
TO: GENERAL COMMITTEE

SUBJECT: APPROVAL OF TRANSPORTATION ASSET MANAGEMENT PLAN

WARDS: ALL

PREPARED BY AND KEY CONTACTS: S. DREWETTE, CET, SENIOR ASSET MANAGEMENT PROGRAM COORDINATOR
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CHIEF ADMINISTRATIVE OFFICER APPROVAL: M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That the 2021 Transportation Asset Management Plan prepared by City staff dated May 2021, attached to Staff Report CAM003-21, be approved.

PURPOSE & BACKGROUND

2. The primary purpose of this Staff Report is to receive Council approval of the Transportation Asset Management Plan (AMP) in accordance with Provincial Regulations.
3. Additionally, the Staff Report and AMP serve to provide valuable information to Council about:
 - a) The City's transportation infrastructure needs in order to provide a safe and effective transportation network that will continue to support our existing community and economy as well as accommodating growth in a sustainable way;
 - b) The most financially efficient way to maintain the City's existing road network by focusing on preservation and renewal; and
 - c) The funding challenges to address growth, capacity, and renewal, and the associated impacts to levels of service.
4. The Province of Ontario's *Infrastructure for Jobs and Prosperity Act, 2015 (IJPA)* was enacted with the purpose of "establish[ing] mechanisms to encourage principled, evidence-based and strategic long-term infrastructure planning that supports job creation and training opportunities, economic growth and protection of the environment, and incorporate design excellence into infrastructure planning". The IJPA applies to the province but also to the broader public sector, including municipalities.
5. The first regulation made under the IJPA was *Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure*. O. Reg 588/17 came into effect in January 2018 and prescribed timelines for Ontario municipalities to develop asset management plans. In 2021, those timelines were revised, giving municipalities an additional year to achieve the previously prescribed milestones. The current timelines and requirements are summarized in the table below:

Provincial Prescribed Milestone	City of Barrie status
Phase 1 (by July 1, 2019): Strategic Asset Management Policy	Adopted June 2019
Phase 2 (by July 1, 2022): Asset management plans for core infrastructure assets which include water, wastewater and stormwater assets, roads, bridges and culverts; within this, the plans for core assets must include current levels of service and costs to maintain these levels.	Stormwater – Approved by Council in Q1, 2021 Transportation – Subject of this report Wastewater – Planned for Council Q3, 2021 Water - Planned for Council Q3, 2021
Phase 3 (by July 1, 2024): Asset management plans for all other municipal assets, including current levels of service and costs to maintain these levels.	Future update included in budget forecast
Phase 4 (by July 1, 2025): Builds on phases 2 and 3 where plans shift from current levels of service to focus on proposed levels of service and related lifecycle management and financial strategies for all assets.	Future update included in budget forecast

- The 2021 Transportation Asset Management Plan is an update of the City's previous asset management plan prepared in 2015.

ANALYSIS

State of the City's Transportation Assets

- The AMP includes transportation assets owned and operated by the City, like roads, bridges, active transportation (sidewalks and multi-use paths), traffic control devices (signals and signs) and streetlights. This AMP also includes rail bridges as they have significant value, however other rail assets such as railbed, tracks, security, facilities, or equipment are not included in this AMP and should be the subject of a separate rail AMP in the future.
- The goal of asset management is to ensure the City's financial sustainability by making informed investment decisions that deliver City services at the desired level while minimizing costs and maintaining an acceptable level of risk.
- The majority of the City's \$1.1B in transportation assets is roads, with a replacement value of approximately \$800M. Most of the City's road infrastructure has 70-75% of its service life remaining, this is expected as much of it was constructed during the rapid growth that occurred from the 1980s through the 2000s.
- The physical condition of Barrie's Transportation infrastructure is generally good with 87.5% considered to be in fair or better condition. However, 12.5% (or \$140 million) in City transportation assets are in poor or very poor condition and will require short to medium term financial investment to maintain acceptable service levels. Most of these poor and very poor condition assets are bridges, local roads, and the Lockhart Rail bridge that are in need of replacement.

Additionally, pro-active renewal and preservation activities for assets that are still in fair condition can be the most financially efficient way to keep these assets from degrading to the point of needing more expensive renewal.

