



City of
Peterborough

To: **Members of the Finance Committee**

From: **Jasbir Raina, Commissioner of Infrastructure and Planning Services**

Meeting Date: **January 16, 2023**

Subject: **Roads Service Area – Capital Program Funding Update, Report IPSACP23-001**

Purpose

A report to provide an update on the Roads Service Area – Capital Program to highlight requirements to maintain current Levels of Service, deliver capital projects identified in the Transportation Master Plan to accommodate growth, and status of current funding deficit.

Recommendation

That Council approve the recommendation outlined in Report IPSACP23-001 dated January 16, 2023, of the Commissioner of Infrastructure and Planning Services as follows:

That Report IPSACP23-001 be received for information.

Budget and Financial Implications

There are no budget or financial implications associated with approval of this report.

As investments in preventative maintenance are deferred, the cost to maintain road conditions increase over time. If road conditions deteriorate beyond a certain point, maintaining the road condition to minimum maintenance standards becomes more challenging until such time as a more expensive road reconstruction is required.

As investments in expanding or improving the road network are deferred, the cost to implement these upgrades increases over time due to construction cost escalation; and operational challenges (i.e., higher traffic volumes, slower transit service, longer queuing at intersections, reduced mode shift away from single occupancy vehicles, higher greenhouse gas emissions) become more common as the City grows.

Background

What is Asset Management?

Asset management is defined by the International Organization for Standardization (ISO) as the “coordinated activity of an organization to realize value from assets”. It is an ongoing process of making the best possible decisions regarding the construction, operation, maintenance, renewal, replacement, and disposal of assets. Asset management helps us put rigour and structure around the information we use to make strategic decisions.

The complete Asset Management Plan that was approved by Council through Report IPSIM22-011 can be viewed here: [Asset Management Plan - final](#)

What is an Asset Management Plan?

The Asset Management Plan is often a place to start the conversation about values and what is important to stakeholders. It is about communicating available options and alternatives, risks and service impacts, and the willingness-to-pay to deliver services. Furthermore, it provides information that outlines the importance of making timely investments towards maintaining the assets in a State of Good Repair (SOGR) to enhance their lifecycle renewal or replacement.

Benefit of Asset Management to the Community

Stakeholders want safe, reliable, and sustainable services delivered in a predictable and cost-effective manner. The asset management process formalizes existing management practices and provides sound information to help us determine how to best invest in assets. This is so stakeholders can continue to receive services and amenities that contribute to their quality of life, and that they can receive the value of

those services without disruption. Asset management can help reduce the risk of service disruptions and poor-quality services. It is a system that helps:

- Maintain the delivery of services
- Plan for the future
- Manage risk
- Invest responsibly by making informed decisions

Asset Management and Council Role

Council plays a key role in establishing strategic direction and the Level of Service that will be delivered to stakeholders. These should consider stakeholder expectations, legislative requirements, and available resources.

To support Council's role in making informed decisions, sound asset information is needed. This information is required to be able to answer the following questions regarding City assets:

- Performance: What Level of Service do the assets currently provide?
- Risk: What is the likelihood and consequence of asset failure? What are the service risks without sufficient funding?
- Cost: What funding level is required to maintain or change the current level of service being provided?

Through engagement with City staff and stakeholders, and by leveraging the information in the Asset Management Plan, Council will be able to set the direction to deliver safe and sustainable services in a predictable and cost-effective manner.

Maintaining and Improving Road Conditions

The existing condition of the City's roads continues to be a source of concern for Council, citizens, and staff. The 2021 Asset Management Plan established the current replacement value of the City's Roads & Related Assets Service Area at \$1.64 billion dollars. This report illustrates the continued backlog of road related work and the effects of funding pressures.

Ontario Regulation 239/02 of the **Municipal Act** sets out maintenance standards for Municipal highways and roads. The regulation outlines classification categories for roads, requirements and frequency of inspection, rehabilitation methods and seasonal maintenance standards. While there is some flexibility within the road rehabilitation programs, regulatory requirements must be met.

Industry standard for developing a roads rehabilitation program involves a thorough assessment of the condition of the road network. The condition assessment involves a complex matrix of criteria, such as classification, regulatory requirements, bus routes, traffic loads, urbanized/non-urbanized, sub-surface infrastructure, surface material, surface infrastructure, etc.

