



City of
Peterborough

To: **Members of the General Committee**

From: **Cynthia Fletcher,
Commissioner of Infrastructure and Planning Services**

Meeting Date: **December 2, 2019**

Subject: **Report IPSTR19-028
Framework to Develop the City's new Transportation Master Plan**

Purpose

A report to recommend a framework to develop the City's new Transportation Master Plan.

Recommendations

That Council approves the recommendations outlined in Report IPSTR19-028 dated December 2, 2019, of the Commissioner, Infrastructure and Planning Services as follows:

- a) That the framework to develop the City's new Transportation Master Plan, as outlined in Report IPSTR19-028 be approved;
- b) That a Request for Proposals for professional consulting services to develop a new Transportation Master Plan be issued in accordance with the City's Procurement By-law;
- c) That a Steering Committee be established for the Transportation Master Plan project;
- d) That Councillor Akapo and Councillor Vassiliadis, as Co-Chairs of Transportation be appointed and that a member of Peterborough County Council be invited to serve on the Transportation Master Plan Project Steering Committee; and

- e) That the CAO be authorized to transfer up to \$225,000 in additional funds and increase the project budget in the event additional funding is required to complete the project and that Administrative Staff Committee be authorized to approve up to a \$225,000 amendment to the eventual award of the Request for Proposals to ensure the timelines are met.

Budget and Financial Implications

In April of 2018, via Report USDIR18-002, Council approved a Capital Project for the Transportation Master Plan in the amount of \$900,000.

The additional funding referenced in recommendation e), if required, can be accommodated within the uncommitted funding in the previous Parkway Corridor Extension capital budget (2019 Capital Reference Number 5-9.12), page 216-217. The current balance in the account is \$1,790,000.00.

Recommendation e) is proposed due to the aggressive schedule of the Transportation Master Plan and will allow staff to transfer budgets and approve amendments in a timely manner if unexpected work is necessary beyond the original scope of work to ensure the deadlines are met.

Outcomes of the Transportation Master Plan will result in recommendations for a series of future transportation improvements, which will be incorporated into future budget reviews.

Background

The Transportation Master Plan (TMP) was last updated in 2012 and established a 20-year vision for transportation in the City of Peterborough to 2031. The Plan included a strategic focus on reducing the reliance on single occupant auto travel in the community and encouraging increased use of more sustainable modes of travel.

At its meeting of December 11, 2017, Council approved a motion requesting "That staff provide a status update on the Transportation Master Plan by the second quarter of 2018."

Report IPSTR18-015, approved by Council at their meeting of July 9, 2018 summarized the key recommendations from the previous TMP and provided an update on the status of each recommendation. Of the 102 recommendations developed as part of the 2012 TMP, 60% of the recommendations can be categorized as ongoing initiatives that have been completed, are underway or are multi-year initiatives that have been started with future work still to be done.

The 2012 TMP was developed in accordance with the 2006 Provincial Places to Grow Plan, where the 2031 population forecasts of 88,000 people and 42,000 jobs within the

City provided the planning context for the study. In May 2017, an update of the Provincial Growth Plan was approved. The Province also updated the 2031 growth forecasts for the City to 103,000 people and 52,000 jobs by 2031, and 115,000 people and 58,000 jobs by 2041. These latest forecasts now form the basis for the Official Plan update, as is required by Provincial policy, and will also form the basis for the update to the TMP.

Recognizing the changes to the land use planning policies that are expected to be contained within the Official Plan update, combined with the age and status of the previous 2012 Comprehensive Transportation recommendations, Council approved the following motion on May 27, 2019:

- a) That staff be directed to begin a Transportation Master Plan;
- b) That a report on the Terms of Reference for this study be presented to Council no later than December 2019; and
- c) That staff present the findings of the Transportation Master Plan to Council no later than November 2021.

Under the **Environmental Assessment Act**, a “Terms of Reference” is a term used exclusively to describe a document that is created to guide how an Individual Environmental Assessment is to be conducted. Developing a “Terms of Reference” is a provincially directed process, including public and agency consultation, and is submitted for the review and approval of the Minister of Environment, Conservation and Parks before an Individual Environmental Assessment can begin. For this report, the term “framework” is being used for the outline of how the TMP will be developed.

What is a TMP?

The Municipal Class Environmental Assessment (MCEA) establishes an assessment process (under the **Environmental Assessment Act**) to guide municipalities as they plan municipal infrastructure projects. The MCEA is a process approved by the Minister of the Environment, Conservation and Parks.

The Municipal Class EA incorporates five phases in the planning process:

1. Problem / Opportunity Definition,
2. Assessment of Alternative Solutions,
3. Assessment of Alternative Designs for the Preferred Solution,
4. Preparation of an Environmental Study Report, and
5. Implementation (design, construction and monitoring)

A TMP is recognized and supported under the Municipal Class Environmental Assessment. TMP's 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. It often recommends a combination of policies and new/upgraded infrastructure to support long-

term growth in the community. The plan also provides a guide to assist in day-to-day municipal decision making, annual capital budget forecasting and priority setting.

A TMP will often identify the need for projects and will assess a series of broad planning solutions to determine an integrated set of improvements to address and support existing and future needs. Given their broad geographic context, a TMP will typically stop short of completing the detailed technical background studies and preliminary designs that are necessary to obtain provincial approval for each of the recommended projects.

A TMP will typically satisfy Phases 1 and 2 of the Municipal Class EA process.

Many of the larger infrastructure projects recommended in a TMP are “Schedule B” and “Schedule C” projects and will still require further study prior to being approved for implementation. For most projects, the completion of Phases 3-5 of the Municipal Class EA planning process will still be required. Each project requires a preliminary design and an Environmental Study Report. Some very complex projects may also undertake additional more detailed study of Alternative Solutions (Phase 2) during a subsequent Class EA Study to ensure that a thorough assessment process is utilized.