11. The above noted consideration of physical condition is just one part of managing transportation assets. Capacity and connectivity of the City's transportation networks is a major factor in enabling people to move around efficiently and safely. In 2019, the City completed a city-wide Transportation Master Plan to document the existing deficiencies and barriers to growth. This Master Plan identified over two billion dollars in growth and upgrade needs to the 2041 planning horizon.
12. Defining and documenting the level of service is a key part of asset management. Ontario Regulation 588/17 defines mandatory level of service measurements for roads and bridges. The existing levels of service are shown in the tables below.

Levels of Service for Roads (Table 4 - O. Reg 588/17)

Community levels of service (qualitative descriptions)	Technical levels of service (technical metrics)	Current (2020) Performance
Description, which may include maps, of the road network in the municipality and its level of connectivity.	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality.	Arterial - 457 in km Collector - 284 in km Local - 842 in km City Area - 108.5 km ²
Description or images that illustrate the different levels of road class pavement condition.	For paved roads in the municipality, the average pavement condition index value.	Arterial - 77 Collector - 75 Local - 72 (Overall average – 75)

Levels of Service for Bridges (Table 5 - O. Reg 588/17)

Community levels of service (qualitative descriptions)	Technical levels of service (technical metrics)	Current (2020) Performance
Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	Percentage of bridges in the municipality with loading or dimensional restrictions.	8.8%
Description or images of the condition of bridges and how this would affect use of the bridges.	For bridges in the municipality, the average bridge condition index value.	74

13. The 2020 performance against the level of service objectives above summarizes the current performance of the City’s transportation assets. On average, the City’s transportation assets are in good condition and this is reflected in the level of service measures above. This Asset Management Plan does not specify the proposed or target level of service. As part of Ontario Regulation 588/17 there is a requirement to document proposed level of service for all assets by 2025. At that time, the City will develop targets for each of these objectives which will consider the desired level of service, the cost to provide that level of service and the risks associated with that level of service.

Management and Investment in the City’s Transportation Assets

14. The Asset Management Plan includes life cycle strategies required for the different types of transportation assets. By defining the optimal life cycle strategy including what lifespan assets have and how those lifespans can be preserved and lengthened, the City seeks to optimize the useful life of each asset. The Transportation AMP builds on best practices already underway in the City and also brings best practices from other jurisdictions. Improving asset life cycle strategies is an ongoing focus of City staff in all departments.
15. Based on an understanding of the City’s current assets, condition, lifespan and rehabilitation/replacement costs, the Asset Management Plan identified the sustainable long-term renewal needs for transportation assets. One of the key conclusions in the AMP is that the City has historically been underspending on transportation relative to the identified needs, and that this trend continues through the current 10-year Capital Plan and Outlook.
16. The Asset Management Plan also considers the growth and upgrade needs identified in the 2019 Transportation Master Plan and compares these forecasted needs to the planned expenditures in the Capital Plan and Outlook. Because of affordability, availability of resources and delays to the planned development in the Secondary Plan Areas, the implementation of the Transportation Master Plan has been spread over an extra ten years, from 2021-2051, for the purpose of the analysis in this AMP.

Asset Lifecycle Activity	10-year (2021 – 2030) Average Annual Amounts (2021\$M/year)			Funding Ratio (Target = 1.0)
	Forecast Needs	Planned Funding	Gap	
Operations and maintenance	\$19.3*	\$18.6*	\$0.7	0.96
Renewal	\$38.2	\$32.4	\$5.8	0.8
Growth and upgrade	\$70.7	\$28.8	\$41.9	0.4
TOTALS	\$128.2	\$79.8	\$48.4	0.6

*Operations and Maintenance needs have been forecasted to increase at 2% per year, which is less than required to keep up with the projected growth of 2.8% per year.

17. The planned expenditures on transportation in the 10-year Capital Plan and Outlook leave a funding gap averaging \$5.8M/year relative to renewal needs. The majority of these needs are related to renewal of the road network. For growth and upgrade related needs, the funding gap is more substantial at an average of \$41.9M/year.