A standard road rehabilitation and maintenance program uses the assessment criteria to develop a Pavement Condition Index (PCI) and treatment option:

- Roads with PCI under 25 are intended to be re-constructed
- Roads with PCI under 40 are intended for re-design and then re-construction
- Roads with PCI above 40 are intended to be captured in a regular maintenance program with treatments scoped to types of defects (i.e., microsurfacing/crack sealing or grind & overlay/resurfacing)

In 2014, the City enlisted consultant support to conduct a Road Needs Study and develop Pavement Condition Indexes (PCI) for the roads/road segments. Since the 2014 Study, some roads requiring reconstruction have been included in draft budget documents; however, competing budget priorities have resulted in many road reconstructions being deferred, thereby pushing such roads beyond their SOGR envelope. The ongoing deferral of these projects creates a backlog throughout the entire road asset management program and results in increased costs as time goes by.

In 2021, the City completed an update to the Pavement Condition Index (PCI) inventory as established in the comprehensive Road Needs Study (Report USEC14-005). This monitoring work updates the pavement condition index (PCI) ranking for each road or segment of road. This industry standard method helps the City establish a consistent framework for prioritizing roads and demonstrates the value of pavement preservation. Typically, the PCI inventory is updated on a two-year cycle.

The investments made in pavement preservation since 2014 are summarized in Table 1 below. While the annual investment has been gradually increased year-over-year, the purchasing power of that investment has been declining when factoring in construction cost escalation and the fact that road conditions continue to deteriorate as a result of the chronic underinvestment in pavement preservation. The annual funding gap continues to grow.

Table 1 – Summary of Pavement Preservation Investments, Needs and Funding Gap

| Year | Actual Pavement Preservation Investment | Investment Required to Maintain Road Conditions | Funding Gap |
|-------------|--|--|--------------------|
| 2014 | \$1,900,000 | \$10,800,000 | (\$8,900,000) |
| 2015 | \$1,950,000 | \$11,450,000 | (\$9,500,000) |
| 2016 | \$2,900,000 | \$12,130,000 | (\$9,230,000) |
| 2017 | \$3,000,000 | \$12,860,000 | (\$9,860,000) |
| 2018 | \$3,300,000 | \$13,630,000 | (\$10,330,000) |
| 2019 | \$3,700,000 | \$14,450,000 | (\$10,750,000) |
| 2020 | \$4,100,000 | \$15,320,000 | (\$11,220,000) |
| 2021* | \$5,500,000 | \$16,240,000 | (\$10,740,000) |
| 2022* | \$5,750,000 | \$17,210,000 | (\$11,460,000) |
| 2023 | \$5,150,000 | \$18,250,000 | (\$13,100,000) |

*These years included a pilot road resurfacing program to implement surficial asphalt treatments without addressing underlying drainage, grading and subgrade deficiencies to provide a short-term improvement of the pavement condition. Due to budget pressures, this program has not been proposed for 2023. The best long-term value for taxpayers is to implement pavement lifecycle management strategies in line with best asset management practices.

Due to budget pressures, only one road reconstruction that is not captured in the TMP as an operational improvement, to accommodate future growth, has been proposed for the 2023 Capital budget (Table 2). This project addresses underground infrastructure that is in poor condition, in addition to poor pavement surface conditions and is of high priority.

Table 2 – Summary of Road Reconstruction Projects Proposed for 2023 Capital Budget

| Project | Capital Budget Reference | 2023 Investment |
|--|--------------------------|-----------------|
| Parkhill Road Reconstruction – George to Rubidge | 5-9.04 | \$1,850,000 |

Implementation of the Transportation Master Plan and Accommodating Growth

The estimated capital costs associated with the recommendations outlined in the Transportation Master Plan (TMP) are just over \$900,000,000 (expressed in 2022 dollars), which will be required over the 30-year horizon of the plan. This translates into an average of \$30.0 million annually; however, the timing of projects will influence the actual annual capital budget requests. Recognizing the funding pressures on the capital road program, the bulk of the investment proposed in the TMP was planned beyond the 20-year horizon and identified as a “Long-term Priority.” This approach allows for subsequent updates to the TMP to confirm the pace of projected growth in the City and then reassess or reconfirm the need for, and timing of, those projects.