Table 1 summarizes a number of key differences between a TMP and Class EA project undertaken for a specific transportation project.

Table 1 – TMP Compared to Class EA Study

	Transportation Master Plan	Transportation Class EA Study
Extent	City wide or broad planning area	Defined corridor or localized study area
Planning Horizon	Typically, 20 – 30 years, Growth Plan for the Greater Golden Horseshoe encourages protection of long-term infrastructure corridors as part of transportation planning	Typically, 5-10 years
What determines need?	<ul style="list-style-type: none"> • Accommodate planned growth • Achieve policy objective 	<ul style="list-style-type: none"> • Recommended in a TMP or Secondary Plan • Existing operational / safety problem

Range of Solutions Studied	<p>Broad range of strategic solutions:</p> <ul style="list-style-type: none"> • Policy and/or services (i.e. improve transit to reduce auto traffic) • Infrastructure - new or expanded 	<p>Rely on TMP for assessment of broad alternative solutions.</p> <p>Focus is assessing localized specific solutions:</p> <ul style="list-style-type: none"> • improve / widen an existing road • build a new road • close a road • improve an intersection
Scope of Study	<ul style="list-style-type: none"> • What type of policies are needed? • What type of infrastructure or service is needed? • What capacity is required, and where is it needed? 	<ul style="list-style-type: none"> • How should the infrastructure be designed? • How will the infrastructure operate? • What are the adverse effects and how can they be managed? • How are adjacent properties affected?
How are impacts / benefits assessed?	<ul style="list-style-type: none"> • High Level assessment using background mapping • Recognize that many effects can be reduced or avoided during design phase • Focus on “potential for effects” • System wide performance • Assess pros / cons of alternatives 	<ul style="list-style-type: none"> • Detailed site-specific assessment and background / field studies • Impact assessment considers site specific features / proposed design • Impact assessment considers measures to mitigate effects • Detailed site-specific performance • Detailed comparative evaluation of alternatives
Public Consultation	<ul style="list-style-type: none"> • Yes – Extensive and broad • Focus on vision, strategic choices, general assessment of project impacts / benefits 	<ul style="list-style-type: none"> • Yes – will vary by project • Focus on project design, detailed assessment local impacts, mitigation measures, and project benefits
Cost Certainty	<ul style="list-style-type: none"> • Order of Magnitude • Based on representative costs from similar projects • Large contingency - numerous unknowns 	<ul style="list-style-type: none"> • Planning Level • Based on Preliminary Design (20-30%) • Smaller contingency – fewer unknowns

Approvals	<ul style="list-style-type: none">• Report approved by Council• No Provincial Review or Approval (no appeal)• Recommended projects can be appealed at later stages• Additional/more detailed study required before construction (i.e. Class EA)	<ul style="list-style-type: none">• Council approval to issue "Notice of Completion"• Project subject to Provincial Review / Approval• Province can reject project, approve with changes, or require more study• Approval allows for detailed design and construction to proceed
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Proposed Framework for the Transportation Master Plan Update

Goals

The goal of the TMP is to set out the City's transportation network improvements, changes, new facilities, policies and procedures for the next 20 years and beyond.

Use of Consulting Resources

An external Consulting team will be retained to complete the TMP work program. The Consultants will provide a team comprised of specialized experts in various disciplines such as Land Use, Transportation Planning, Active Transportation, Transit, Travel Demand Forecasting, Environmental Studies, Economic Analysis, and Public Consultation.

An RFP will be released to bidders after Council provides approval of the proposed framework for the study. The RFP will be awarded in accordance with the Procurement Bylaw.

Study Process

The study process will follow the Municipal Engineers Association Class EA process for Master Plans. This is typical of how a TMP study is conducted across the province. Following this process will ensure that the planning and decision-making process can be relied upon during subsequent Municipal Class EA or Individual EA studies, that will still need to be completed for many of the recommended infrastructure projects identified in the TMP.

The study will be guided by the Transportation and Growth Management policies in the new Official Plan and will adhere to the planning requirements of both the Provincial Policy Statement and the Growth Plan for the Greater Golden Horseshoe.

The Class EA process includes thorough assessment of needs and problems, development of solutions, assessment of effects and public and agency consultation.

The work plan will be set up as a series of sequential major milestones, which will be presented to Council for approval.

Council

The project plan provides multiple opportunities for Council to provide key guidance, input and oversight to the process. At key intervals, there will be formal reports to Council so that approval and direction is obtained before the study advances to the next phase. Those key intervals are as follows:

- Problem and Opportunities
- Recommended TMP

Council will also receive a series of reports and will provide direction to the background study recommendations regarding the transportation system, which will be adopted into the TMP as approved by all of Council (eg. The East Side Transportation Study, Traffic Calming review etc).

Steering Committee

It is proposed that a Steering Committee (SC) be established. The SC's role is to assist in keeping the project on scope, schedule and budget. The SC will be responsible for reviewing draft study deliverables and preliminary recommendations at each key milestone of the project

It is proposed that the Steering Committee include Councillor Akapo and Councillor Vassiliadis, one County Councillor, to ensure that the City's TMP is in alignment with the County TMP and the Commissioners, with support from the Consultant and technical staff.

Meetings will be set at regular intervals and aligned with the project schedule and milestones.

Technical Advisory Committee

It is also proposed that a Technical Advisory Committee (TAC) be established made up of representatives from various City divisions, including Planning, Transportation, Infrastructure Management along with project management and additional resources as necessary. It is also intended to include an appropriate member of County staff as well.

The committee will meet regularly throughout the project to offer technical advice and guidance, as well as to assist with consultation programs, background information, Council and SC reporting.