18. Renewal funding has been increasing beginning in 2018 with changes to the road resurfacing program to increase the quantity of roads resurfaced each year. These increases are important because resurfacing enables the City to maintain roads at the lowest overall lifecycle cost. When resurfacing is neglected, roads degrade more rapidly resulting in poor levels of service and increased costs to maintain, and ultimately reconstruct failed roads. To ensure that the City's transportation network is maintained in a financially efficient way, it will be important to continue funding the road resurfacing program and other proactive investments. In addition, staff continue to research new technologies and standards related to pavement preservation and financial efficiency.
19. The forecasted operations and maintenance budget needs have been determined based on historical spending and an assumed 2% annual increase going forward. An assumption that the O&M budget will need to grow annually at a rate matching population growth has been used to project needs associated with growth of the asset portfolio, as well as the additional O&M costs that result from underfunding renewal needs. The City does not have a track record of increasing O&M budgets to support these additional requirements, and therefore, there is a potential for an additional infrastructure gap on the O&M side which is not articulated in the AMP. The result of underinvestment in O&M is decreased service levels across the asset portfolio. In the next Asset Management Plan, proposed service levels will be established and with them, the optimal spending to link needs, risk, and cost will be investigated. In the interim, the operations and maintenance budget will need to increase over time to ensure that sufficient resources are available to address these two pressures – the growing asset portfolio, and degraded transportation assets to minimum maintenance standards in accordance with O.Reg. 239.02.
20. Funding the 10-year capital plan is subject to the health of various City reserves. The slower than anticipated pace of growth has meant lower than expected Development Charge revenues, and this in turn has resulted in deferral of some growth projects in the capital plan. In some cases, this may be acceptable as the demand associated with new development has also been delayed, however for some projects which also have a component of benefit to the existing community, these delays will result in reduced levels of service. The non-growth transportation needs are typically funded from the Tax Capital Reserve and Canada Community-Building Fund (formerly the Federal Gas Tax Fund), both of which experience pressure by a number of other tax funded services and asset needs. "Competing" with these other service areas means there is potential that transportation renewal projects may also end up being deferred.
21. While the City's investment in renewal is projected to increase, there are still funding gaps related to renewal as well as growth and upgrades of the transportation system. Continued under-investment will result in lower than expected service to residents including poor road condition, increased traffic congestion, reduced safety.

Advancing Asset Management

22. Data tracking and analysis help to identify when and how to invest money in the City's assets, in order to minimize risk, provide consistent and expected levels of service, meet mandated requirements and use a smart long-term financial approach.
23. Managing assets like roads, sidewalks, and bridges is about more than fixing what is broken; it's about investing in assets and planning for the future, to avoid risks to public safety and higher costs long-term.
24. Asset management decisions are made by staff in all areas of the City and by Council. The value of asset management plans is in providing data to inform these decisions, identifying areas for improvement, documenting risk and outlining the requirements for long term sustainability.
25. This Staff Report and the attached AMP have summarized the status and funding needs of the City's current and future transportation assets. It represents an important step in the ever-evolving process of asset management at the City of Barrie. Over the coming months and years, Council will be hearing more about asset management as the City completes AMPs for all of our assets. This information will be used to plan long term in a way that is sustainable and fair to current and future generations.

ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS

26. The following environmental and climate change impact matters have been considered in the development of the recommendation:
- a) The Transportation Master Plan included an aggressive modal share target, and an Active Transportation component. Therefore, the growth and upgrade needs captured within the AMP include sidewalks, cycling infrastructure which will contribute to the City's efforts to mitigate climate change

ALTERNATIVE

27. The following alternative is available for consideration by General Committee:

Alternative #1 General Committee could choose not to approve this Staff Report and the attached Transportation Asset Management Plan.

This alternative is not recommended as it would jeopardize the City's compliance with Ontario Regulations. Being out of compliance could impact the City's ability to compete for grants and external funding from the province.

FINANCIAL

28. There are no direct financial implications for the Corporation resulting from the proposed approval of this report. The AMP includes a Financial Analysis section, and the details and conclusions are presented in the analysis section of this Staff Report.
29. The information in the Transportation Asset Management Plan will be used to help inform capital and operating budgets and serve as inputs into other studies.

LINKAGE TO 2018–2022 STRATEGIC PLAN

30. The recommendation(s) included in this Staff Report support the following goals identified in the 2018-2022 Strategic Plan:
- Improving the Ability to Get Around
 - Building Strong Neighbourhoods
 - Offering Innovative & Citizen Driven Services
31. Efficient, well maintained, and sustainable transportation assets are critical for improving the ability to get around Barrie, and active transportation assets in particular support building strong neighbourhoods.
32. Asset management planning is an ongoing and long-term process that allows the City of Barrie to make the best possible investment decisions for its assets, which in turn improves the service level offered to citizens.