provides information on the key areas of the Plan.

Infrastructure Asset Inventory

The City has an extensive network of stormwater conveyance, stormwater facilities and natural assets. The City's network consists of the following:

Stormwater Conveyance
- 2,059 km of storm sewers
- 41,353 catchbasins
- 28,623 manholes
- 1,364 outfalls
- 2,465 culverts
- 125 km of ditches
- 255 km of watercourses

Stormwater Management Facilities
- 180 stormwater ponds
- 134 water quality units
- 27,621 m^2 of Low-Impact Development

Natural Stormwater Assets (included for completeness, but not funded by stormwater charges)
- 162.8 ha of wetlands
- 413,715 m^2 of lakes

Replacement Cost

The current estimated replacement value for the engineered stormwater management system and the system of receiving watercourses is $3.014 Billion, and other natural assets (lakes and wetlands) is $106 Million for a total replacement value of $3.12 Billion (2024 dollars). The current valuation approach is grounded in evidence-based cost estimation, utilizing market-informed data and cost estimation expertise to establish accurate replacement costs. Engineered assets were analyzed based on specific asset parameters such as length, diameter, area, and material type—and further validated

through benchmarking. Natural assets (watercourses, lakes and wetlands) were evaluated using a restoration-based costing approach, which estimates the investment required to restore or rehabilitate these features.

Asset Condition

The overall average stormwater asset portfolio, based on age and condition data where available, is in FAIR condition, with 96.5% of assets in fair and above condition reflecting the recent installation of the majority of infrastructure.

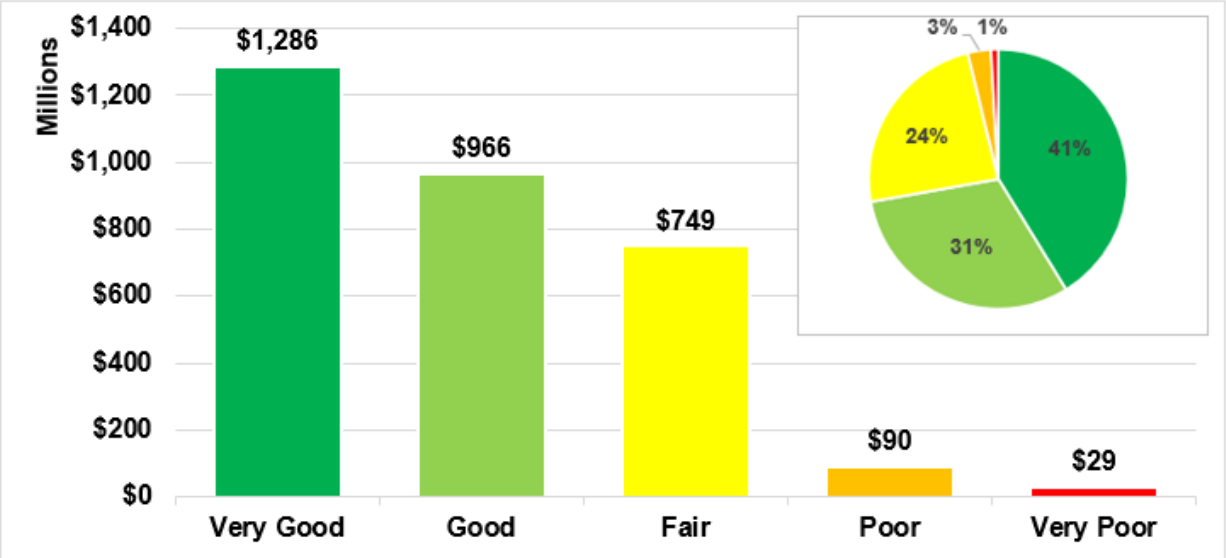

Figure 1:Asset Condition Grade Profile by Replacement Value

Asset Age

The majority of the stormwater infrastructure has been installed in the period of rapid growth Brampton has been experiencing for the last 30+ years. The stormwater management system still has about 50% of useful service life remaining. With some components such as water quality units and stormwater ponds having a shorter service life, life-cycle activities for those are and will continue to be planned accordingly.