Proposed Work Plan

A brief overview of the proposed Work Plan is summarized below. The full Work Plan, which will be included in the RFP, is attached as Appendix A to this report. Any required change to this plan would be addressed through a future report to Council.

1. The **Problem / Opportunity Definition** Phase: to determine the problem to be solved or the opportunity to be assessed. For the first phase of the TMP, this is proposed to be completed as a two-step process.

- 1.1. **Transportation Vision and Performance Criteria:** The first step in Phase 1 will focus on consultation with the community to seek feedback on citizens' vision for transportation in the City today and in the future and translate this vision into performance criteria.

The criteria developed as part of this process will provide the framework for determining existing or future problems, the degree to which enhancements to the transportation system are required, and for the evaluation of various alternatives.

- 1.2. **Current and Future Problems / Opportunities:** The second step in Phase 1 includes the technical assessment and evaluation of the "State of the Transportation System", today and in the future. This step will review the performance of the transportation system under current conditions and will prepare forecasts of future travel demands for future horizon years based on a range of land use / growth scenarios. Using the vision and problem criteria developed in step one, the Consultant will present an assessment of current / future opportunities and transportation deficiencies that should be addressed in TMP.

2. **Assessment of Alternative Solutions Phase:** The second phase of the process requires proponents to identify and assess a range of Alternative Solutions to address the Problem to be solved or the Opportunity to be assessed that was determined in Phase 1. This second phase of the TMP is proposed to be completed as a three-step process:

- 2.1. **Transportation Strategy Development and Mode Share Targets:** The Transportation Strategy Development and Mode Share Targets step will rely on a series of background studies that were initiated in response to Council approval of Report USDIR18-002.

- Transit Route Review and Long-Term Growth Study
- Traffic Operations Review
- Signal Improvement Program

- A number of these studies are currently underway and recommendations from each will be presented to Council for approval. The TAC will work to incorporate the outcomes of these studies into the TMP as they become available. Appendix B includes an overview of these studies and their relationship to the Transportation Master Plan.

Exhibit 1 – Schedule for Background Studies / TMP

The TMP will rely on the recommendations from the background studies to develop an overall Transportation Strategy for the City that will identify the benefits of investments in optimizing our current system (intersections, signal coordination, etc) and in supporting travel by other modes.

2.2 Development of Infrastructure Alternatives: Development of Infrastructure Alternatives – The second step in phase 2 of the Municipal Class EA process will

assess the need for additional road network capacity improvements, assuming all of the initiatives identified in the approved Transportation Strategy and achievement of the future Mode Share Targets established to guide the TMP update are to be implemented. This work will use the City-wide transportation model and the Transportation System Performance Criteria developed in Phase 1 to determine the extent of road deficiencies and the types of improvements that will still be needed to address future needs.

Part of this step includes a Key Decision Point that could have a significant bearing on the final stages of the TMP.

As reported to Council in 2017, 2018 and in 2019, the Minister of the Environment, Conservation and Parks (MOECP) issued an Order to comply with Part II of the **Environmental Assessment Act** in response to the City's submission of the Parkway Corridor Class EA.

The Order is very broad, and it has been confirmed with MOECP staff and the Director of the Environmental Assessment and Approvals Branch, that the Order is not limited to the project itself, but also applies to the entire project planning and decision-making process. This means the entire process needs to be redone if the City wants to move forward with any infrastructure project that addresses the same problems that were identified in the original Parkway Corridor Class EA. The Order represents a legal requirement under the **Environmental Assessment Act**.

A key decision for Council may occur when the new TMP study reaches the point where the future road network problems have been identified. If new road capacity is needed to accommodate north-south travel demands on the west side of the Otonabee River or if improvements to better connect the road network in the Clonsilla Avenue, Goodfellow Road, and Sherbrooke Street area to the south end of the City are identified, these problems reflect the same problem statement covered in the Parkway Corridor Class EA.

If the recommendations do overlap, any future planning undertaken to address these problems needs to occur through an Individual EA (IEA) according to the Order issued by the Minister. The more detailed work undertaken during the IEA will influence the conclusions and final recommendations.

At this point, Council will receive a project update and may be asked to provide direction to the TMP project team, if the recommendations overlap with the scope covered under the Minister's Order. The options staff are aware of at this time could be:

Pause the TMP and utilize the work completed to:

- A) secure MOECP approval of a formal Terms of Reference for an IEA. Subsequently, complete and obtain EA approval for all of the projects recommended in the Master Plan.
- B) secure MOECP approval of a formal Scoped Terms of Reference for an IEA that addresses the need to accommodate north-south travel demands on the west side of the Otonabee River and/or to better connect the road network in Clonsilla Avenue, Goodfellow Road, and Sherbrooke Street area to the south end of the City.

The difference between A) and B) is that B) is a more limited study, scoped to only address improvements and alternatives that are able to address the problems originally identified in the original Parkway Corridor Class EA Study, whereas option A would include the necessary detailed work to obtain EA approval for all projects identified in the Master Plan. The costs and potential benefits of option A will be influenced by the findings of the work completed during the TMP and the relationships between potential improvement projects and would be part of a future report to Council.

2.3 Preferred Infrastructure Plan: If the new TMP Study reaches the point where the future road network problems have been identified and they do **not** overlap the problem statement covered in the Parkway Corridor Class EA, the next phase of the TMP study will complete the high level assessment and evaluation of various road network improvement alternatives.

The assessment and evaluation criteria will incorporate the Transportation System Performance Criteria and Transportation Vision developed in Phase 1 and will also include a consideration of climate change objectives and climate resiliency along with the potential effects on other aspects of the natural, social, cultural, built, and economic environments.

An assessment of the pros / cons of various alternatives will be completed to develop a set of recommended road network improvement projects that will need to be completed as the City continues to grow.

