



City of
Peterborough

To: Members of the Peterborough Transit Liaison Committee

From: Michael Papadacos, Asset Management and Capital Planning Director

Meeting Date: May 25, 2023

Subject: PTLC23-001 Transit and the Transportation Master Plan (TMP)

Purpose

This report is to provide the Peterborough Transit Liaison Committee with an overview of the TMP process, the Hybrid strategy and goals developed to achieve City's future Vision for the transportation system, and describe the role of Transit within the TMP.

Background

City of Peterborough Council, at their meeting of March 28, 2022, adopted the recommendations of the Transportation Master Plan (TMP) for the City. TMP's are broad community-based planning documents that are structured to examine the need for new infrastructure on a system-wide basis while incorporating land use considerations and environmental principles into the municipal planning and decision-making process. A TMP often recommends a combination of policies and new or upgraded infrastructure to support the long-term growth in the community.

TMP Vision and Engagement

TMP Vision Statement:

*"As the City grows, Peterborough's transportation network will be enhanced to create a **low-emissions, responsive system** where people of **all ages and abilities** can move **safely, sustainably and efficiently**, no matter how they choose to travel, today and in the future."*

The Vision Statement reflects the City's priorities for transportation planning that were established through extensive consultation and engagement processes undertaken in developing the Plan. The TMP consultation and engagement sessions included Technical Advisory and Steering Committee Meetings, online surveys, Community Working Group Meetings, and Public Information Centres (PICs). TMP community outreach included:

- 4 Phases of Consultation
- 6 Technical Advisory Committee Meetings (City and County Staff)
- 5 Steering Committee Meetings (City and County Elected Officials and Staff)
- 5 Community Working Group Meetings
- 3 PICs with over 240 participants
- 3 Public Surveys with 1,300+ responses

Transportation Hybrid Strategy Development

Standalone measures, such as improvements in cycling or transit, were explored during the TMP process and it was quickly realized that individual elements would not address future growth alone and were unlikely to result in significant travel behaviour shift. For this reason, the TMP developed an approach with Hybrid Strategies that would encourage and even force a shift in travel behaviour through policies and infrastructure investments that prioritize multi-faceted elements and complimentary measures across all methods of travel.

There are four transportation themes and associated elements for evaluating strategies outlined below. These point the City in the direction of a more balanced approach to transportation infrastructure investment, in favour of prioritizing sustainable modes of travel over single-occupancy vehicle use.

Walking & Cycling

- Moderate/Aggressive investment in expanding the sidewalk network
- Increase the length of new cycling facilities (on-road, trail, separated)
- Implement cycling-specific programs and policies

Transit

- Implement new transit network
- Increase in service hours and frequency
- Increase transit speed
- Subsidize transit fees

- Switch to emission free fleet
- Design and implement exclusive/dedicated transit lanes

Roads

- Enhance Intersection Improvement and safety
- Widen the select roads with congestion conditions
- Optimize signals
- Implement programs for connected and automated vehicles
- Implement transit specific improvements such as queue jump lanes and transit signal optimization

Policies

- Re-evaluate parking rates and regulations
- Implement congestion charging
- Adjust land use approach

City Council identified four primary performance criteria that create the basis for measuring the effectiveness of each strategy. They include:

- Travel Mode Shift
- Safe Transportation Systems
- Reduced Capital and Maintenance Costs
- Meeting Climate Change Mitigation Targets

Five Hybrid Strategies were developed with different combinations of infrastructure investment and policy measures which encompassed everything from the status quo through to an emphasis on sustainable travel and climate change focus. These hybrid Strategies were then assessed against the performance criteria, and designed to achieve the City's transportation objectives.

1. Status Quo
2. Nudge
3. Shift
4. Transform
5. Climate Focus

Each hybrid strategy included aspirational mode share goals based on the assembled elements identified in background studies and testing of individual elements. For example, the **Cycling Master Plan** assessed the cycling potential related to increased infrastructure and the **Transit Route Review and Long-Term Growth Strategy Study** looked at potential transit use increase based on increased levels of service.

Assumptions and Characteristics of Hybrid Strategies

Each hybrid strategy underwent analysis to understand how mode share percentages would shift the implementation of strategic infrastructure improvements as well as transportation programming and policies. The more “transformational” a strategy was, the less investment was required on road infrastructure improvements. At the same time, the capital investment/operating costs for the more transformational strategies increased. The higher investment in alternative modes of travel results in more sustainable transportation system. **Table 1** presents a summary of the potential Additional cost of Five Hybrid Strategies over a 30-year period.

Table 1: Summary of Potential Additional Cost of Five Hybrid Strategies (over 30-year period)

Mode of Improvement	Hybrid Strategies				
	S1: Status Quo	S2: Nudge	S3: Shift	S4: Transform	S5: Climate Change
Vehicular	\$484M	\$307M	\$261M	\$189M	\$98M
Transit	\$63M	\$63M	\$182M	\$293M	\$701M
Active Transportation (Walking and Cycling)	\$18M	\$69M	\$69M	\$137M	\$137M
Intersection and Safety Improvements ¹	\$23M	\$29M	\$37M	\$36M	\$23M
Total (Approximate)	\$588M	\$468M	\$549M	\$655M	\$959M
¹ Calculated as an approximate percentage of the vehicular improvement cost. The percentage is calculated in increments of 5% between S1 through S5.					