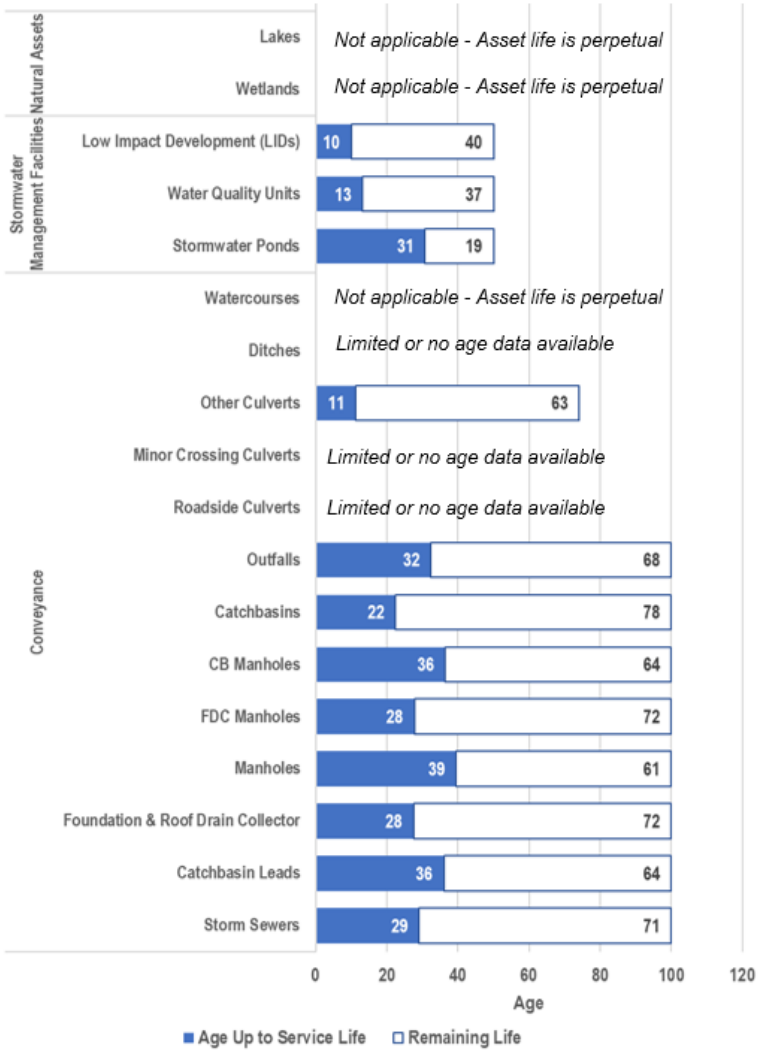

Figure 2: Asset Age Summary

Levels of Service

Stormwater management levels of service are primarily driven by legislation and regulations focused on public safety outcomes and protection of people and property from flooding. The proposed level of service for all assets is detailed in Chapter 3 of the Stormwater Asset Management Plan. The asset management strategies and associated needs outlined in the Stormwater Asset Management Plan will allow the City to provide these proposed levels of service in a financially sustainable manner.

The proposed levels of service are designed to enhance infrastructure resilience to extreme weather, improve safety and efficiency, and align with regulatory requirements under O. Reg 588/17.

Asset Management Maturity

The City conducted an asset management (AM) maturity assessment across all major stormwater asset classes using the International Infrastructure Management Manual (IIMM) framework. This assessment, informed by staff workshops and a review of 16 key AM elements, found the City's overall AM maturity score to be 46, indicating a "Core" maturity level. The goal is to reach an "Intermediate" level within five years. While perfect data and processes are rarely achievable, the focus is on continuous improvement and building reliable, consistent practices. To support this progression, a series of common improvement initiatives have been identified in the Plan to enhance the City's overall asset management capabilities and service delivery practices.

Risk Management Strategy

Managing risk is a core principle of effective asset management, especially for critical infrastructure like stormwater systems. The City's approach to risk management focuses on identifying, assessing, and mitigating potential threats to service delivery, public safety, the environment, and financial sustainability. A standardized Risk Management Strategy (RMS), aligned with ISO 31000 principles, was developed to ensure consistent risk evaluation across all asset classes and departments.