Order of magnitude capital costing and implementation priorities / timing for each project will be developed to facilitate future capital budget planning.

Final Reporting

The final report will include the research, technical work, public consultation and decision-making process completed to date.

Consultation

Public and agency engagement will occur throughout the project and specific events will be held prior to every Council reporting milestone. Engagement will take place in a variety of methods including stakeholder meetings, public open houses, online engagement, and targeted workshops.

Council Participation, Study Milestones, and Schedule

The TMP will have long term community and financial implications for the City and its residents. As such the work plan is set up to include multiple decision milestones. Public Engagement will be undertaken during each phase of the project prior to each decision milestone and feedback received will be summarized and considered when developing recommendations.

The proposed work plan and approval milestones are summarized in Table 1 along with a suggested timeframe for phase of work.

Table 1 – Transportation Master Plan Work Plan Milestones

Class EA Steps	TMP Work Plan Milestones	Approval and Direction	Expected Time Frame
Procurement & Award	N/A -RFP and Bid Evaluation	Per Procurement By-Law	Jan 2020 – April 2020
1) Problem / Opportunity Definition	Transportation Vision & Performance Criteria	Steering Committee	April 2020 – July 2020
	Current and Future Problems / Opportunities	Steering Committee and Council	July 2020 - December 2020
2) Assessment of Alternative Solutions	Transportation Strategy Development and Mode Share Targets	Steering Committee and Council	December 2020 – March 2021
	Infrastructure Improvement Needs Key Decision Point	Steering Committee and Council	March 2021 – June 2021
	Recommended Transportation Plan and Implementation Schedule	Steering Committee and Council	June 2021 – November 2021
Final Report	Report Finalization		Follows Council Approval of new TMP

Council has directed the TMP be completed by November 2021. This is an extremely tight timeline for a project of this nature. The work plan and approval milestones have been designed to allow for significant public consultation, to integrate with the other ongoing supporting studies, and to allow for input and decision making by Council at key project milestones.

The schedule assumes approval of the work plan in December 2019, an RFP issued in January 2020 and the award of the project by April 2020. The Final TMP, consultation, recommendations and Council reporting will be completed in November 2021.

Summary

An aggressive work plan has been established to meet the timelines laid out by City Council for completion of a new Transportation Master Plan. The plan includes for ongoing community engagement as well as multiple decisions points for City Council.

Submitted by,

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Attachment

Appendix A – Proposed Workplan - Transportation Master Plan
Appendix B – Overview of Studies

Appendix A

Transportation Master Plan: Proposed Work Plan (to be included in an RFP)

The Transportation Master Plan project is intended to be a broad ranging study that lays out the preliminary planning for the City's long-term transportation network. In order to do this, a systematic approach to the study is required.

After award of the contract, the initial start up process and introductory meetings with the Technical Advisory Committee (TAC) and Steering Committee (SC) will be scheduled. The selected consultant will submit a data request for GIS, traffic and planning information. The schedule, milestone dates and administrative processes will be confirmed (invoicing, work scope changes, media, public notice requirements, etc.)

The project will then begin to focus immediately on the TMP tasks.

1. Problem / Opportunity Phase - The first phase of the Class EA process requires proponents to determine the problem to be solved or the opportunity to be assessed in the study. For the first phase of the TMP, this work is proposed to be completed as a two-step process.

- 1.1. Transportation Vision & Performance Criteria: The first step will focus on consultation with the community and SC to seek feedback on their vision for transportation in the City today and in the future.

The transportation vision will focus on identifying the key transportation outcomes that will:

- support planned growth;
- contribute to the achievement of community policy objectives;
- support the economic prosperity of the community; and
- maintain or enhance the quality of life experienced by residents.

These outcomes will then be translated into measurable performance criteria that reflect local conditions and how residents expect their transportation system to perform.

To achieve this the following key tasks will be expected:

Key Tasks

- i. Background Review

- Review the previous 2002 and 2012 Transportation Master Plan Reports
 - Review Draft Official Plan and background reports / material
 - Review other supporting municipal plans such as, but not limited to, the Community Sustainability Plan, the Climate Change Action Plan, the Age Friendly Plan, Municipal Cultural Plan and Vision 2025, Accessibility Plan, recent Transportation Class EA reports, and Secondary Plans.
- ii. Data Collection and Review
- Assemble existing transportation count data collected by the City for auto, pedestrians, bikes, trucks at various locations across the City
 - Obtain recent travel survey data for Greater Peterborough Area from Transportation Tomorrow Survey (2016) and the supplementary travel survey completed as part of Transit Route Review and Long Term Growth Study (2018)
 - Obtain and assemble background mapping of key environmental, cultural and heritage features and constraints from City GIS files and other secondary sources such as Provincial Ministries, the County of Peterborough, ORCA, etc.
 - Review existing Regional Transportation model for Greater Peterborough Area
- iii. Development of Draft Transportation Vision Statement
- Assemble key themes, goals and objectives from background material review
 - Undertake a review of Best Practices from other Communities
 - Prepare draft vision statement reflecting key policy objectives
 - Identify draft transportation related outcomes based on the vision statement that relate to supporting planned growth; achievement of community policy objectives; supporting the economic prosperity of the community, and maintaining or enhancing the quality of life experienced by residents
- iv. Transportation Performance Criteria Development
- Undertake a review of Transportation Performance Criteria used in other communities