Notwithstanding the back-end loading of the TMP, the “Short-term Priorities” – projects to be completed with the first 10-years of the plan – still require a significant investment. The “Short-term Priorities” amount to approximately \$180 million, or approximately \$18.0 million per year. Table 3 summarizes the 2023 capital projects proposed that were identified in the TMP as “Short-term Priorities.” These projects represent an investment of \$15,550,000, which is \$2,450,000 short of the annual investment required. Future annual investments will need to be increased in subsequent capital budgets or the implementation schedule of the TMP will slip.

Table 3 – Summary of TMP “Short-term Priorities” Proposed for 2023 Capital Budget

| Project | Capital Budget Reference | 2023 Investment |
|---|---------------------------------|------------------------|
| Lansdowne Street West – Spillsbury to Clonsilla | 5-9.01 | \$6,000,000 |
| Lily Lake Area Development Network Improvements | 5-9.02 | \$3,000,000 |
| Lansdowne Street West – Park to Otonabee River (Phase 1 – Park to George) | 5-9.03 | \$2,800,000 |
| Water Street North Urbanization (Phase 1 – Water & Woodland Intersection) | 5-9.05 | \$1,250,000 |
| Various Intersection Improvement Program | 5-9.06 | \$1,000,000 |
| Chemong Road – Parkhill to Sunset | 5-9.07 | \$400,000 |
| Charlotte Street – Aylmer to Park | 5-10.02 | \$1,100,000 |
| Total | | \$15,550,000 |
| Average Annual Investment for TMP “Short-term Priorities” | | \$18,000,000 |
| Shortfall | | (\$2,450,000) |

In addition to the priorities established in the TMP, growth pressures resulting from both infill and greenfield development can require additional localized improvements (i.e., turning lanes, intersection/crossing improvements, active transportation network enhancements). The cost of these improvements is typically the responsibility of the development proponent in line with the “growth-pays-for-growth” principle, with the City negotiating cost sharing agreements where a reasonable existing municipal need for the improvement has been identified. Recent changes in direction from the Provincial government with the passing of **Bill 23 – More Homes Built Faster Act** are reducing the City’s mechanisms to compel development proponents to contribute to the “growth-pays-for-growth” model. This is being achieved through expanded development charge exemptions or scope reductions in what development charges can recover. This will require the existing property tax base to cover these costs, resulting in less money for pavement preservation programs and TMP priorities, or the need to increase property taxes.

Next Steps

As the City continues to refine its asset management practices, collect better data and define more accurate models on pavement deterioration, further updates will be provided. With both the Asset Management Plan and Transportation Master Plan being updated in 2022, a long-term roads lifecycle renewal/reconstruction capital plan will be developed in 2023 that seeks to maximize investments in required growth projects that also address deferred maintenance needs in an effort to maximize the value from each dollar invested. The Asset Management Plan development and updates will also seek input from stakeholders on current and desired Levels of Service in various Service Areas – including Roads and Related Assets. This exercise will help quantify the cost to provide the desired levels of service and make recommendations on changes to the lifecycle management strategies in the development of a sustainable financing strategy.

This could include recommendations on increasing available funding through property tax increases to meet desired Levels of Service or accepting lower Levels of Service (within regulatory limits) to mitigate the need for additional funding sources.

Summary

The road network is a core asset of significant scale that is required to move people and goods around the City by various modes of transportation. Chronic underinvestment in preventative maintenance during the second half of the 20th-century has resulted in many existing road assets having a deteriorated condition and operating beyond their appropriate lifecycle renewal stage. As asset management planning has become commonplace in recent years, the City has completed condition assessments and projected investments required to maintain or improve current pavement conditions. Given the extent of the backlog, the necessary investments have not been made due to competing budget pressures for other important service areas, and limits on property tax increases. As the City grows, further dedicated funding investments are required to enhance the road network as recommended in the TMP and to support infill and greenfield development projects, putting further strain on limited capital dollars available.

Submitted by,

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