Risk ratings guide decision-making by identifying high-priority assets that require investment or enhanced monitoring. Approximately $2.2 billion (71%) have been classified as presenting low to insignificant levels of risk, $0.8 billion (26%) are categorized as moderate risk, while the remaining 109 million (3.5%) have been identified as high-risk assets. Importantly, no assets have been assessed in the extreme risk category.

The City actively monitors high-risk assets through ongoing inspections and incorporates risk mitigation strategies within the capital and operating budget processes to ensure that stormwater assets continue to provide reliable service while adapting to changing environmental and urban conditions.

Natural Assets

The 2025 Stormwater Asset Management Plan marks the first time that natural assets such as wetlands and lakes have been formally included in the City's asset inventory, valuation, and lifecycle planning. This represents a significant evolution in the City's asset management practices by recognizing the essential stormwater services provided by ecosystems.

Natural assets deliver critical benefits including flood regulation, water filtration, erosion control, and habitat provision.

Moving forward, additional studies and refinement will be required to close data gaps, improve condition and performance tracking for natural features, and better incorporate

ecosystem services and climate resiliency into future updates of the Stormwater Asset Management Plan.

Climate Change Integration

Climate change presents growing risks to Brampton's stormwater infrastructure, with more frequent flooding, heatwaves, and severe storms which are already impacting service delivery and asset performance. As required by Ontario Regulation 588/17, the City is integrating climate considerations into its Asset Management Plan to ensure long-term resilience and reliable service.

Climate-related impacts - such as increased runoff, sediment buildup, and erosion - are expected to raise operating costs for stormwater assets (FAO, 2023). Based on best practices, a high emissions climate scenario was applied to select assets in the Asset Management Plan, forecasting increases of 2.5% for culverts and ditches and 5.1% for pipes to its lifecycle cost projections. These increases reduce the risk of underestimating climate impacts and avoids costly or disruptive service interruptions. While asset lifespans remain unchanged for now, the climate-related costs focus primarily on maintenance needs and operations (e.g., inspection frequency).

Integrating climate considerations into the Asset Management Plan aligns with the draft *Climate Ready Brampton*, including actions focused on embedding climate change and natural assets into Asset Management Plans. These initiatives will help embed climate resilience into capital planning, lifecycle strategies, and service delivery frameworks across the City's stormwater portfolio**.**

Lifecycle Strategy and Financial Affordability

The City applies lifecycle management strategies with the aim to balance cost, risk, and performance. These strategies include non-infrastructure solutions, operations and maintenance, renewal, rehabilitation, replacement, disposal, and expansion.

The City has selected a proposed service level that it aims to achieve across the stormwater infrastructure portfolio over the next 10 years (2025-2034). For, this level of service, it is estimated that $24.8 million/year is required to maintain, renew and replace existing assets which balances the need for sustainable infrastructure with fiscal responsibility, regulatory requirements and community expectations.

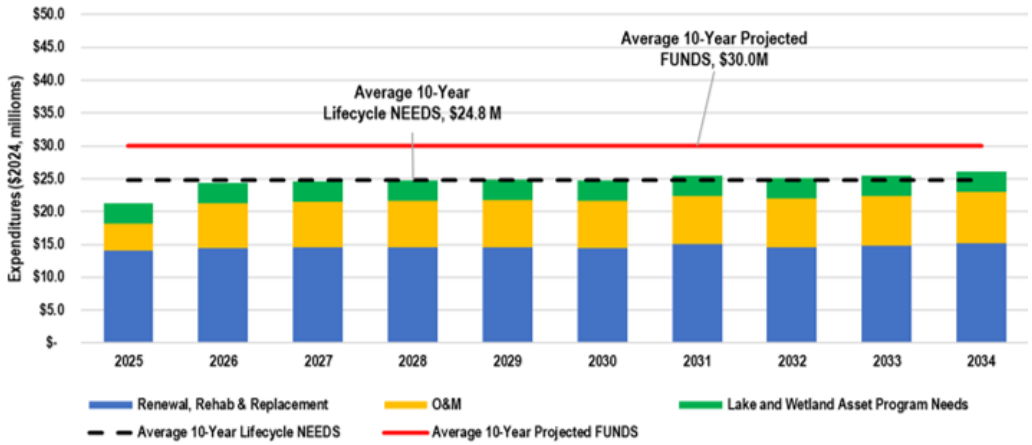

Figure 3: 10-Year Full Lifecycle Needs

The average available revenue to be collected from the stormwater charge over the next 10 years is projected to be $30.0 million/year based on current forecasts with 3.4% inflationary growth. This is adequate to fund all stormwater program needs over the next 10 years.