- Identify key performance criteria that can be used in the City context to assess if, or how well, the City is achieving the various desired outcomes on a city wide, neighbourhood, or local scale
 - Propose data sources, measures, and methodologies to project or estimate future performance of the transportation system
- v. Community Consultation – Transportation Vision & Performance Criteria
- Develop a synthesis report of background research and data used to develop the draft transportation vision and performance criteria
 - Develop a collaborative consultation program for this phase of the project to obtain input on a transportation vision and performance criteria for the community through a variety of means such as workshops, surveys, focus groups, etc
 - Prepare consultation material suitable for display at public open houses and other events, digital engagement, and via other forms of engagement and outreach
 - Organize and attend 1 Public Open House, intended to provide a forum for the public and stakeholder organizations to provide feedback on draft material, and prepare a Consultation Summary Report
- vi. Steering Committee Meeting 1 – Transportation Vision & Performance Criteria Approval
- Assemble the draft Transportation Vision and Performance Criteria key findings and present recommendations for review and approval by project Steering Committee

1.2. Current and Future Problems / Opportunities: The second step in Phase 1 of the work plan includes the technical assessment and evaluation of the “State of the Transportation System”, today and in the future. The task will review the performance of the transportation system under current conditions and will prepare forecasts of future travel demands for future horizon years based on a range of land use / growth scenarios. Using the vision and problem criteria developed in step one, the Consultant will present their assessment of current / future opportunities and transportation deficiencies that should be addressed as part of the study, for ultimate approval by Council.

Key Tasks

- i. Current State of the Transportation System
 - Use data collected and the Transportation Performance Criteria approved in step 1, prepare an assessment of the State of the Current Transportation System
- ii. Land Use Forecasts and Growth Scenarios
 - Work with the City Planning Division and the County staff to review available future land use plans and forecasts for key planning horizon years of 2031, 2041.
 - Work with the City Planning Division and the County staff to develop an estimated “Full Build Out” scenario for existing neighbourhoods, new greenfield areas, and designated intensification areas to be used for long term (beyond 20 year) scenario testing.
 - Develop 2-3 alternative growth scenarios for the purpose of sensitivity testing
- iii. Future Base Line Transportation Forecasts
 - Update the Transportation Model to reflect planned or committed projects assumed to be completed by other jurisdictions (MTO, Townships, County of Peterborough, Metrolinx / GO Transit, etc.) for each planning horizon year based on published plans / budgets, etc.
 - Undertake transportation model runs using planned growth forecasts for the 2031 and 2041 planning horizon years for the AM Peak, Mid-Day Peak, and PM Peak periods to provide a base line for the assessment of future Transportation Performance Criteria.
- iv. Assessment of New Technologies and Emerging Trends
 - Identify new, emerging technology and/or demographic and transportation trends that may influence future transportation needs
 - Summarize the potential implications on growth / transportation demands / transportation infrastructure needs / mode choices, all in the context of an estimated City population of 115,000 residents by 2041
 - Undertake research / develop a methodology to estimate the potential range of effects of various transportation technologies and trends on travel demands and mode choices, for the purpose of sensitivity testing

- Provide a working paper on the Role of New Technologies and Emerging Trends including recommendations on how to accommodate for each possible initiative within the Transportation Master Plan
- v. Sensitivity Testing of Transportation Forecasts
- Develop 3-4 modeling scenarios that vary from the assumptions used to develop the baseline travel demand forecast and incorporate the 2-3 land use / growth scenarios noted in 1.2.ii, and the potential range of effects of new technology and emerging transportation trends
- vi. Assessment of Problems / Opportunities
- Prepare an assessment of the “Future State of the Transportation System” using the base forecasts developed in task 1.2.iii
 - Develop a methodology to incorporate the sensitivity testing of transportation forecasts in 1.2.v to inform the assessment of future problems or future opportunities that should form the basis for the Transportation Master Plan
- vii. Community Consultation – Transportation Problems & Opportunities
- Develop a synthesis report of background research, data used, key assumptions, and results of transportation demand forecasting work tasks used to develop the draft transportation problems and opportunities
 - Develop a consultation program for this phase of the project to share findings and seek feedback on results and recommendations
 - Prepare consultation material suitable for display at public open houses and other events, digital engagement, and via other forms of engagement and outreach
 - Organize and attend 1 Public Open House, intended to provide a forum for the public and stakeholder organizations to provide feedback on draft material, and prepare a Consultation Summary Report incorporating feedback received
- viii. Steering Committee Meeting 2 – Transportation Problems & Opportunities
- Assemble the draft Transportation Problems & Opportunities findings and the feedback from public consultation and present recommendations for review by project Steering Committee
 - Incorporate feedback and direction from the Steering Committee as appropriate

- ix. Council Presentation 1 - Transportation Problems & Opportunities Approval
 - Prepare a presentation (and assist in the development of a supporting staff report) to summarize the work undertaken in Phase 1 of the study, key findings and recommendations
 - Identify key decisions required from Council to support next steps of the study
- 2. Assessment of Alternative Solutions Phase – The second phase of the Class EA process requires proponents to identify and assess a range of Alternative Solutions to address the problems to be solved or the opportunity to be assessed in the study. This second phase of the TMP is proposed to be completed as a three-step process.
 - 2.1. Transportation Strategy Development and Mode Share Targets: The first step in Phase 2 will assess a range of policy and infrastructure alternatives that should be considered to address the problems and opportunities identified and approved in Phase 1. This work will rely on a series of ongoing studies that were initiated by the City to take a step back and reassess the feasibility and costs associated with implementing more aggressive approaches to transit use, optimizing our signal system, investing in cycling and walking infrastructure, and implementing intersection improvements; prior to proceeding with additional road improvement projects.

A number of these studies are currently underway.

The technical work contained in these studies is not included in the proposed work plan for the new Transportation Master Plan, however the Consultant is expected to review these ongoing studies and based on the recommendations of each study, develop an overall integrated Transportation Strategy for the City. A suggested overview of the key tasks in this phase of the study are summarized below.