Approved Hybrid Strategy

Building upon the analysis of the strategies, the recommended path forward was a combination of Strategy 3 (S3) “Shift” and Strategy 4 (S4) “Transform”. Essentially all of S4 without the change in land use policies in the Official Plan, was recommended to form the basis of the City’s transportation plan.

The Hybrid Strategy was recommended for its ability to best meet the four Council priorities with significant shift to more sustainable modes of travel, such as active transportation and transit, with enhanced safety as the primary focus of road improvement programs spanned through a 30-year period.

Table 2 summarizes the combined elements for the recommended strategy.

Table 2: Elements of recommended Strategy

Element	S3: Shift + S4: Transform
<i>Roads</i>	
New Lane KMs	30
Volume to Capacity Threshold for Additional Road Construction	V/C > 1.10
<i>Active Transportation (AT)</i>	
Walking	Aggressive sidewalk expansion
New Cycling (KM)	80 -160 (funding designated for 80km, with up to 160km constructed if additional infrastructure funding becomes available)
<i>Transit</i>	
Number of Additional Buses	30
Increase in Service (hours)	71%
<i>Policies</i>	
Parking Rates	Increase Downtown all-day parking rates
Land Use	2051 Land Use (Official Plan)

The pros and cons of the Approved Hybrid Strategy are as follows:

Pros

- Meets the four Council Priorities
- Significant shift to more sustainable modes of travel (active transportation and transit)
- Enhanced safety as the primary focus of road improvement programs up to the 2051 planning horizon
- Reduced need for road widenings

- 10 to 13% reduction in GHG emissions and possibly higher with electrification of vehicles

Cons

- Higher operating costs as the frequency of Transit is increased with additional service hours
- Potential increase in delay/congestion on the road network
- Additional congestion tolerated to encourage shifts
- Higher parking costs for long term (all day) parking in downtown and in neighbourhoods

The approved combination Hybrid Strategy adopts a road strategy that focuses on optimizing the existing road network using intersection improvements and advanced signal technology, increasing capacity and limits the need for road widening or new roads. A higher level of peak hour traffic congestion will be tolerated with a volume to capacity ratio of 1.10 needed before road widening would be considered (as opposed to the City's current threshold of 0.85). As a result, only 30 new lane kilometres of road widening is anticipated in the next 30 years. Instead, investments will be made in the walking, cycling, and transit networks to support these modes, with an aggressive approach to sidewalk construction and infill of missing sidewalk links, a cycling strategy in line with the Cycling Master Plan, which sees 80 kilometres of additional cycling facilities and potentially up to 160 kilometres of cycling facilities. The transit network will increase its current service hours by over 70% to encourage people to shift modes from cars to transit.

How Does Transit Fit Within the TMP?

Transit is a key component of TMP strategy going forward. Investment in transit will focus on a 71% increase in service hours, where peak period frequency would improve to 15 minutes on key corridors, 20-30 minutes elsewhere, and 30 minutes during off-peak periods. Through the approved strategy, further consideration should be given to subsidized or free transit passes to increase equity and accessibility. Road improvements to support transit may include measures such as queue jump lanes, transit signal priority, and transit-dedicated lanes for improved travel times.

The TMP identifies a number of investment and policy measures to improve Transit. At the same time, the TMP is very reliant on the success of Peterborough Transit. The TMP, relies on continued (extensive!) growth of the transit service to offset the need for costly and unsustainable road investment designed to support the single occupant vehicle.

The TMP and Long-Term Transit Growth Strategy both establish a long-term goal of 12% of all trips in the City being taken on Transit. The Transit Strategy and policy initiatives identified in the TMP are intended to achieve this mode share.

To be clear, this is a massive increase from the current 3% modes share we have today. Analysis by multiple professional transportation planning consultants have confirmed the shift in transportation is possible, if the City follows through on its TMP and Transit Strategy.

Summary

In conclusion, the Transportation Master Plan (TMP) for the City of Peterborough provides a comprehensive and community-based approach to address the City's transportation needs. Through extensive consultation and engagement processes, the TMP has developed a vision statement that reflects the City's priorities for transportation planning. The plan recognizes the limitations of standalone measures and proposes a hybrid strategy that combines policies and infrastructure investments across all modes of travel to encourage a shift in travel behavior towards more sustainable options.

The TMP evaluates five hybrid strategies and establishes mode share goals for each strategy, focusing on walking, cycling, transit, and reducing single-occupancy vehicle use. It also analyzes the performance criteria and costs associated with each strategy. Based on the analysis, the recommended hybrid strategy combines elements from Strategy 3 (Shift) and Strategy 4 (Transform), emphasizing active transportation, transit, and road improvements that enhance safety and reduce congestion.

The recommended strategy places significant emphasis on transit investment, including increased service hours, improved frequencies, and transit priority measures such as queue jump lanes and signal priority. The long-term transit network is designed to support growth areas and improve system connectivity, with a focus on the grid network. By recommending investments in transit, the approved TMP aims to provide an attractive transit system that is customer-centered and encourages modal shift, ultimately contributing to the City's mode share and GHG emission reduction goals.

Overall, the recommended hybrid strategy and the proposed transit network improvements outlined in the TMP present a comprehensive and forward-thinking approach to address the City's transportation challenges. By prioritizing sustainable modes of travel and investing in transit infrastructure, the City of Peterborough aims to create a more accessible, efficient, and environmentally friendly transportation system for its residents.

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