Monitoring and Improvement

The 2025 Stormwater Asset Management Plan fulfills the requirements of Ontario Regulation 588/17 for reporting on proposed Levels of Service. As asset management is an evolving process, this Plan outlines key improvements to enhance data quality, strengthen financial planning, and advance program maturity ahead of the next AMP iteration.

Chapter 8 of the Plan identifies targeted improvement initiatives to optimize stormwater service delivery and build organizational capacity. These include completing inventories for erosion control and flood protection assets, climate change risk assessments, and conducting condition assessments for natural features such as wetlands and lakes. Enhancing inspection programs and aligning budgets with lifecycle activity types will support more accurate cost forecasting and improved decision-making.

Annual progress reviews, as required by O. Reg. 588/17, will track implementation of the improvements noted in Chapter 8 of the Plan. Collectively, these actions reinforce Brampton's commitment to continuous improvement and the long-term sustainability of its stormwater infrastructure.

Next Steps

- Staff will continue to develop and deliver the operational programs and lifecycle activities identified in the Stormwater Asset Management Plan and funded by the Stormwater Charge.

- Staff will continue to seek and identify options to allocate funding required for Natural Assets through external grants to supplement stormwater charge funding for maintenance of those assets.

- Staff will provide future annual Asset Management updates for stormwater assets via the annual State of Local Infrastructure update to Council.

CORPORATE IMPLICATIONS:

The life-cycle activities detailed in the Stormwater Asset Management Plan require the support of multiple Divisions within the City to deliver programs and services. Environment & Development Engineering, Road Maintenance, Operations & Fleet, Parks Maintenance and Forestry, Capital Works, Information Technology, and Finance are some of the City Divisions relied upon in the delivery of stormwater programs and services.

Financial Implications:

There are no financial implications resulting from the recommendation in this report.

Other Implications:

The Province of Ontario's Regulation 588/17: Asset Management Planning for Municipal Infrastructure requires all municipalities to develop comprehensive Asset Management Plans for all assets by July 1st, 2025. Council approval of this plan allows the City to meet this regulatory requirement for stormwater assets.

STRATEGIC FOCUS AREA:

- **Environmental Resilience & Sustainability**: The Stormwater Asset Management Plan directly supports this focus area by prioritizing climate adaptation, improving flood resilience, protecting natural assets, and promoting sustainable, long-term asset renewal strategies.
- **Government & Leadership**: The Plan demonstrates service excellence and accountability by meeting provincial regulatory requirements under Ontario Regulation 588/17, incorporating evidence-based decision-making, and aligning asset investment with risk, condition, and level of service targets. The City's proactive approach—including a dedicated stormwater charge and formalized financing strategy—illustrates innovation, transparency, and long-term financial responsibility.

CONCLUSION:

The City of Brampton has an extensive stormwater management system that provides core municipal services that protect people, property and the environment. Maintaining the $3.12B worth of infrastructure in a state of good repair requires a robust asset management plan supported by good quality data and evidence-based decision making.

The Province of Ontario Regulation 588/17 requires that municipalities expand their stormwater asset management plans to address proposed levels of service intended to meet evolving current and future needs.

The 2025 Stormwater Asset Management Plan provides a comprehensive framework for prioritizing and optimizing asset management efforts, enabling effective management of the City's stormwater infrastructure to achieve established goals and objectives and meet Provincial requirements for municipal asset management planning.

Staff are seeking Council approval of the 2025 Stormwater Asset Management Plan prepared in accordance with Ontario Regulation 588/17, and will publish the plan on the City's website following approval.

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Attachments:

- Attachment 1 – Stormwater Asset Management Plan