Key Tasks

- i. Review of recommendations from background studies
 - Transit Operations Review and Long-Term Growth Study
 - Review study recommendations in relation to the long-term vision and growth strategy for transit in the City.
 - Assess future mode share targets for transit use and resulting ridership forecasts. Develop transportation model inputs to test and evaluate recommended scenario for 2031 and 2041 horizon years.

- Review recommended service strategy and identify implications on the City's Transportation Strategy.
 - Summarize policy actions and investments needed to achieve recommended plan for incorporation into TMP.
- Traffic Operations Review & Traffic Calming Policy
 - Review study recommendations in relation to the base network assumptions used in the transportation model.
 - Determine appropriate adjustments to road capacities, travel speeds, and / or travel times used as key inputs in the model to reflect recommended improvements or implementation of recommended traffic calming measures.
 - Determine high level feasibility for application of similar measures on other road corridors (not studied in the Traffic Operations Review) and in other neighbourhoods (not covered in the study), and update model inputs to reflect City-wide approach.
 - Undertake model runs for 2031 and 2041 to assess impact of Traffic Operations improvements / Traffic Calming on network wide performance measures
 - Summarize findings and results in a working paper
 - Incorporate improvement projects and recommendations for expansion of program to other corridors / neighbourhoods for inclusion in TMP.
- Signal Improvement Program
 - Review results of pilot study for adaptive signal control and study recommendations.
 - Determine appropriate adjustments to road capacities, travel speeds, and/ or travel times used as key inputs in the model to reflect recommended improvements or implementation of recommended traffic signal co-ordination measures.
 - Determine high level feasibility for application of similar measures on other road corridors (not studied in the Pilot Study), and if appropriate, update model inputs to reflect City-wide approach.

- Undertake model runs for 2031 and 2041 to assess impact of improved Signal Co-ordination / Adaptive Signal Control on network wide performance measures
 - Summarize findings and results in a working paper
 - Incorporate improvement projects and recommendations for expansion of program to other corridors in TMP.
- Cycling Network Update
 - Review study recommendations in relation to the long-term vision and growth strategy for cycling and active transportation in the City.
 - Undertake research on walking and cycling mode shares in other jurisdictions with a similar land use context and climate, and develop reasonable mode share targets for walking and cycling that reflect Growth Management and Active Transportation Policies in new Official Plan
 - Develop transportation model inputs to test and evaluate recommended cycling and walking mode share targets for 2031 and 2041 horizon years.
 - Review results and identify implications on the City's Transportation Strategy including any additional policies measures needed to support recommended mode share targets.
 - Summarize infrastructure investments and policies needed to achieve recommended plan for inclusion in TMP.
- East Side Transportation Study
 - Review study recommendations in relation to the long-term vision and growth strategy for the City
 - Develop transportation model inputs to test and evaluate implications of new potential MTO corridors to the East of the City for the 2041 horizon year and for Full Build-Out land use scenario.
 - Summarize infrastructure investments in recommended plan for inclusion in TMP.

ii. Establish and Test Alternative Transportation Strategy Scenarios

- Develop 3-4 integrated Transportation Strategy Scenarios that reflect various combinations of the mode share targets and network enhancements identified in task i)
- Develop transportation model inputs to test and evaluate implications of Transportation Strategy Scenarios for the 2031 and 2041 horizon years.
- Prepare an assessment of the “Future State of the Transportation System” for each Transportation Strategy Scenario using performance criteria developed in Phase 1

iii. Develop Draft Transportation Strategy & Mode Share Targets

- Assemble results of background studies and model results from testing alternative transportation strategies
- Undertake feasibility assessment of achieving mode share targets for 2031 and 2041 horizon years for each transportation strategy considering such factors as background research results, emerging transportation and environmental trends, implementation costs and risks, user benefits/impacts, degree of municipal influence, and any other factors deemed appropriate.
- Develop a Draft Recommended Transportation Strategy & Mode Share Target for the TMP. Prepare an assessment of the “Future State of the Transportation System” for the Draft Recommended Transportation Strategy & Mode Share Target using performance criteria developed in Phase 1

iv. Community Consultation – Draft Transportation Strategy & Mode Share Targets

- Develop a synthesis report of background research, data used, key assumptions, and results of transportation demand forecasting work tasks used to develop the draft Transportation Strategy & Mode Share Targets
- Develop a consultation program for this phase of the project to share findings from background studies, obtain input on the Draft Transportation Strategy, and seek feedback on preliminary results and proposed recommendations

- Prepare consultation material suitable for display at public open houses and other events, digital engagement, and via other forms of engagement and outreach
 - Organize and attend 1 Public Open House, intended to provide a forum for the public and stakeholder organizations to provide feedback on draft material and recommendations, and prepare a Consultation Summary Report incorporating feedback received
- v. Steering Committee Meeting 3 – Recommended Transportation Strategy & Mode Share Targets
- Assemble the Transportation Strategy & Mode Share Target findings and feedback from public consultation and present recommendations for review by project Steering Committee
 - Incorporate feedback and direction from the Steering Committee as appropriate
- vi. Council Presentation 2 – Recommended Transportation Strategy & Mode Share Targets Approval
- Prepare a presentation (and assist in the development of a supporting staff report) to summarize the work undertaken in Phase 2.1 of the study, key findings and recommendations
 - Identify key decisions required from Council to support next steps of the study

2.2. Development of Infrastructure Alternatives – The second step in Phase 2 will undertake an assessment of the need for additional road network capacity improvements assuming implementation of all the initiatives identified in the approved Transportation Strategy and achievement of the future Mode Share Targets established to guide the TMP update. This work will use the City-wide to transportation model and the Transportation System Performance Criteria developed in Phase 1 to determine the extent of road deficiencies and the types of improvements that will still be needed to address future needs.

Key Tasks

- i. Future Transportation Strategy - Assessment of Transportation Network Performance
- Develop transportation model inputs to test and evaluate implications of Recommended Transportation Strategy for the 2031 and 2041 horizon years as well as build-out scenario.

- Prepare an assessment of the “Future State of the Transportation System” for Recommended Transportation Strategy for the 2031 and 2041 horizon years and full build-out scenario using performance criteria developed in Phase 1
- Identify capacity and operating deficiencies for the road network
- ii. Detailed Technical Review of Road Network Deficiencies
 - Using modelling tools such as Screenline Analysis and Select Link Analysis and scenario testing, determine the nature of transportation deficiencies for the 2031 and 2041 horizon years and full build-out scenario and the range of improvement alternatives that should be considered.
- iii. Road Network Improvements to Support Other Initiatives
 - Summarize any road based infrastructure recommendations from Task 2.1 to support the recommended Transportation Strategy and support the target mode shares.
- iv. Community Consultation – Road Network Improvement Needs
 - Develop a synthesis report of background research, key assumptions, key infrastructure recommendations from Task iii, and the results of transportation demand forecasting work in Tasks i) and ii)
 - Develop a consultation program for this phase of the project to share findings and seek feedback on preliminary results and proposed recommendations
 - Prepare consultation material suitable for display at public open houses and other events, digital engagement, and via other forms of engagement and outreach
 - Organize and attend 1 Public Open House, intended to provide a forum for the public and stakeholder organizations to provide feedback on draft material, and prepare a Consultation Summary Report incorporating feedback received
- v. Steering Committee Meeting 4 – Development of Infrastructure Improvement Needs
 - Assemble the findings from the Road Network Improvement Needs and feedback from public consultation and present recommendations for review by project Steering Committee

- Incorporate feedback and direction from the Steering Committee as appropriate
- vi. Council Presentation 3 - Infrastructure Improvement Needs Approval and Key Decision Point
 - Prepare a presentation (and assist in the development of a supporting staff report) to summarize the work undertaken in Phase 2.2 of the study, key findings and recommendations
 - Identify key decisions required from Council to support next steps of the study

2.3. Preferred Infrastructure Plan – The third step of the Assessment of Alternative Solution Phase will complete the high level assessment and evaluation of various road network improvement alternatives. The assessment and evaluation criteria will incorporate the Transportation System Performance Criteria and Transportation Vision developed in Phase 1 and will also include a consideration of the potential effects on the natural, social, cultural, built, and economic environments.

Relative priorities amongst competing projects should be assessed and timelines for implementation should be estimated based on when the need for each project is expected to materialize. Order of magnitude capital costing for each project should be developed to facilitate future capital budget planning.

Key Tasks

- i. Assemble Background Data
 - Assemble background mapping of key environmental, cultural and heritage features and constraints from City GIS files and other secondary sources such as Provincial Ministries, the County of Peterborough, ORCA, etc. to support assessment and evaluation of alternatives.
 - Identify missing data or data gaps to support evaluation process and work with City to obtain
- ii. Develop Evaluation Criteria for Road Network Alternatives
 - Develop a set of evaluation criteria for road network alternatives in accordance with the Municipal Class EA process, that incorporate the Transportation System Performance Criteria and Transportation Vision developed in Phase 1 and also include a consideration of climate change objectives and climate resiliency along with the potential effects on other aspects of the natural, social, cultural, built, and economic environments

- Develop a methodology for completing a Benefit-Cost Assessment for each alternative to provide input into the assessment process
 - Determine an assessment methodology that includes a process for evaluating alternatives (network wide or for each deficiency separately) and a process for assessing / measuring each of the proposed evaluation criteria
 - Assess the strengths and weaknesses of different evaluation methodologies (Reasoned Argument, Weighting and Scoring, Multiple Account Evaluation, etc.) and recommend a robust evaluation framework for alternatives that incorporates sensitivity analysis or a combination of methods
- iii. Develop and Assess Road Network Improvement Alternatives
- Based on the approved Road Network Improvement Needs develop a methodology to determine the range of reasonable improvement alternatives that should be considered
 - Undertake the quantitative and/or qualitative assessment of each alternative in accordance with the recommended evaluation process
- iv. Sensitivity Testing
- Develop a methodology to incorporate sensitivity testing into the evaluation process through strategies such as developing combination networks of different alternatives to test cumulative affects, using higher or lower demand forecasts (from previous tasks) to test resiliency of alternatives, etc.
 - Develop transportation model inputs to test and evaluate a Full City Build Out Scenario.
 - Refine initial evaluation results and findings based on sensitivity testing
- v. Develop Recommended Transportation Plan
- Based on the evaluation process and sensitivity testing, develop a road network improvement plan including mapping to illustrate proposed projects
 - Develop / summarize road network improvement projects, cost estimates and identify the applicable Class EA Schedule for each recommended project (including those identified in background studies reviewed in 2.1 i).

- Identify order of magnitude property impacts (by type) and develop a range of high level property cost estimates
 - Summarize key policy recommendations and other proposed infrastructure projects from background studies reviewed in 2.1 i) for inclusion in Recommended Transportation Plan
 - Identify long term corridor protection needs, strategies, and policies to address future demands beyond the 2041 planning horizon
 - Review major road network classifications identified in Official Plan and recommend any changes, identify proposed ROW widths and protection policies, and recommend applicable transportation policies to support Recommended Transportation Plan
 - Determine a methodology to prioritize all transportation spending initiatives identified through the background studies and the recommended road network improvement plan incorporating such factors as equity between modes, timing of need, benefit-cost results, implementation feasibility, climate change benefits, or other factors that might influence priorities for funding.
 - Develop an implementation / phasing plan for all policy and infrastructure recommendations
- vi. Community Consultation – Recommended Transportation Plan
- Summarize the key findings and recommendations from all proceeding tasks into a Recommended Transportation Plan
 - Develop a consultation program for this phase of the project to share findings, obtain input on evaluation criteria and trade-offs, and seek feedback on preliminary results and proposed recommendations
 - Prepare consultation material suitable for display at public open houses and other events, digital engagement, and via other forms of engagement and outreach
 - Organize and attend 1 Public Open House, intended to provide a forum for the public and stakeholder organizations to provide feedback on draft material, and prepare a Consultation Summary Report incorporating feedback received
- vii. Steering Committee Meeting 5 – Recommended Transportation Plan
- Prepare a presentation of the Final Draft Recommended Transportation Plan for review by project Steering Committee

- Incorporate feedback and direction from the Steering Committee as appropriate
- viii. Council Presentation 4 - Recommended Transportation Plan – Approval
- Prepare a presentation of the Final Draft Recommended Transportation Plan (and assist in the development of a supporting staff report) to seek approval from Council
 - Identify key decisions required from Council to support finalization of the study

Appendix B - Transportation Master Plan: Ongoing Studies

The following is additional information for each of the five separate studies that are currently taking place that will form part of the Transportation Strategy Development step when assessing alternative solutions:

2.1.1 Transit Operations Review and Long-Term Growth Study

Phase 1 of this study will recommend a new route structure and service plan for the existing transit service that can be implemented in the short to medium term to improve current service.

Phase 2 of this study will develop a long-term vision and growth strategy for transit in the City, will assess and evaluate future mode share targets for transit use, and will outline the service strategy and investments needed to achieve these targets to be used as a basis for future planning and budget forecasting. The future mode share targets and transit ridership forecasts associated with this long-term vision will be used during the alternative solutions phase of the Transportation Master Plan to determine the role enhanced transit can play in reducing the need for road improvements to support future growth. Phase 2 of the Transit Operations Review is anticipated to be completed by late spring of 2020.

Phase 3 of this study will complete functional planning for a new or upgraded downtown transit terminal.

2.1.2 Traffic Operations Review

The City-wide Traffic Operations review will focus on improvements that can be made in the next few years to improve traffic flow and safety at localized intersections and on key arterial road corridors.

Recommendations of this study could include construction of improvements such as local widening, turning lanes, etc. The outcome of the Traffic Operations Review will be a series of small to medium sized projects that can be implemented relatively easily (assuming further approvals are not required) and could help to alleviate congestion or improve safety in the near term.

Traffic Calming and community engagement can be used to begin addressing some of the concerns in neighbourhoods currently experiencing cut-through traffic. As part of this component of the study, the recommended policy, process and traffic calming tools developed as part of the review will be applied in a series of neighbourhoods across the City.

Council, at their meeting of October 28, approved the following motion:

“That staff report back to Council prior to the 2021 budget review process on traffic calming measures such as, but not limited to, Bollards, Humps, Intersection Bulbs, Rumble Strips, Painting Techniques, in Residential Neighbourhoods, and a plan to implement them in at least 5 neighbourhoods, one in each Ward of the City, in 2021.”

To implement this motion, work on a Traffic Calming Policy and neighbourhood review will need to be advanced and will begin in early 2020 to allow for project completion in the late fall of 2020, in time for the 2021 budget review process. With current staff resources and workload, the other components of the Traffic Operations Review will begin later in 2020.

The recommended policies and projects from these studies will be included in the TMP. Capital projects recommended in this review will be prioritized along side the larger projects identified during the TMP. The degree to which short to medium term operational improvements at intersections can also address long term needs will be considered as part of the work within the TMP.

2.1.3 Signal Improvement Program

This project will implement a new computerized system to optimize the co-ordination of the City's traffic signals and to test and evaluate the benefits of investing in “traffic adaptive” signals, which can automatically respond in real time to changes in traffic flow. The initial implementation will focus on a test corridor to evaluate and monitor the performance of the “adaptive” system prior to developing an implementation plan to deploy this new infrastructure across all or some of the 130 signalized intersections in the City.

The results of the test corridor will quantify the degree of capacity improvement that can reasonably be achieved by this type of system and where it is best suited. As part of the Transportation Master Plan, the costs and benefits of this strategy can be compared to other strategies to address future transportation needs and determine if new roads or road widening can be deferred or eliminated by improving traffic flow alone. An RFP for the new signal system and the “traffic adaptive” test corridor is scheduled to be released by the end of 2019, with implementation of the test corridor targeted for late 2020. Ongoing implementation of traffic signal upgrades on future corridors would continue over the next 5 years subject to annual budget approvals.

2.1.4 Cycling Network Update

This project will build upon the cycling network established in the 2012 TMP. Current work will identify changes to policies and current

infrastructure gaps in the network and opportunities for new facilities to encourage increased rates of cycling and walking.

As part of this study, new targets will be established for the share of future trips that could be made by walking and cycling, along with the investment levels required to build a network of infrastructure to achieve these targets. The future mode share targets associated with this long-term vision will be used during the alternative solutions phase of the TMP to determine the role enhanced cycling and walking can play in reducing the need for road improvements to support future growth. The recommended policies and projects from the Cycling Network study will be assessed and prioritized along with other capital projects identified in the Transportation Master Plan. The Cycling Network Update is anticipated to start in early 2020 and is expected to be completed and presented to Council in late 2020.

2.1.5 East Side Transportation Study

Completion of the East Side Transportation study was directed by Council in response to the approval of the Ashborough Village development application. This study will set out the long-range transportation network for city lands east of the Otonabee River associated with the growth and development of the Liftlock Secondary Plan area.

The recommended policies and projects from this study will be included in the Transportation Master Plan, and capital projects recommended in this study will be assessed and prioritized along with larger projects identified during the Transportation Master Plan. The East Side Transportation Study is scheduled to start in early 2020 and the final recommendations are expected to be completed and presented to Council in early 2021.